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Transportation Impact Study

PROPOSED MIXED-USE DEVELOPMENT

0 Humber Station Road
Town of Caledon

April 17, 2026
Project NT-24-103
City/Region File PRE-2024-0056

Prepared for: Satwant Deol

TOWN OF CALEDON
PLANNING
RECEIVED
07/23/2026

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NextEng Consulting Group Inc

April 17, 2026

188 La Roca Avenue
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Attention: Mr. Satwant Deol

Re: Engineering Service – Transportation Impact Study
Proposed Mixed-Use Development
0 Humber Station Road, Town of Caledon
City/Region File PRE-2024-0056
Project No. NT-24-103

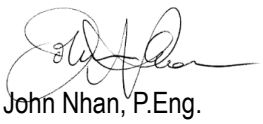
Nextrans Consulting Engineers, a Division of NextEng Consulting Group Inc., is pleased to present the enclosed Transportation Impact Study in support of Official Plan Amendment and Zoning By-law Amendment Applications for a proposed mixed-use development at the property known as 0 Humber Station Road in the Town of Caledon. The development proposes 10 buildings with residential and retail land uses, for a total of 660 residential dwelling units and 5,645.72 sqm (60,770.02 sqft) of retail GFA divided into four development phases.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

Prepared by:



John Nhan, P.Eng.
Project Engineer

Approved by:

Richard Pernicky, MITE
Principal

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Transportation Impact Study	April 17, 2026	First submission OPA/ZBA.

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1.0 INTRODUCTION

Nextrans Consulting Engineers ("Nextrans"), a Division of NextEng Consulting Group Inc., was retained by Satwant Deol ("client") to prepare this Transportation Impact Study (TIS) in support of Official Plan Amendment and Zoning By-law Amendment Applications for a proposed mixed-use development at the property known as '0' Humber Station Road (herein referred to as the "subject site") in the Town of Caledon. The subject site is located on the east side of Humber Station Road and north of King Street. The subject site location is provided in **Figure 1**.

Figure 1: Subject Site Location

Source: Google Earth

1.1. TRANSPORTATION PLANNING CONTEXT

Existing

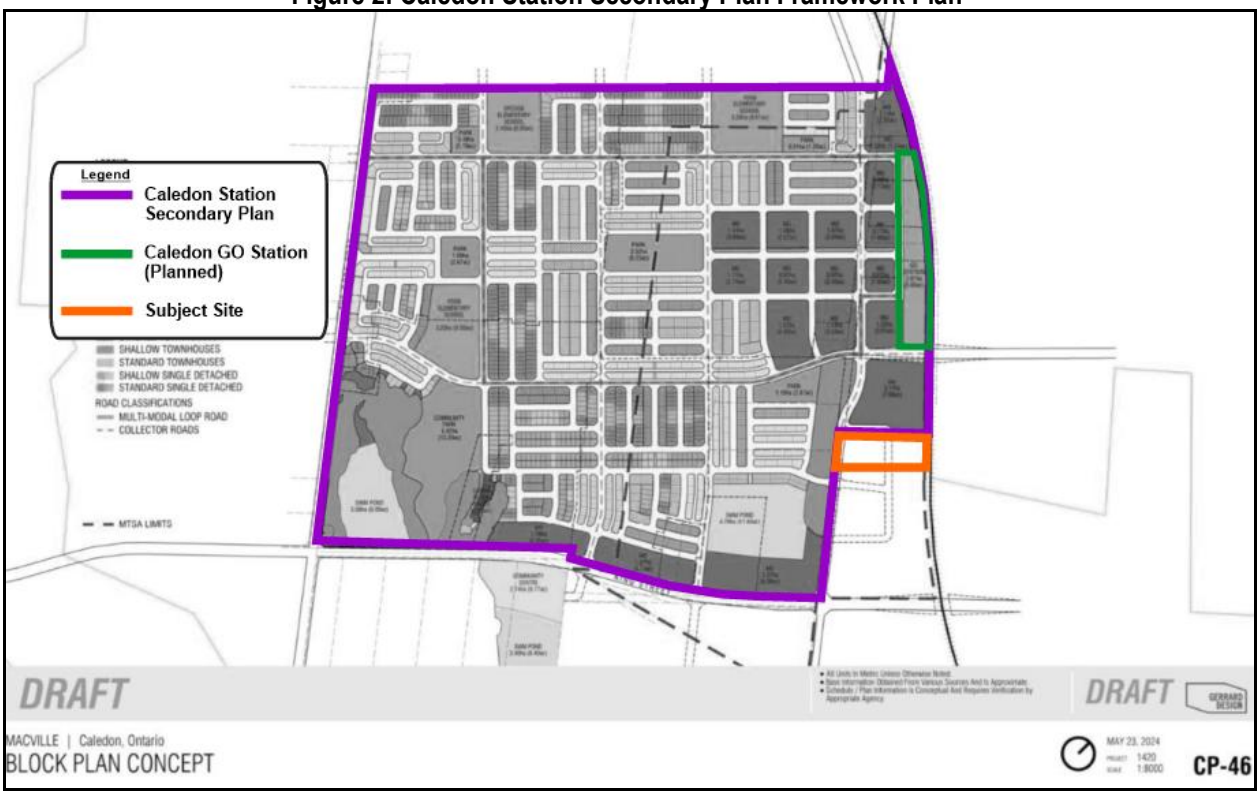
The subject site is situated in a predominantly rural area characterized by low-density land uses, agricultural lands, and low-density residential estate detached homes. The surrounding road network is primarily composed of two-lane rural arterial and collector roadways. The subject site is located within the Dry Industrial Lands area of the Town's Official Plan, located northeast of King Street / Humber Station Road and adjacent to (outside of) the Caledon Station Secondary Plan. The subject site and lands south of the subject site towards Humber Station Road and King Street are located within the Dry Industrial Lands area within the Town of Caledon Official Plan. The subject site is located within a Protected Major Transit Station Area (PMTSA) as defined under the Planning Act and is located within a Mobility Transit Hub Zone as per Ontario Regulation 171/21.

Future

The future transportation and land use context within the area surrounding the Humber Station Road and King Street area is being shaped through several coordinated planning initiatives led by the Town of Caledon. **Figure 2** illustrates an overview of the Caledon Station Secondary Plan and future Caledon GO Station relative to the subject site. The

proposed Caledon Station Secondary Plan establishes a framework for a transit-oriented community centered around the planned Caledon GO Station, located near Humber Station Road and King Street. The Secondary Plan envisions a compact, mixed-use neighbourhood that integrates residential, commercial, institutional, and employment uses in proximity to the future station to support transit ridership and complete community development. In parallel, the Town has undertaken the Bolton GO Station Area Dry Industrial Lands Review, which is evaluating the conversion of existing dry industrial lands at the Humber Station Road and King Street intersection to permit a broader mix of uses, including residential and commercial development, to better align with the emerging transit hub and planned intensification within the Major Transit Station Area. Together, these initiatives support a long-term vision for a transit-oriented mixed-use district anchored by the future GO station and enhanced multimodal connectivity.

Figure 2: Caledon Station Secondary Plan Framework Plan



Source: Caledon Station Secondary Plan Transportation Study (BA Group, July 2024)

1.2. PROPOSED DEVELOPMENT

The architectural site plan is illustrated in **Figure 3** enclosed in **Appendix A**. The phasing plan is shown in **Figure 4**. The development proposes 10 buildings with residential and retail land uses, for a total of 660 residential dwelling units and 5,645.72 sqm (60,770.02 sqft) of retail GFA divided into four development phases. Phase 1 and Phase 2 of development will each provide a 20-storey mixed-use building of 330 residential units and 431.24 sqm of ground floor retail GFA. Phase 3 will provide 4 buildings of one to two storeys with a total of 2,404.32 sqm of retail GFA. Phase 4 will provide 4 buildings of one to two storeys with a total of 2,378.92 sqm of retail GFA. **Table 1** summarizes the development site statistics.

Table 1: Summary of Development Site Statistics

Parameter	Phase				
	1	2	3	4	Total
Description	20-storey residential	20-storey residential building	4 retail buildings of 1-2 storeys	4 retail buildings of 1-2 storeys	-

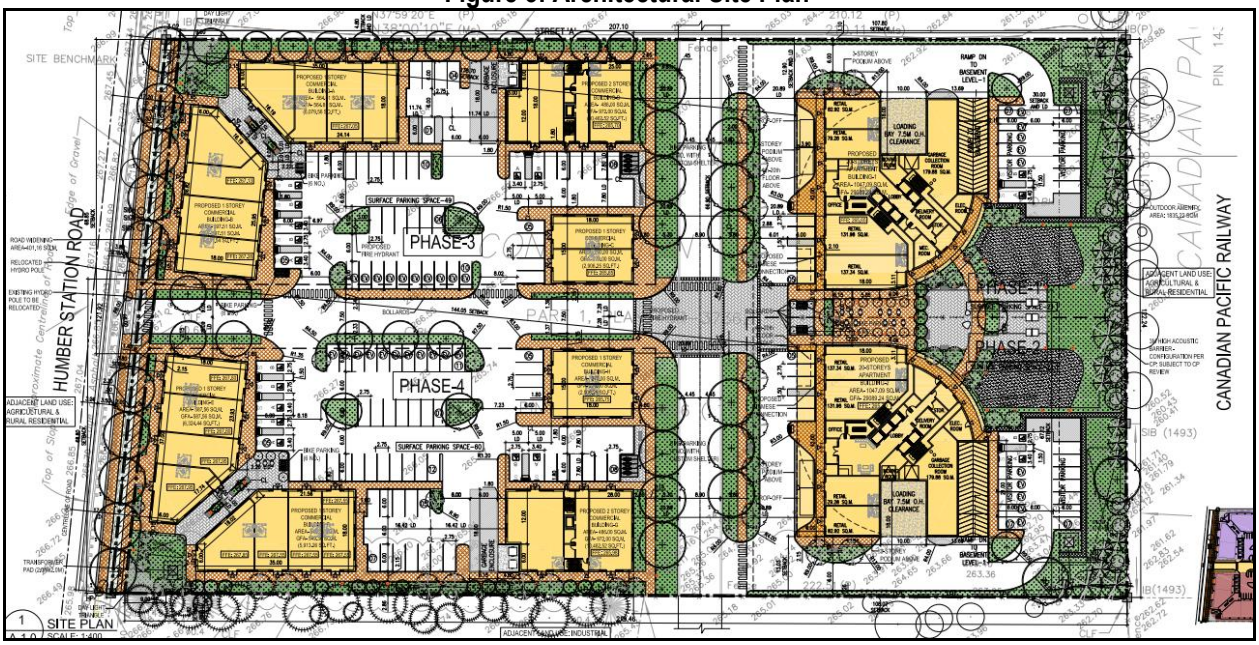
	building with ground floor retail	with ground floor retail			
Land Use	Mixed-Use	Mixed-Use	Retail	Retail	-
Residential Units	330	330	-	-	660
Retail GFA (sqm)	431.24	431.24	2,404.32	2,378.92	5,645.72
Retail GFA (sqft)	4,641.83	4,641.83	25,879.89	25,606.48	60,770.02
Vehicle Parking	-	-	-	-	-
Residential	220	220	-	-	440
Visitor	14	14	-	-	28
Non-Residential	5	5	49	60	119
Total	239	239	49	60	587
Barrier-Free Parking (Incl.)	10	10	7	7	34
Bicycle Parking	78	78	22	14	192
Loading Spaces	1	1	1	1	4

As identified within the Caledon Station Secondary Plan Transportation Study prepared by BA Group dated July 2024 ("Secondary Plan Transportation Study"), a future north-south public street (Street 'A') is proposed within the Dry Industrial Lands area located northeast of King Street / Humber Station Road and adjacent to (outside of) the Caledon Station Secondary Plan.

As shown within the architectural site plan, public Street 'A' is will intersect through the subject site as a north-south collector road and connect to Humber Station Road to the north and King Street to the south. Given the uncertainty of the completion of the north-south public Street A and the uncertainty of the development timeline of neighbouring properties along Street A, this Study assumed that Street A will be constructed up to the limits of the subject site in Phase 1, for access of buildings in Phase 1 and Phase 2 to the external road network at Humber Station Road through Street B (via the Street A / Street B intersection).

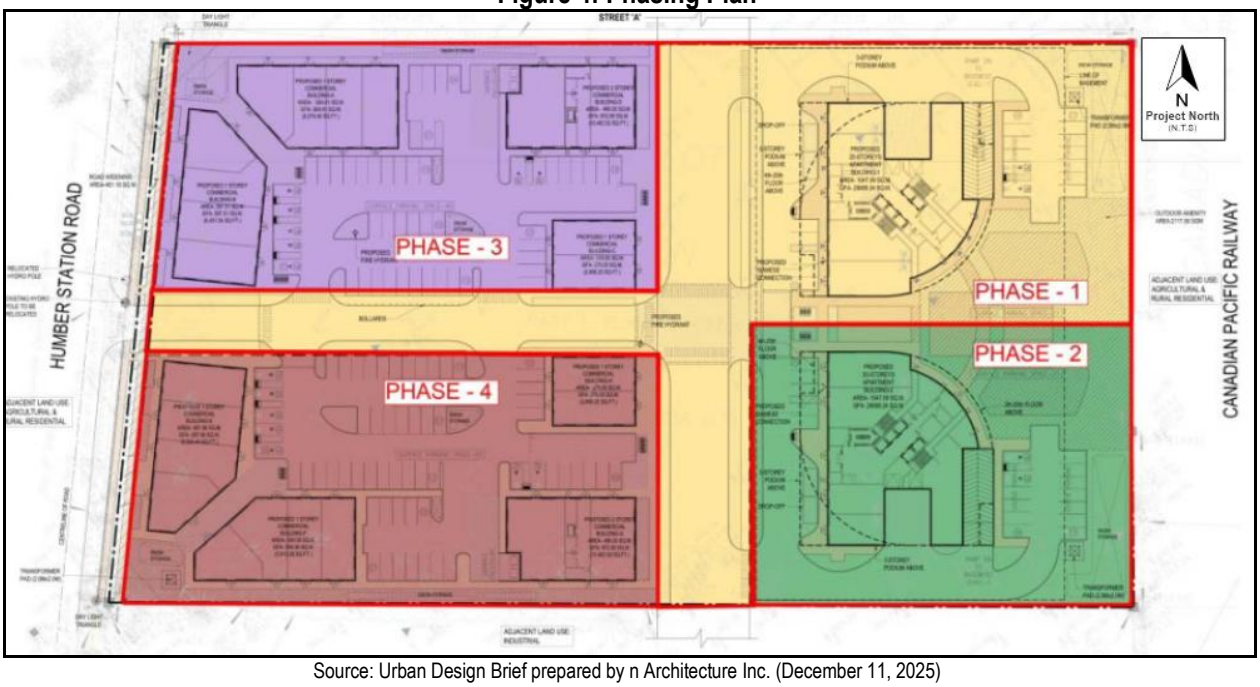
A future east-west private street (Street 'B') is proposed within the subject site as part of Phase 1 that will provide direct access to Humber Station Road. This study assessed the subject site with Street B at Humber Station Road as a full moves access and as the only access onto the external road network.

Figure 3: Architectural Site Plan



Source: n Architecture Inc. (December 11, 2025)

Figure 4: Phasing Plan



Source: Urban Design Brief prepared by n Architecture Inc. (December 11, 2025)

1.3. STUDY HORIZON

Given the uncertainty of the proposed development construction timeline and multiple development phases, the study assumed a 10-year horizon (2036) based on five years following the assumed full build-out year of 2031.

1.4. STUDY METHODOLOGY

The purpose of this study is to assess the transportation and traffic impact generated from the proposed development onto the surrounding road network and determine mitigative measures to improve traffic operations.

The study adheres to the Region of Peel online TIS Guidelines and Terms of Reference comments provided by the Region of Peel and Town of Caledon transportation staff (see **Appendix B**).

Critical movements were identified, including overall intersections, intersection movements with v/c increased to 1.00 or higher and 95th percentile queue lengths that exceed the available storage length. Mitigation measures were recommended for any critical movements.

The intersection capacity analysis for the study area was assessed for the weekday AM and PM peak hours and Saturday peak hour. The traffic operations were analyzed using Synchro 10 for intersection capacity analysis which incorporates Highway Capacity Manual (HCM) 6th Edition methodology, and SimTraffic for queueing analysis.

1.5. STUDY AREA

The intersection study area was determined by assessing the size of the proposed development and the transportation impact that is anticipated from the proposed development. The study area includes the following intersections:

<u>Existing Intersections</u>

- Humber Station Road / King Street (signalized)

Proposed Intersections

- Humber Station Road / Street 'B' (Private Street)
- Street 'B' (Private Street) / NW Retail Driveway (Unsignalized)
- Street 'B' (Private Street) / NE Retail Driveway (Unsignalized)
- Street 'B' (Private Street) / SW Retail Driveway (Unsignalized)
- Street 'B' (Private Street) / SE Retail Driveway (Unsignalized)
- Street 'B' (Private Street) / Street 'A' (Public Street) (Unsignalized)

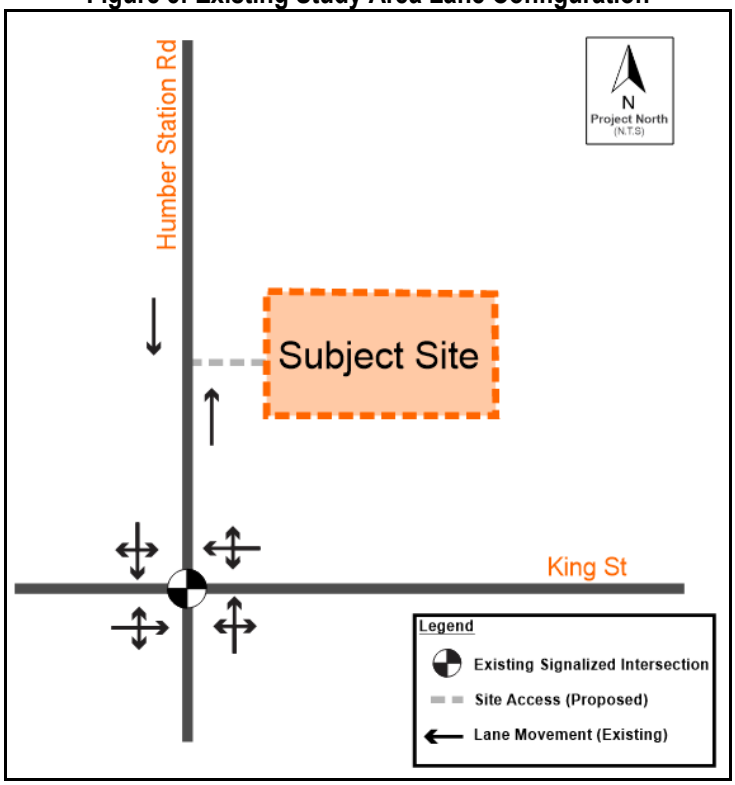
2.0 EXISTING TRANSPORTATION CONDITIONS

2.1. EXISTING ROAD NETWORK

Illustrated in **Figure 5** is the existing lane configuration and intersection control of the roads within the study area. The existing road network descriptions are as follows.

- **Humber Station Road** is a north-south collector road under the jurisdiction of the Town of Caledon that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 70km/h north of King Street and 80km/h south of King Street.
- **King Street** is an east-west major arterial road under the jurisdiction of Peel Region that consists of a two-lane road cross section (one lane per direction) and maintains a posted speed limit of 60km/h east of Humber Station Road and 80km/h west of Humber Station Road.

Figure 5: Existing Study Area Lane Configuration



2.2. EXISTING TRANSIT FACILITIES

There are no existing scheduled transit facilities within walking distance to the subject site.

The closest existing transit services available to the subject site are per the following.

- **Brampton Transit Bus Route 41 Bolton** is a generally north-south local bus route that operates along primarily along Highway 50, between the Bolton Heights Road / Kingsview Drive / Columbia Way area in Bolton to the north and the Queen Street East / Fogal Road area in Brampton to the south. Route 41 operates during the weekday AM and PM peak periods, with headways of 1 hour 50 minutes. The nearest bus stop is located approximately 2.6km southeast at Coleraine Drive and Holland Drive.

- **GO Bus Route 38 Bolton/Malton** is a generally north-south regional bus route that operates primarily along Highway 50, between the Queen Street North / Columbia Way area in Caledon to the north and Malton GO Station in Mississauga to the south. Connection to Union Station via Kitchener GO Train Line is available at Malton GO Station. Route 38 operates during the weekday AM and PM peak periods, southbound-only morning service and northbound-only afternoon service. Route 38 has 60-minute and 30-minute headways in the weekday AM and PM peak periods, respectively. The nearest bus stop is located approximately 2.6km east at Hwy 50 and Columbia Way.
- **TransHelp** is a specialized door-to-door public transit rideshare service offered by Peel Region to Peel Region residents with disabilities, for travel across Peel Region. Service is booked in advance through call or online. The service is provided by TransHelp buses or contracted vendors that utilize taxis, vans, or other accessible vehicles.
- **Caledon Community Services** provides specialized transportation service available to Town of Caledon senior residents, Caledon residents with disabilities, and all Caledon residents attending Caledon Community Services programs and services (e.g. medical appointments, support groups, social service programs, post-secondary education, employment training, employment, volunteer activities, and health and wellness programs), for travel across Caledon. Service is booked in advance through call or online.

It is noted that based on the transportation study prepared for the Caledon Secondary Plan, local bus transit routes closer the subject site are planned.

2.3. EXISTING ACTIVE TRANSPORTATION NETWORK

Within the study area, there are no existing active transportation facilities given the rural nature of the surrounding lands.

2.4. TRAFFIC DATA COLLECTION

Turning movement counts (TMC) were recorded by Spectrum Traffic Data for the existing study area intersection of King Street (RR9) / Humber Station Road.

The TMC data was collected on Thursday, March 20, 2025, during the weekday AM and PM peak periods of 7:00 AM to 10:00AM and 4:00 PM to 7:00 PM, respectively, and on Saturday, March 22, 2025, during the peak period of 11:00 AM to 6:00 PM. The peak hour from each peak period was used for the traffic operations analysis of this study. Traffic data is enclosed in **Appendix C**.

2.5. EXISTING INTERSECTION CAPACITY ANALYSIS

The existing intersection capacity analysis has been conducted for the weekday AM and PM peak hours. **Figure 6** exhibits the existing traffic volumes within the intersection study area. The existing intersection capacity analysis results for the study area intersection is summarized in **Table 2**. Detailed Synchro and SimTraffic results for existing conditions are provided in **Appendix D**.

Figure 6: Existing Traffic Volumes

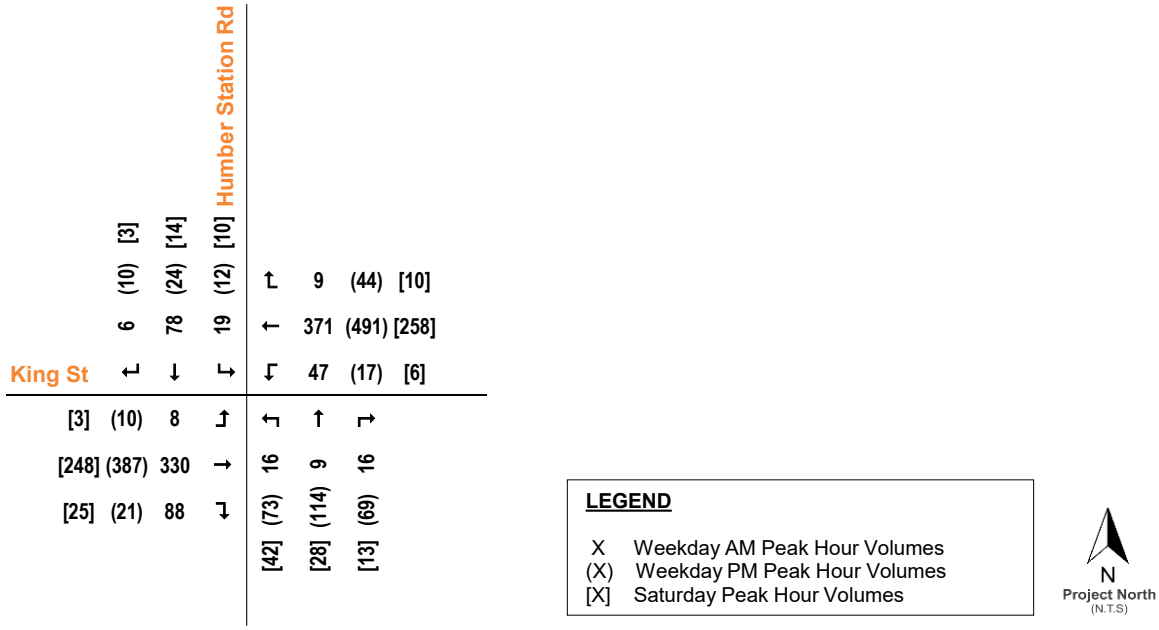


Table 2: Existing Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour					Approx. Storage Length (m)
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		
					50th	95th				50th	95th				50th	95th	
Signalized																	
Humber Station Rd / King St	Overall	-	9	A	-	-	-	13	B	-	-	-	8	A	-	-	-
	EBLTR	0.38	6	A	-	40	0.38	8	A	-	52	0.23	5	A	-	24	-
	WBLTR	0.37	6	A	-	48	0.52	10	A	-	80	0.22	5	A	-	25	-
	NBLTR	0.15	24	C	-	22	0.66	27	C	-	51	0.32	26	C	-	23	-
	SBLTR	0.37	26	C	-	34	0.11	22	C	-	20	0.10	24	C	-	12	-

The following observations are noted for the study area intersection of Humber Station Road / King Street under the existing condition for the studied peak hours.

In the weekday AM peak hour, weekday PM peak hour, and Saturday peak hour, all intersection movements operate well within capacity with acceptable levels of service of LOS C or better.

3.0 FUTURE BACKGROUND TRAFFIC CONDITIONS

A 10-year horizon (2036) was assessed in this study based on five years following an assumed full build-out year of 2031. The future background conditions include existing traffic volumes, general corridor growth, background development traffic volumes, and any future road improvements.

3.1. FUTURE TRANSPORTATION PLANNING CONTEXT

The Caledon Station Secondary Plan is located immediately adjacent to the subject site to the north and west. A transportation study was prepared by BA Group dated July 2024 for the Caledon Station Secondary Plan, the Caledon Station Secondary Plan ("Secondary Plan Transportation Study"). The Caledon Station Secondary Plan will establish a comprehensive community including residential and mixed-use developments, and a multi-modal transportation network within the secondary plan. In addition, a future MTSA and GO Station is planned north of the subject site within the Caledon Station Secondary Plan, which will provide future GO rail service. The Secondary Plan Transportation Study notes that there are opportunities for future bus transit routes and active transportation facilities that will service the secondary plan area which are within proximity to the subject site.

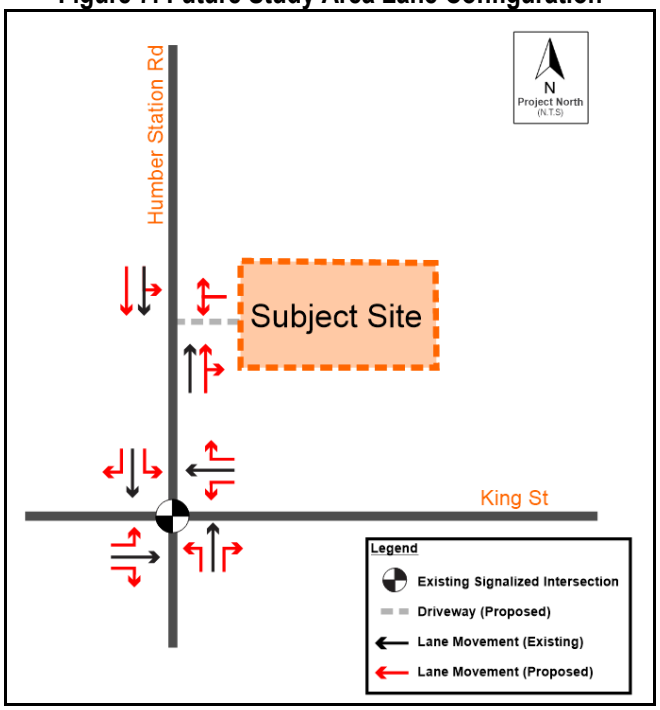
Shown in **Figure 2** is an overview of the Caledon Station Secondary Plan and future Caledon GO Station relative to the subject site. The proposed Caledon Station Secondary Plan establishes a framework for a transit-oriented community centered around the planned Caledon GO Station, located near Humber Station Road and King Street. The Secondary Plan envisions a compact, mixed-use neighbourhood that integrates residential, commercial, institutional, and employment uses in proximity to the future station to support transit ridership and complete community development.

In parallel, the Town has undertaken the Bolton GO Station Area Dry Industrial Lands Review, which is evaluating the conversion of existing dry industrial lands at the Humber Station Road and King Street intersection to permit a broader mix of uses, including residential and commercial development, to better align with the emerging transit hub and planned intensification within the Major Transit Station Area. Together, these initiatives support a long-term vision for a transit-oriented mixed-use district anchored by the future GO station and enhanced multimodal connectivity.

3.2. FUTURE ROAD NETWORK

For the purpose of this Study, the following road improvements within the study area were assumed to be completed and implemented within the 2036 Study horizon based on Phase 2 (2031) of the Secondary Plan Transportation Study and based on the road improvements planned to be provided by 2031 as shown in Figure ES-1 (Road Network Improvements) of the Town of Caledon Multi-Modal Transportation Master Plan (MMTMP). It is noted that full build-out of the Caledon Station Secondary Plan was assessed for 2041 within the Secondary Plan Transportation Study, which is beyond the horizon timeline of this Study. **Figure 7** illustrates the future lane configuration for the intersection study area.

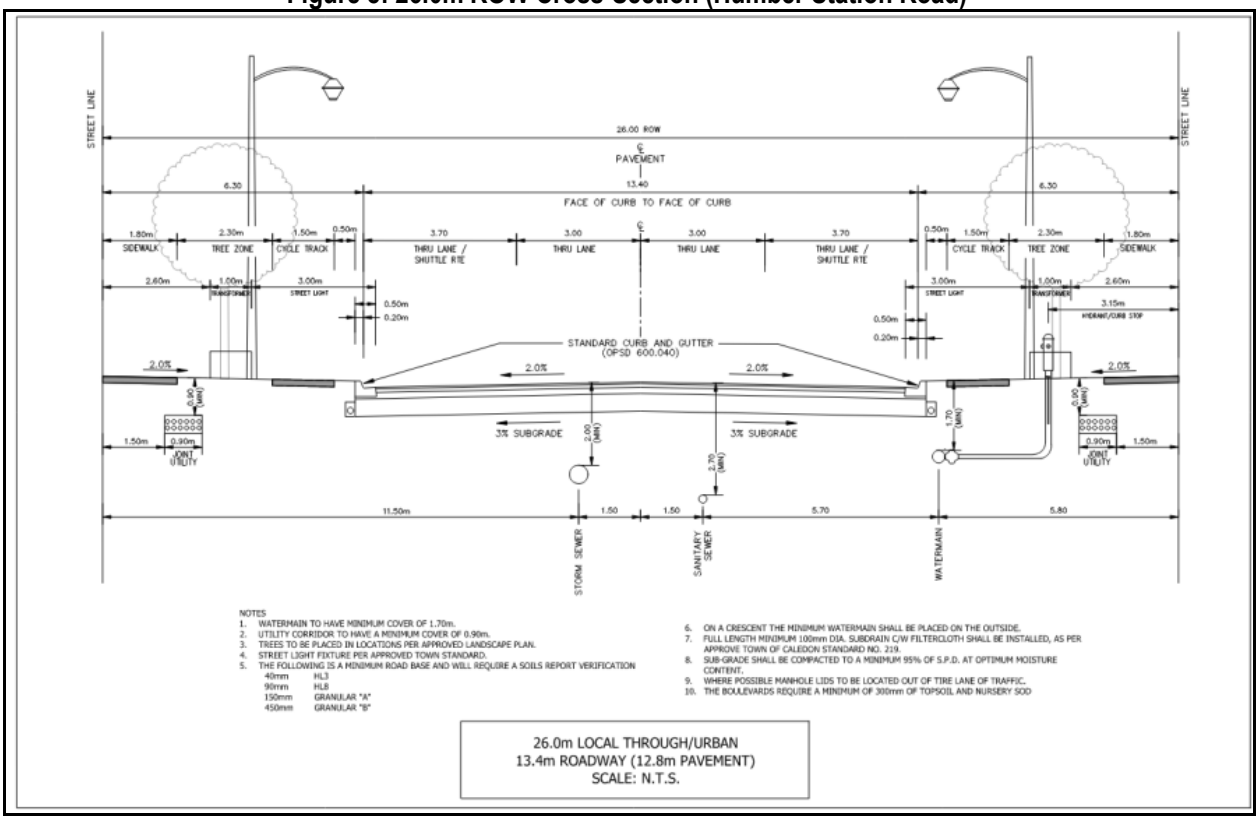
Figure 7: Future Study Area Lane Configuration



Humber Station Road

- Road widening from 2 to 4 lanes between Mayfield Road and approximately 1.5km north of King Street (settlement area limits) by 2031 based on the MMTMP and Secondary Plan Transportation Study. **Figure 8** shows a 26.0m right-of-way cross-section of the proposed road widening of Humber Station Road to 4 lanes as per the Secondary Plan Transportation Study. At the north limits of the secondary plan, Humber Station transitions from an arterial road to a collector road with a 22.0m ROW.
- For the purpose of this Study, the intersection lane configuration of the study area was based the Phase 2 (2031) lane configuration as shown in Figure 12 of the Secondary Plan Transportation Study (enclosed in **Appendix C**). Signal timing plan assumptions for the future condition were based on the Phase 2 Synchro reports enclosed within the Secondary Plan Transportation Study (enclosed in **Appendix C**).
- Based on Figure 12 of the Secondary Plan Transportation Study, Humber Station Road was assumed to be a 2-lane cross section (1 lane per direction) south of King Street and a 4-lane cross section (2 lanes per direction) north of King Street.

Figure 8: 26.0m ROW Cross-Section (Humber Station Road)



Source: Caledon Station Secondary Plan Transportation Study (BA Group, July 2024)

King Street

- Dedicated left-turn lane (50m storage length) and right-turn lane (25m storage length) for all approaches at the intersection with Humber Station Road by 2031 based on Phase 2 (2031 horizon) within the Secondary Plan Transportation Study.

Based on the architectural site plan, the subject development proposes the following.

- Private Street 'B' is a proposed east-west private road that intersects through the subject site and will connect Humber Station Road to the west and Street A to the east. Street B will provide direct driveway access to the retail buildings and access for Buildings 1 and 2 via Street A onto the external road network at Humber Station Road.
- Public Street 'A' is a proposed primarily north-south collector road that will connect King Street to the south (east of Humber Station Road) and Humber Station Road to the north (i.e. through a westerly bend of Street A). Street A will intersect through the subject site, with driveway access for Building 1 (Phase 1) and Building 2 (Phase 2).

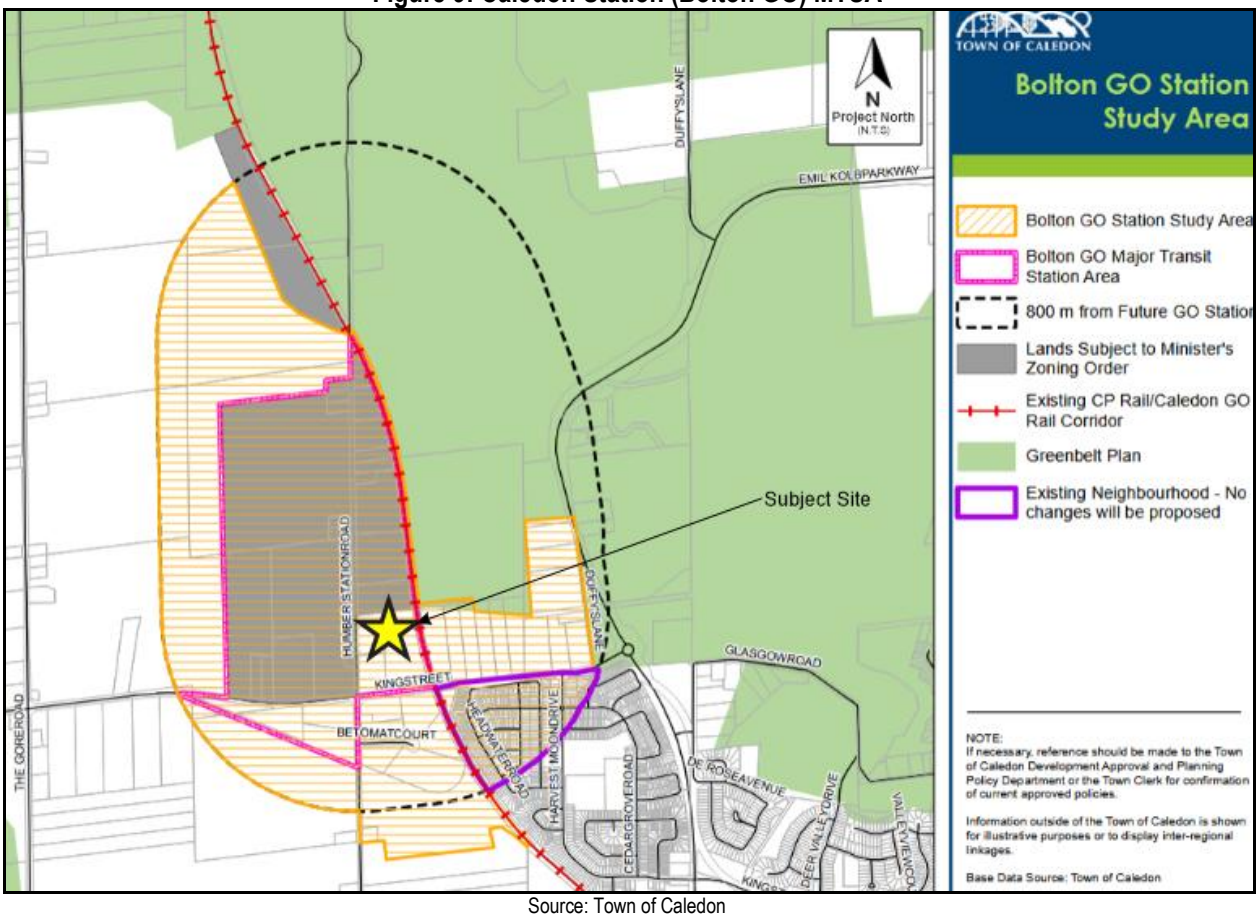
  Given the uncertainty of the completion of the north-south public street and the uncertainty of the development timeline of neighbouring properties along Street A, this Study assumed that Street A will be constructed up to the limits of the subject site, for access of Buildings 1 and 2 to the external road network at Humber Station Road through Street B (via the Street A / Street B intersection).

3.3. FUTURE TRANSIT NETWORK

Caledon Station Major Transit Station Area

The Caledon Station Major Transit Station Area (MTSA) is planned as a compact, transit-oriented community centered on the future Caledon Station GO Transit station along the Kitchener Line in Caledon. Located near the community of Bolton, the MTSA will accommodate growth through higher-density, mixed-use development that integrates residential, employment, commercial, and community uses within walking distance of transit. The area is intended to support sustainable mobility by prioritizing walking, cycling, and transit access while creating a complete community with active streets, public spaces, and strong regional connections. The subject site is located within the Caledon Station MTSA (also known as Bolton GO MTSA) as shown within **Figure 9**.

Figure 9: Caledon Station (Bolton GO) MTSA



Source: Town of Caledon

Caledon Station GO Station

The future Caledon GO Station will be a new transit hub serving the Town of Caledon, located along the Kitchener Line and operated by GO Transit. Planned near within the Caledon Station Secondary Plan and approximately 500m north (within walking distance) of the subject site, the station is intended to improve regional connectivity by providing convenient commuter rail service to destinations across the Greater Toronto and Hamilton Area. The station will support transit-oriented growth by encouraging compact, mixed-use development nearby and improving access to sustainable transportation options, including local transit, walking, and cycling. The GO Station will provide two-way, all-day train service to Toronto and Kitchener.

Future Bus Transit

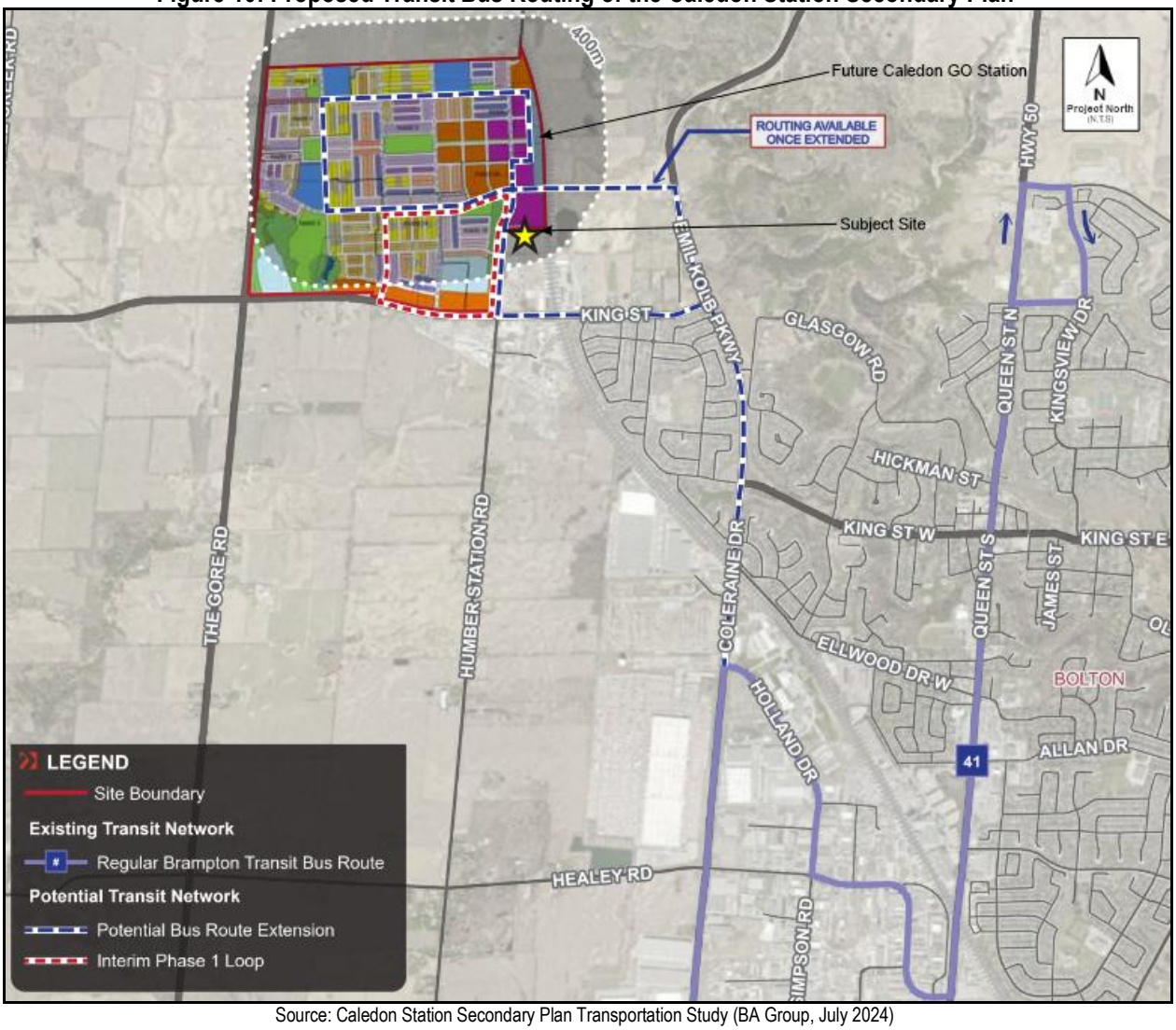
Figure 10 shows the future bus transit routing as per the Secondary Plan Transportation Study.

Under the Caledon Station Secondary Plan, the area will be supported by a local bus network connecting nearby communities, residential areas, and employment nodes. The MTSA is planned as a compact, mixed-use district with residential, commercial, and employment uses within walking and cycling distance of the station, fostering a transit-oriented, complete community with active streets, public spaces, and sustainable mobility options.

An interim Phase 1 bus route is proposed to loop around Humber Station Road, King Street, and the southeast quadrant of the Caledon Station Secondary Plan. A bus route extension is also proposed that provides a more comprehensive coverage of the Caledon Station Secondary Plan and connects to the existing Brampton Transit Bus Route 41 located southeast in Bolton.

Within Figure ES-3 of the Town's 2024 MMTMP, King Street and Humber Station Road are identified as future transit corridors.

Figure 10: Proposed Transit Bus Routing of the Caledon Station Secondary Plan



Source: Caledon Station Secondary Plan Transportation Study (BA Group, July 2024)

3.4. FUTURE ACTIVE TRANSPORTATION NETWORK

The Caledon Station Secondary Plan proposes a multi-modal network with in-boulevard cycle tracks on arterial and collector roads, multi-use paths on collector roads, and sidewalks throughout the secondary plan.

As per Figure ES-2 of the Town's 2024 MMTMP, physically separated bike lanes are proposed along Humber Station Road between Mayfield Road to the south and Castlederg Sideroad to the north. Based on the Secondary Plan Transportation Study, 1.8m cycle tracks and 1.8m sidewalks are proposed on both sides of Humber Station Road north of King Street. At the north limits of the secondary plan, Humber Station transitions from an arterial road to a collector road with a 22.0m ROW, with a proposed multi-use path and sidewalk.

As shown within the architectural plans for the subject site, pedestrian walkways are proposed within the subject site, along Street A, and along Street B.

3.5. CORRIDOR GROWTH

Annual compounded growth rates were applied to the study area roads to account for general traffic growth for the intersection study area roads. **Table 3** summarizes the annual traffic corridor growth rates for the study area roads. A 1.0% per annum growth was applied to King Street based on the Region of Peel Travel Demand Forecasting Model (see **Appendix C**). Although significant traffic volumes are expected to be generated along Humber Station Road from the Caledon Station Secondary Plan area, an additional 1.0% per annum growth was assumed for Humber Station Road, to be conservative.

Table 3: Corridor Growth Rates

Road Corridor	Corridor Annual Growth Rate
King Street	1.0%
Humber Station Road	1.0%

3.6. BACKGROUND DEVELOPMENTS

A number of background developments were identified based on a review of the development applications online portals from the Town of Caledon and through confirmation with the Town based on the TIS Terms of Reference. **Table 4** summarizes the background developments included within this study.

It is noted that 8186 King Street was identified as a background development but was excluded as the development has been built out.

Figure 11 illustrates the locations of the background developments. **Figure 12**, **Figure 13**, **Figure 14**, **Figure 15**, and **Figure 16** exhibit the individual background development traffic volumes. **Figure 17** exhibits the total background development traffic volumes.

Table 4: Summary of Background Developments

No.	Development	Description	Source (Date)
1	Caledon Station Secondary Plan	New mixed-use community that consists of residential, school, and retail uses. Phase 2 (2031) of the Secondary Plan was considered for this Study based on the Secondary Plan Transportation Study horizon years and the ultimate horizon of this Study (2036). Phase 2 includes 5,204 dwelling units (2,269 detached, 1,238 low-rise, 1,697 mid-rise) and an elementary school (approximately 500 students). Includes a new GO Station and is identified as an MTSA.	BA Caledon Station Secondary Plan Transportation Study (July 2024)
2	0 Humber Station Road	Transportation depot development with 163,700 sqft of building GFA.	Aecom Traffic Impact Study Update (January 2025)

Figure 11: Location of Background Developments

Map Source: Google Earth

Figure 12: Caledon Station Secondary Plan, Phase 2 - Caledon GO Station Background Traffic Volumes (Not from Secondary Plan)

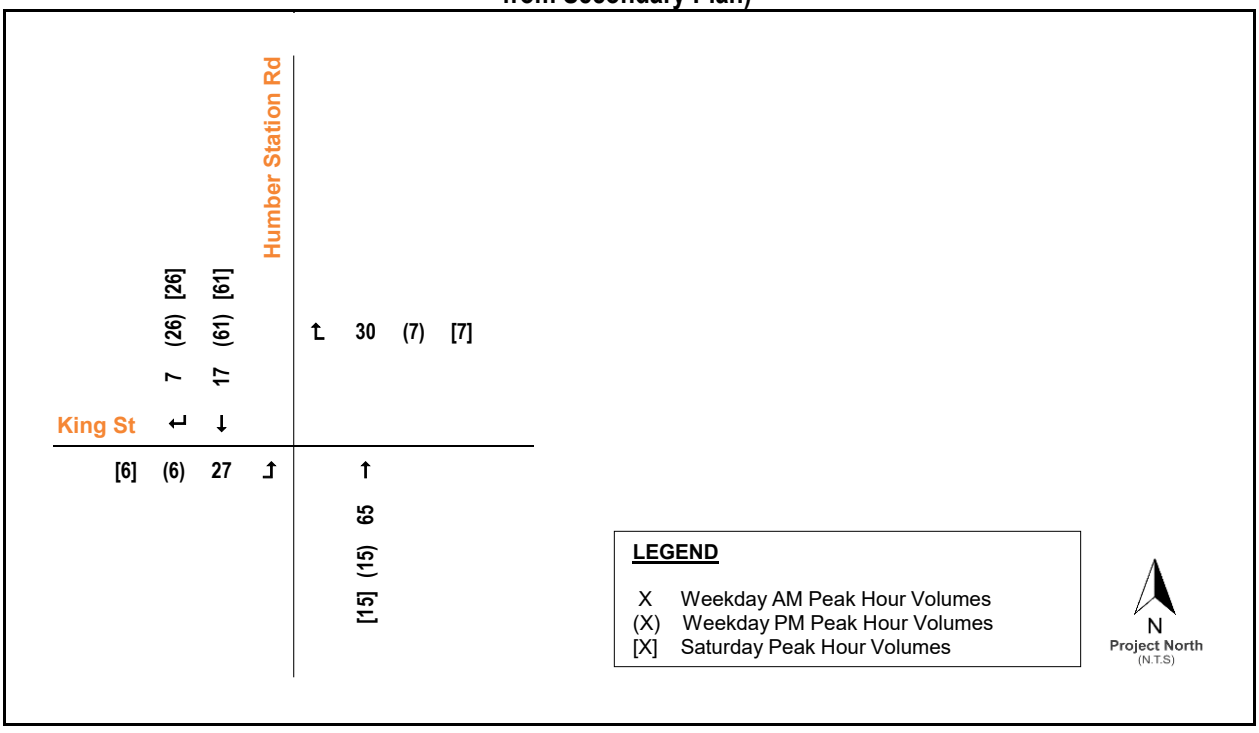


Figure 13: Caledon Station Secondary Plan, Phase 2 - Caledon GO Station Background Traffic Volumes (From Secondary Plan)

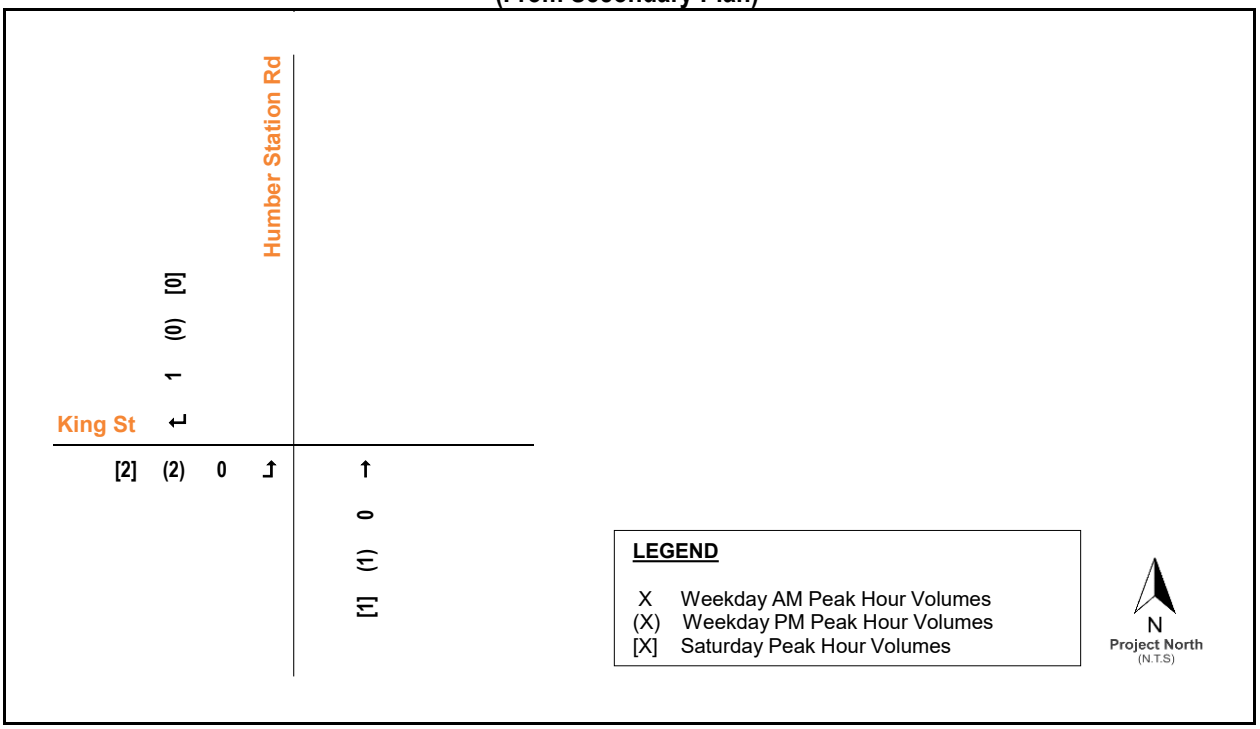


Figure 14: Caledon Station Secondary Plan, Phase 2 - Residential Background Traffic Volumes

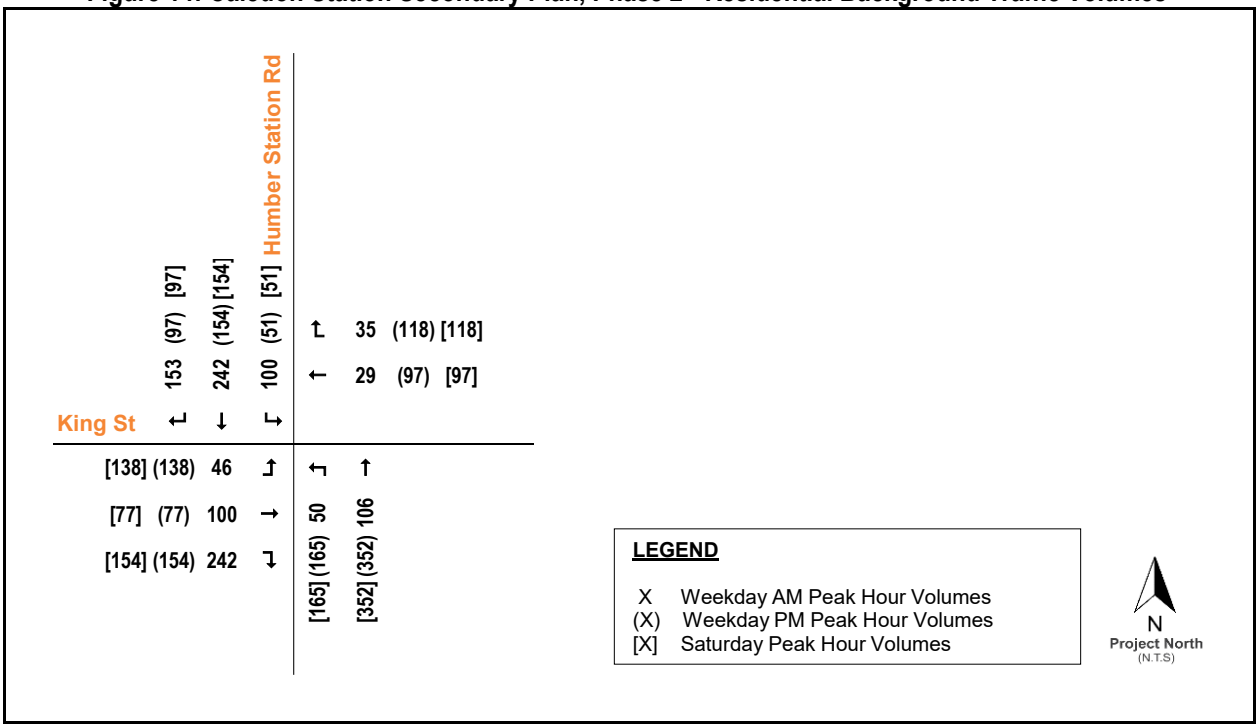


Figure 15: Caledon Station Secondary Plan, Phase 2 - School Background Traffic Volumes

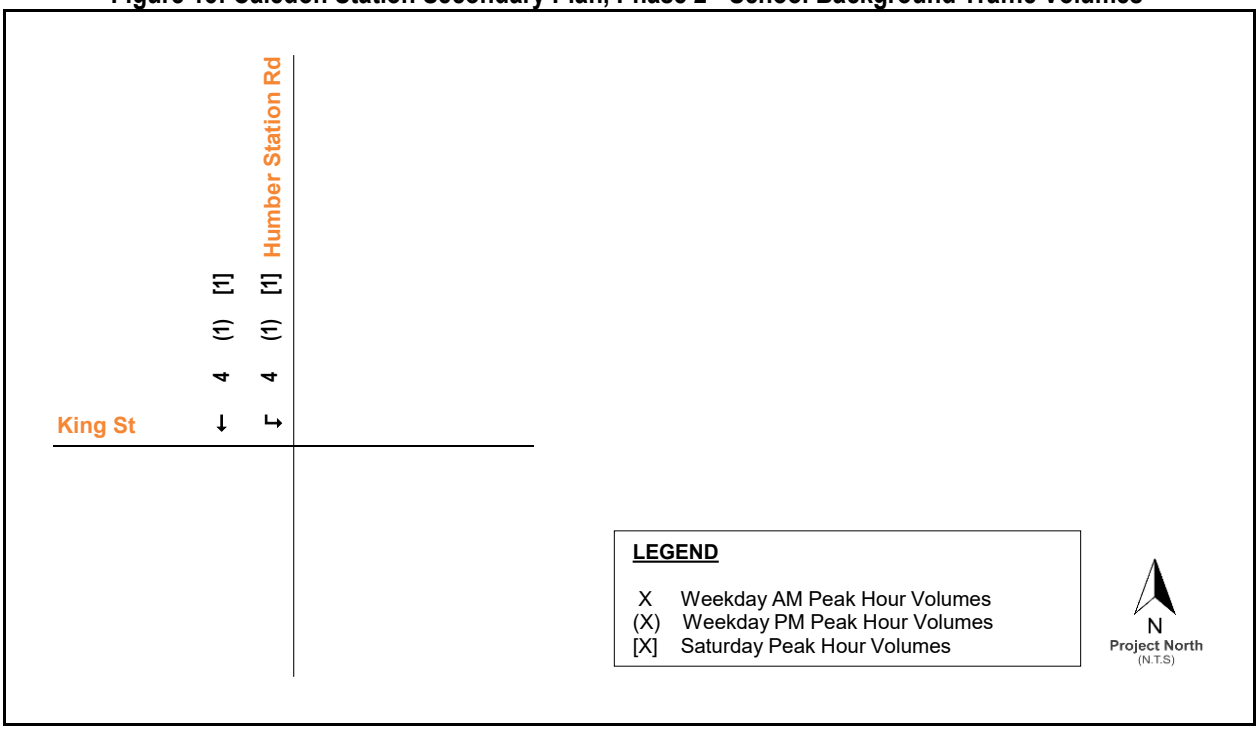


Figure 16: '0' Humber Station Road Background Traffic Volumes

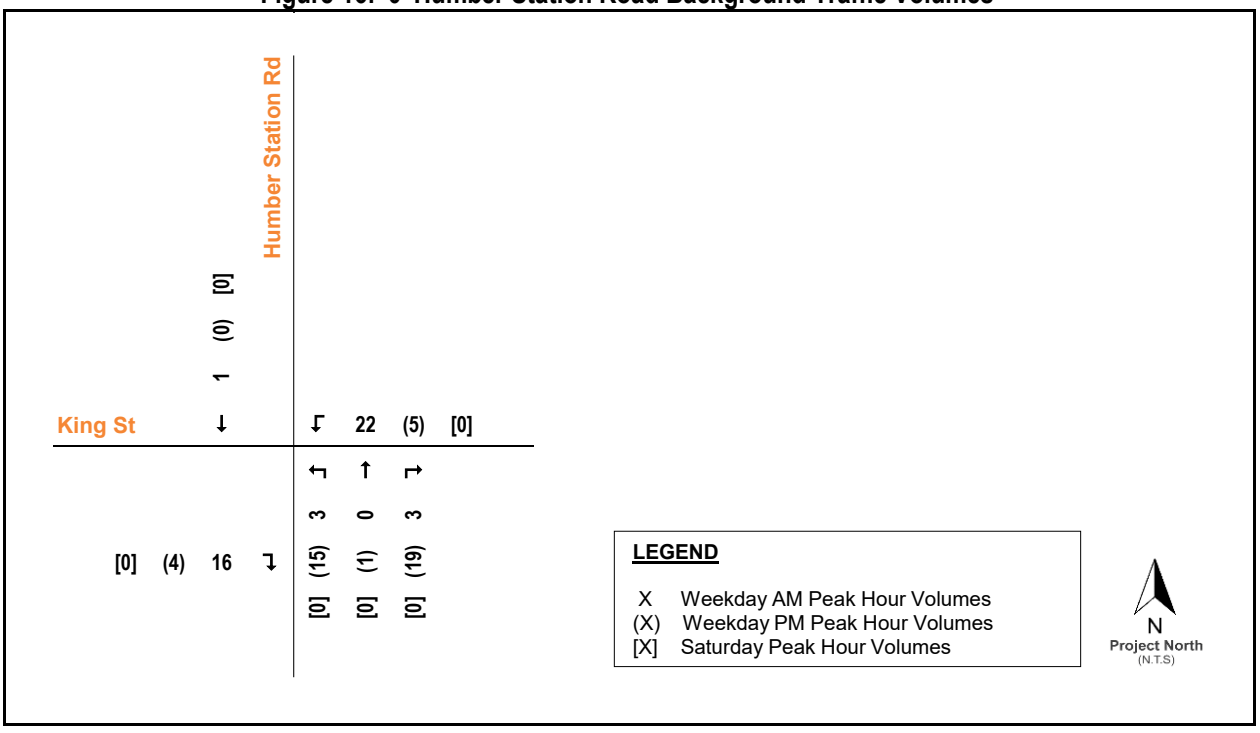
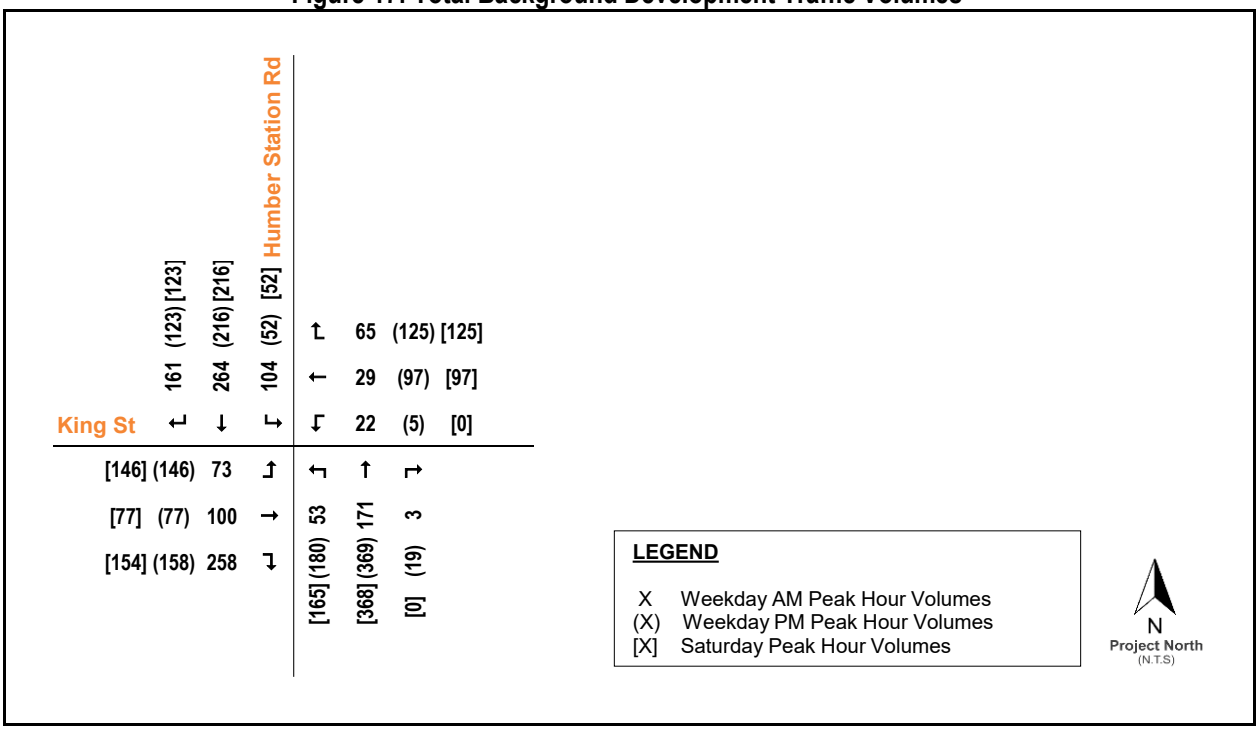


Figure 17: Total Background Development Traffic Volumes



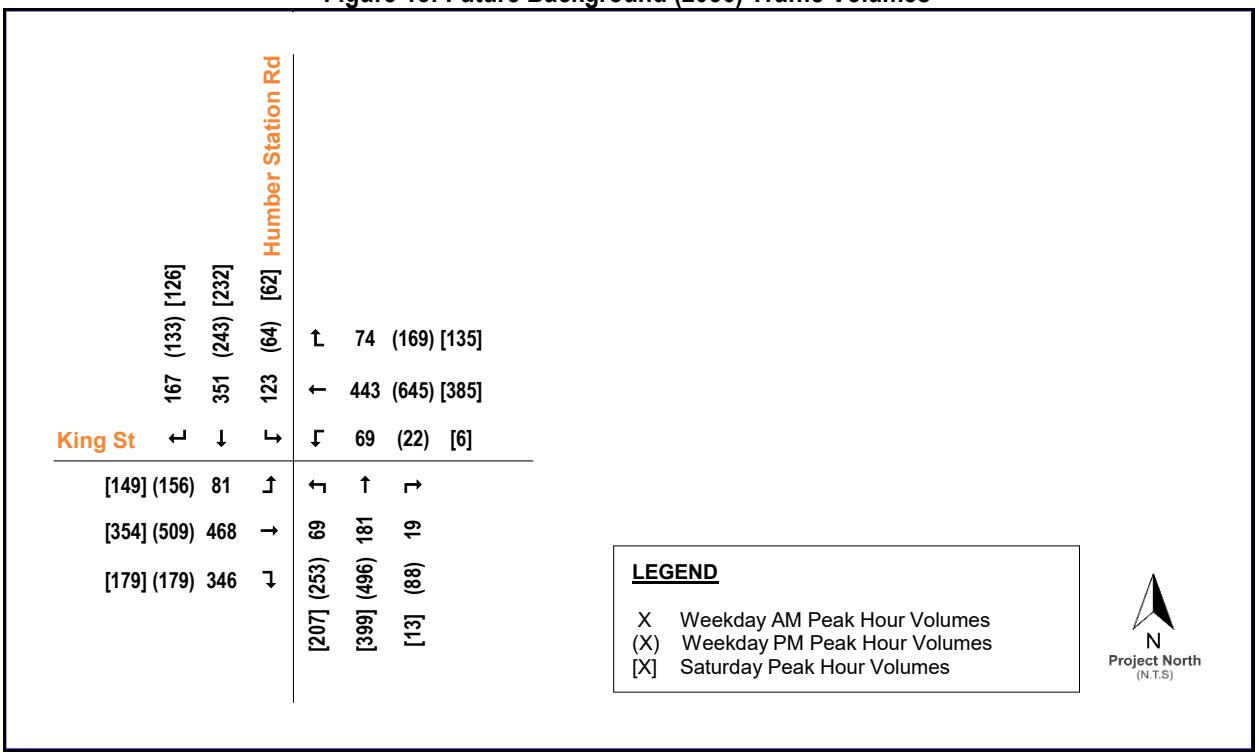
3.7. 2036 FUTURE BACKGROUND INTERSECTION CAPACITY ANALYSIS

Figure 18 exhibits the 2036 future background traffic volumes. The 2036 future background capacity analysis results for the study area intersections are summarized in **Table 5**. Detailed Synchro and SimTraffic results are enclosed in **Appendix D**.

Table 5: 2036 Future Background Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour					Approx. Storage Length (m)
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		
					50th	95th				50th	95th				50th	95th	
Signalized																	
Humber Station Rd / King St	Overall	-	28	C	-	-	-	46	D	-	-	-	38	D	-	-	-
	EBL	0.22	15	B	22	56	0.76	38	D	38	66	0.40	18	B	25	49	50
	EBT	0.60	24	C	157	303	0.62	27	C	87	155	0.39	19	B	48	95	-
	EBR	0.53	23	C	29	41	0.26	20	C	21	42	0.25	17	B	19	38	25
	WBL	0.23	16	B	17	45	0.10	22	C	9	33	0.01	18	B	1	4	50
	WBT	0.56	23	C	61	97	0.88	63	E	84	90	0.47	40	D	64	97	-
	WBR	0.10	16	B	12	32	0.33	38	D	18	40	0.19	32	C	18	39	25
	NBL	0.44	31	C	19	40	0.75	41	D	52	68	0.70	40	D	44	70	50
	NBT	0.45	35	C	25	51	0.95	67	E	141	147	0.83	51	D	87	147	-
	NBR	0.10	31	C	6	21	0.19	32	C	14	36	0.04	33	C	3	17	25
	SBL	0.42	29	C	33	63	0.45	38	D	18	44	0.35	39	D	17	44	50
	SBT	0.84	45	D	63	107	0.60	44	D	49	85	0.65	47	D	46	78	-
	SBR	0.63	37	D	23	50	0.41	40	D	19	38	0.88	76	E	26	54	-

Figure 18: Future Background (2036) Traffic Volumes



The intersection of Humber Station Road and King Street is expected to operate at generally acceptable conditions across all peak hours for the future background condition, with overall performance ranging from good to moderate levels of service. In the weekday AM peak hour, movements are expected to operate within capacity and delay, but the eastbound through movement will experience a 95th queue of 303m due to one through lane. The weekday PM peak hour condition is expected to be constrained, with the northbound through lane expected to experience a v/c ratio of 0.95. The Saturday peak hour shows a similar but slightly improved pattern, but with a higher v/c for the southbound right movement.

4.0 SITE TRAFFIC

4.1. SITE TRIP GENERATION

The trip generation for proposed development was derived from the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition based on the following land use codes (LUCs) for the weekday AM and PM peak hour of adjacent street:

- LUC 222 Multifamily Housing (High-Rise) for the residential units of the mixed-use towers in Phase 1 and Phase 2.
- LUC 822 Strip Retail Plaza (<40k) for the ground floor retail of the mixed-use towers in Phase 1 and Phase 2.
- LUC 821 Shopping Plaza (40-150k) No Supermarket for the retail plaza in Phase 3 and Phase 4.

Within the Secondary Plan Transportation Study, a 15% reduction was applied to residential trips to account for a projected mode shift to transit (local transit, walking to the GO Station) and car share. On this basis and for the purpose of this Study, a 15% reduction was assumed for all site trips given the proximity of the subject site to the GO Station.

Average pass-by rate data from LUC 821 (0% weekday AM peak period, 40% weekday PM peak period, 31% Saturday peak period) of the 2025 Pass-By Tables for ITE Trip Generation Appendices was applied to retail plaza site trips in Phase 3 and Phase 4.

A summary of the vehicle site trip generation is shown in **Table 6**.

Table 6: Site Trip Generation

Land Use	Magnitude	Parameter	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
ITE LUC 222 Residential	660 units	Trip Rate	0.09	0.18	0.27	0.18	0.14	0.32	0.21	0.15	0.36
		ITE Trips	61	117	178	118	93	211	136	102	238
		Non-Auto (15%)	9	18	27	18	14	32	20	15	35
		Primary Trips	52	99	151	100	79	179	116	87	203
ITE LUC 822 Retail	9,283.66 sqft	Trip Rate	1.72	1.18	2.91	3.99	3.99	7.97	3.34	3.23	6.57
		ITE Trips	16	11	27	37	37	74	31	30	61
		Non-Auto (15%)	2	2	4	6	6	12	5	5	10
		Primary Trips	14	9	23	31	31	62	26	25	51
ITE LUC 821 Retail	51,486.37 sqft	Trip Rate	1.07	0.66	1.73	2.54	2.64	5.19	3.22	2.99	6.22
		ITE Trips	55	34	89	131	136	267	166	154	320
		Non-Auto (15%)	8	5	13	20	20	40	25	23	48
		Pass-By (0% AM, 40% PM, 31% Sat)	0	0	0	45	46	91	44	40	84
		Primary Trips	47	29	76	66	70	136	97	91	188
Total Gross Trips			**132**	**162**	**294**	**286**	**266**	**552**	**333**	**286**	**619**
Total Non-Auto Reduction			**19**	**25**	**44**	**44**	**40**	**84**	**50**	**43**	**93**
Total Pass-By Trips			**0**	**0**	**0**	**45**	**46**	**91**	**44**	**40**	**84**
Total Primary Trips			**113**	**137**	**250**	**197**	**180**	**377**	**239**	**203**	**442**

The proposed development is expected to generate the following site trips upon full build-out.

- 250 two-way primary auto trips (113 in, 137 out) in the weekday AM peak hour, 377 two-way primary auto trips (197 in, 180 out) in the weekday PM peak hour, and 442 two-way primary auto trips (239 in, 203 out) in the Saturday peak hour.

- 0 two-way retail pass-by trips in the weekday AM peak hour, 91 two-way retail pass-by trips (45 in, 46 out) in the weekday PM peak hour, and 84 two-way retail pass-by trips (44 in, 40 out) in the Saturday peak hour.
- 44 two-way non-auto trips (19 in, 25 out) in the weekday AM peak hour, 84 two-way auto trips (44 in, 40 out) in the weekday PM peak hour, and 93 two-way auto trips (50 in, 43 out) in the Saturday peak hour.

4.2. TRIP DISTRIBUTION AND ASSIGNMENT

The residential vehicle site trip distribution was derived from 2022 Transportation Tomorrow Survey (TTS) data and filtered for home-based trips during the weekday AM and PM peak hours for traffic zones 3153, 3192, 3193, and 3194. The trip distribution data for the weekday PM peak hour was assumed for the Saturday peak hour given that weekend data is not available from TTS. Given the negligible trip distribution to the north of the subject site, a nominal 5% for trips to and from the north were applied to trip distribution.

The retail vehicle site trip distribution was derived from the existing trip patterns from the TMC data within the intersection study area, in order to derive the trip distribution for the weekday AM, weekday PM, and Saturday peak hours.

The site-generated vehicular traffic volumes were assigned accordingly based on the directional trip distribution to reflect the configuration of the site accesses, turning restrictions, logical routing, and engineering judgement. The gateways assumed for the study area include Humber Station Road and King Street. As noted within this Study, the interconnection of Street A to the north and south of the subject site was assumed as not constructed within the ultimate study horizon given the uncertainty of development of the neighbouring adjacent properties.

The residential trip distribution is summarized in **Table 7**. The retail trip distribution is summarized in **Table 8**.

Figure 19, Figure 20, Figure 21, Figure 22 exhibit the residential (primary) site traffic volumes, retail pass-by site traffic volumes, retail (primary) site traffic volumes, and the net total site traffic volumes, respectively.

Table 7: Residential Directional Trip Distribution

Corridor	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		In	Out	In	Out	In	Out
Humber Station Road	Northbound	5%	6%	5%	15%	5%	15%
	Southbound	15%	5%	6%	5%	6%	5%
King Street	Eastbound	12%	78%	11%	68%	11%	68%
	Westbound	68%	11%	78%	12%	78%	12%
Total		100%	100%	100%	100%	100%	100%

Table 8: Retail Directional Trip Distribution

Corridor	Direction	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		In	Out	In	Out	In	Out
Humber Station Road	Northbound	4%	3%	20%	13%	13%	6%
	Southbound	10%	21%	4%	5%	4%	7%
King Street	Eastbound	43%	37%	33%	37%	42%	41%
	Westbound	43%	39%	43%	45%	42%	46%
Total		100%	100%	100%	100%	100%	100%

Figure 19: Residential (Primary) Site Traffic Volumes

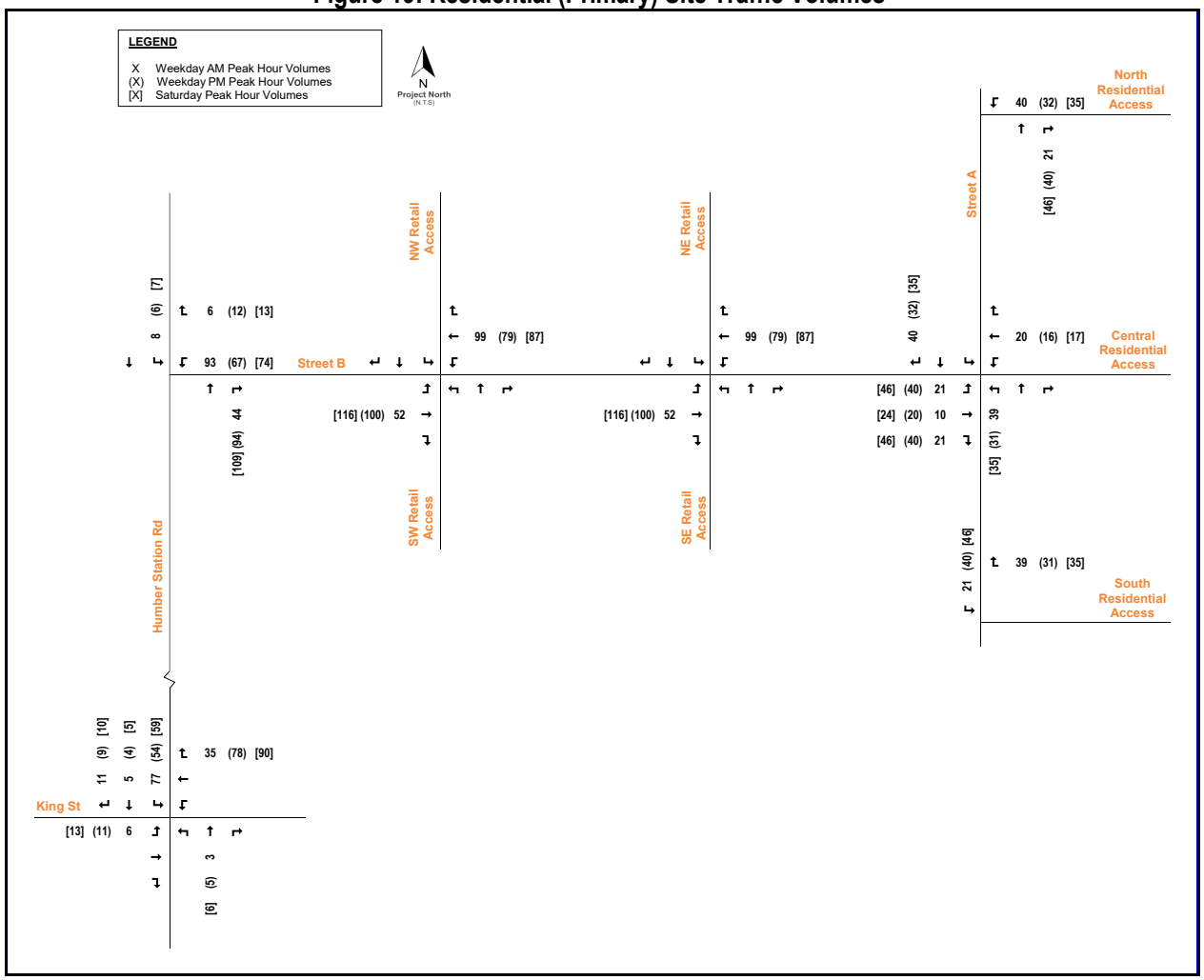


Figure 20: Retail Pass-By Site Traffic Volumes

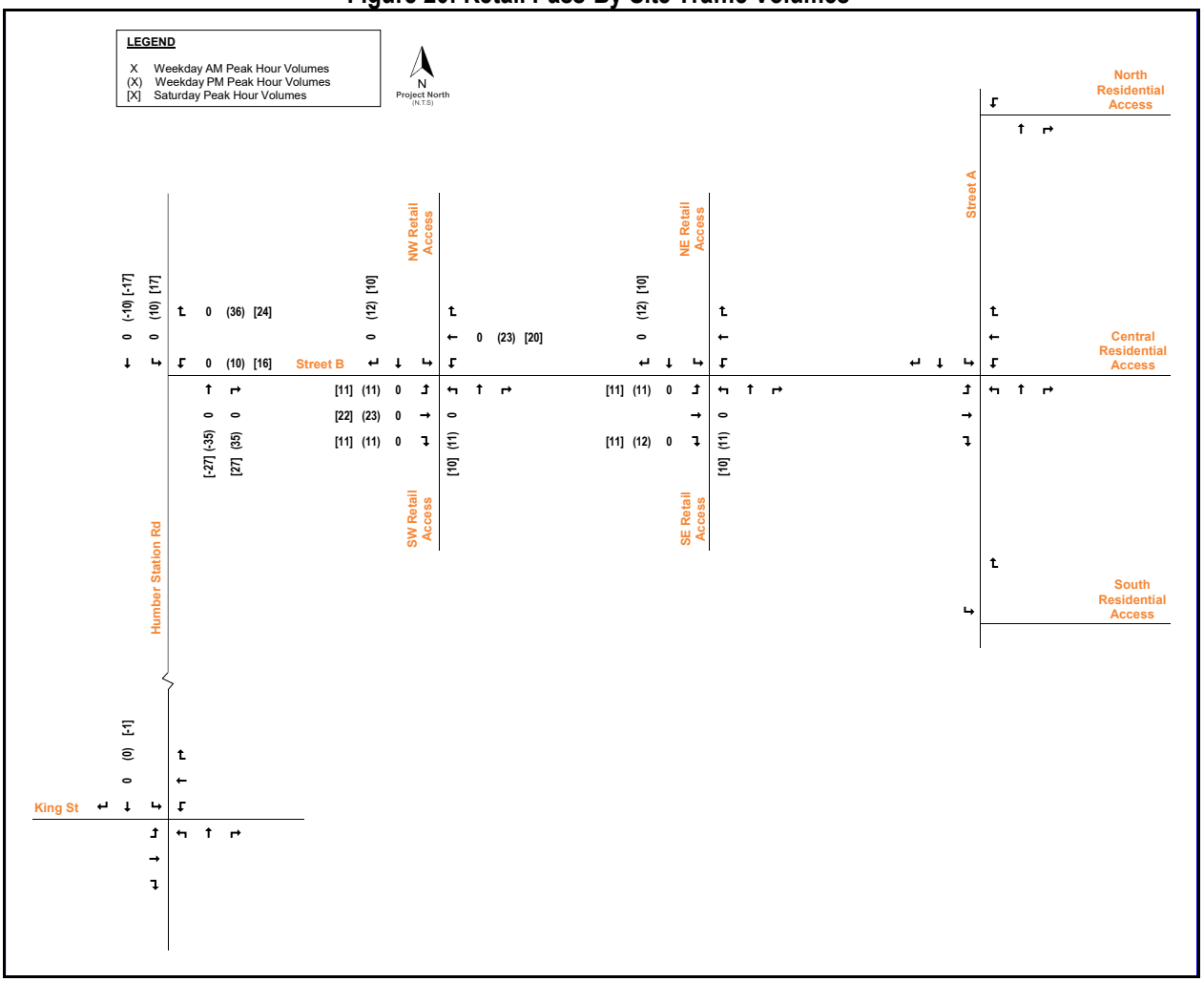


Figure 21: Retail (Primary) Site Traffic Volumes

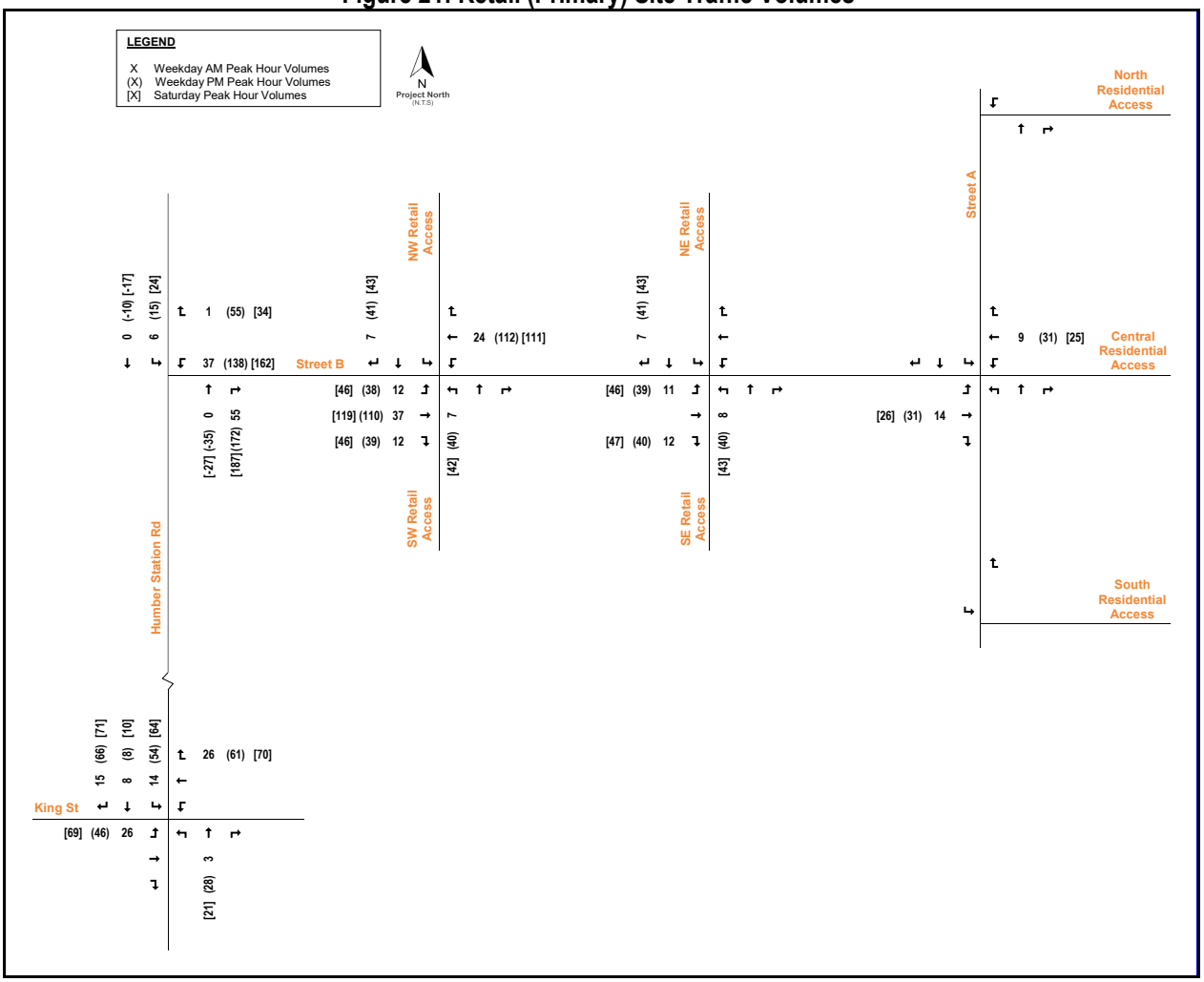
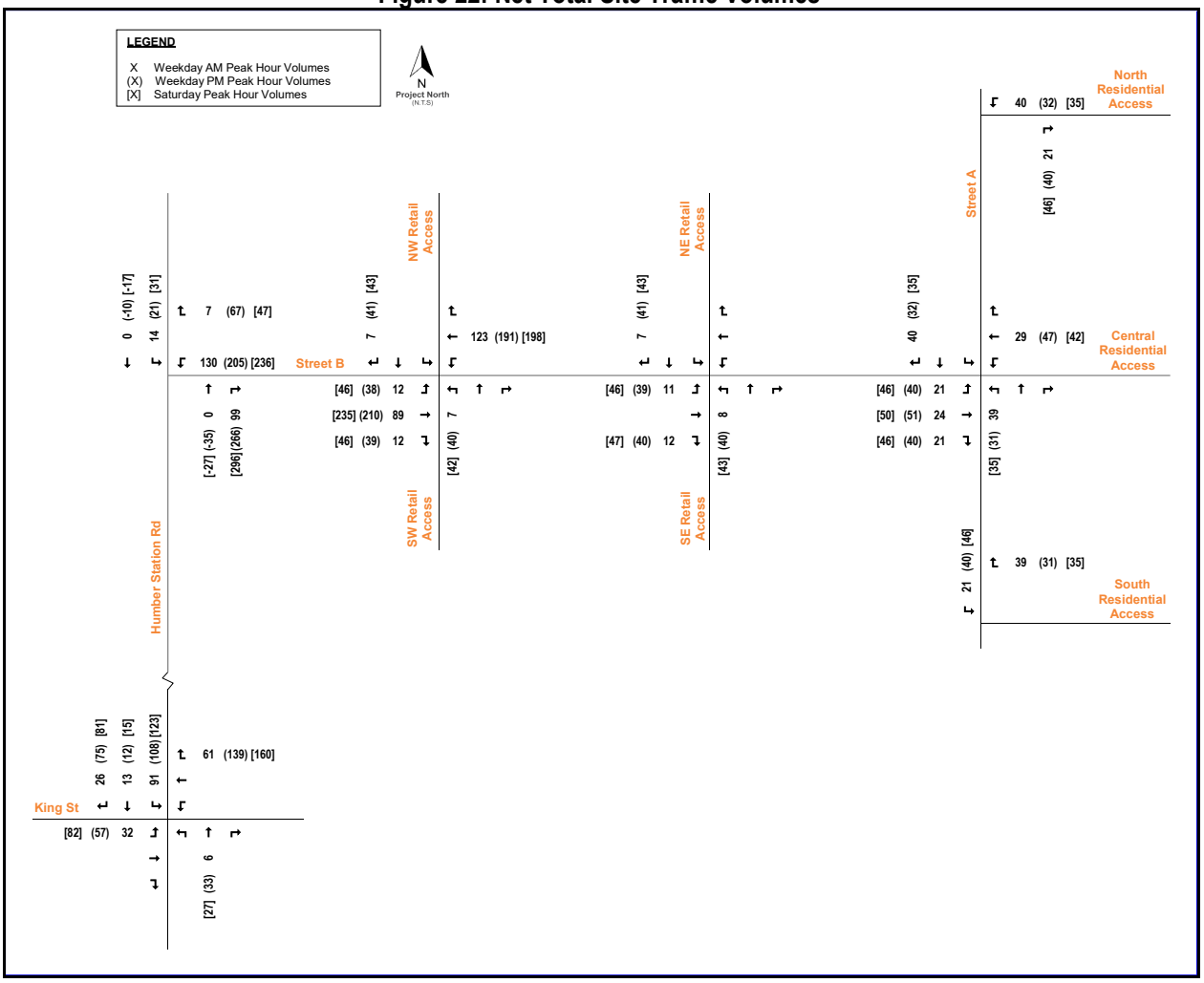


Figure 22: Net Total Site Traffic Volumes



5.0 FUTURE TOTAL TRAFFIC CONDITIONS

5.1. FUTURE TOTAL (2036) INTERSECTION CAPACITY ANALYSIS RESULTS

Figure 23 exhibits the 2036 future total traffic volumes. The results of the 2036 intersection capacity analysis are summarized in **Table 9**. Detailed Synchro and SimTraffic capacity and queue results are available in **Appendix D**.

Figure 23: Future Total (2036) Traffic Volumes

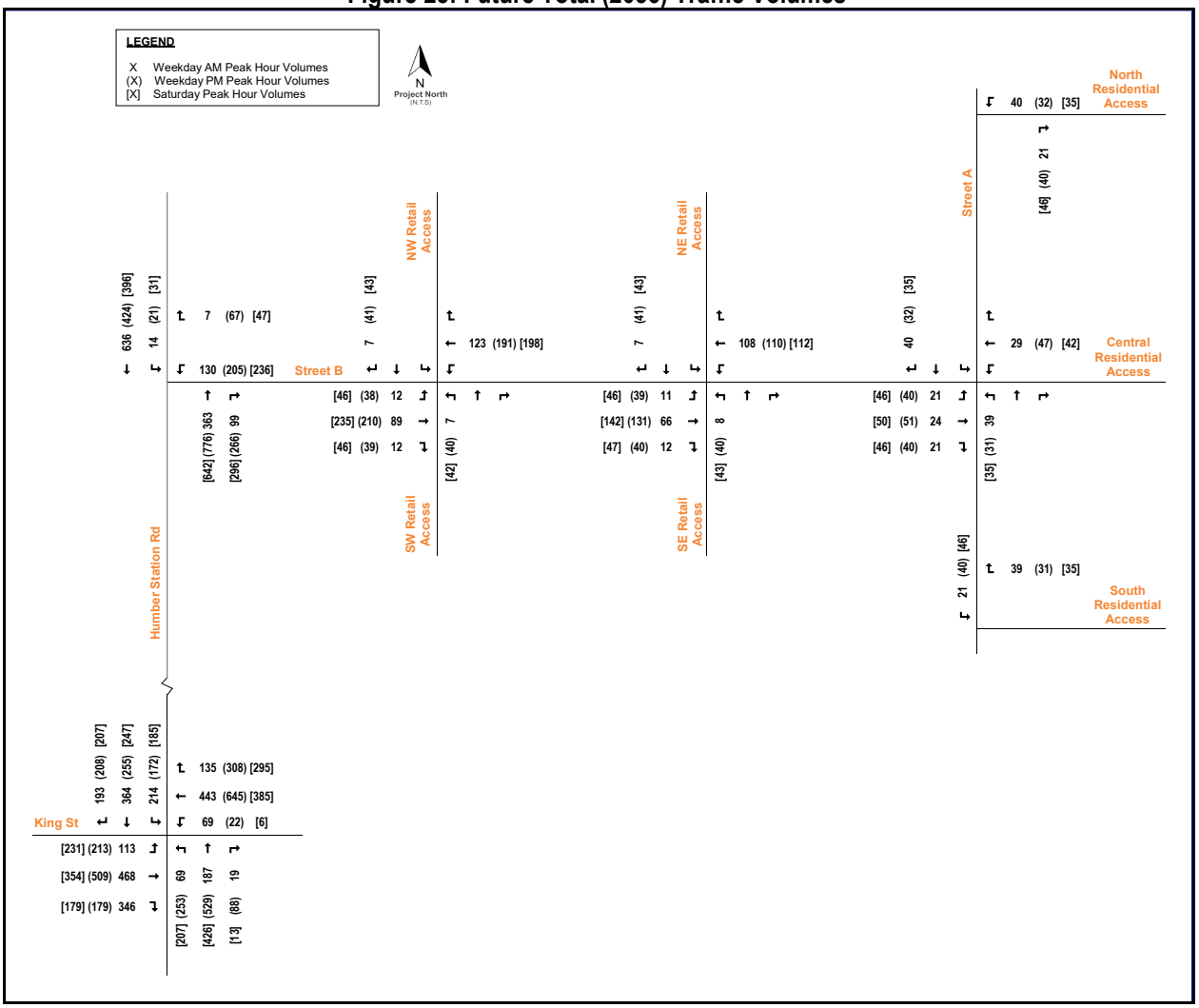


Table 9: Future Total (2036) Intersection Capacity Analysis Results

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour					Approx. Storage Length (m)
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		
					50th	95th				50th	95th				50th	95th	
Signalized																	
Humber Station Rd /	Overall	-	30	C	-	-	-	60	E	-	-	-	47	D	-	-	-
	EBL	0.31	17	B	30	65	1.00	95	F	50	70	0.68	28	C	37	63	50

King St	EBT	0.61	25	C	207	371	0.65	30	C	188	349	0.44	24	C	61	127	-
	EBR	0.54	23	C	29	42	0.27	22	C	19	41	0.28	21	C	20	40	25
	WBL	0.23	17	B	21	54	0.11	24	C	8	33	0.02	23	C	2	14	50
	WBT	0.58	24	C	66	101	0.99	84	F	85	92	0.58	47	D	74	98	-
	WBR	0.20	18	B	18	39	0.66	52	D	23	43	0.51	45	D	27	42	25
	NBL	0.44	31	C	22	45	0.73	37	D	52	69	0.63	32	C	48	70	50
	NBT	0.45	34	C	29	55	0.99	77	E	141	146	0.79	46	D	115	170	-
	NBR	0.10	31	C	5	21	0.19	31	C	12	34	0.03	30	C	5	22	25
	SBL	0.73	42	D	50	71	1.06	128	F	47	68	0.79	55	E	35	59	50
	SBT	0.84	45	D	89	164	0.57	41	D	86	210	0.55	41	D	46	84	-
	SBR	0.70	39	D	24	49	0.56	41	D	35	120	1.13	148	F	38	71	-
Unsignalized																	
Humber Station Rd / Street B	NBT	-	-	-	-	1	-	-	-	-	4	-	-	-	-	5	-
	NBR	-	-	-	-		-	-	-	-		-	-	-	-		-
	WBLR	0.50	28	D	-	24	1.40	253	F	-	40	1.28	199	F	-	41	-
	SBL	0.01	8	A	-	12	0.03	11	B	-	19	0.04	10	B	-	20	-
	SBT	-	0	A	-		-	0	A	-		-	0	A	-		-
NW Retail Driveway / SW Retail Driveway / Street B	NBLTR	0.01	10	B	-	8	0.10	14	B	-	18	0.12	16	C	-	32	-
	EBL	0.01	7	A	-	3	0.03	8	A	-	11	0.04	8	A	-	8	-
	EBT	-	0	A	-		-	0	A	-		-	0	A	-		-
	EBR	-	-	-	-		-	-	-	-		-	-	-	-		-
	WBL	--	0	A	-	2	-	0	A	-	21	-	0	A	-	27	-
	WBT	-	-	-	-		-	-	-	-		-	-	-	-		-
	WBR	-	-	-	-		-	-	-	-		-	-	-	-		-
	SBLTR	0.01	9	A	-	8	0.05	9	A	-	26	0.06	9	A	-	30	-
NE Retail Driveway / SE Retail Driveway / Street B	NBLTR	0.01	10	B	-	8	0.08	12	B	-	14	0.09	13	B	-	15	-
	EBL	0.01	7	A	-	3	0.03	7	A	-	5	0.03	7	A	-	6	-
	EBT	-	0	A	-		-	0	A	-					-		-
	EBR	-	-	-	-		-	-	-	-					-		-
	WBL	--	0	A	-	-	-	0	A	-	5	-	0	A	-	10	-
	WBT	-	-	-	-		-	-	-	-					-		-
	WBR	-	-	-	-		-	-	-	-					-		-
	SBLTR	0.01	9	A	-	7	0.05	9	A	-	14	0.05	9	A	-	15	-
Street A / N Residential Driveway	NBT	-	-	-	-	-	-	-	-	-	-				-	-	-
	NBR	-	-	-	-		-	-	-	-					-		-
	WBLR	0.04	9	A	-	14	0.03	9	A	-	13	0.04	9	A	-	13	-
	SBL	-	0	A	-	-	-	0	A	-	-	-	0	A	-	-	-
	SBT	-	-	-	-		-	-	-	-		-	-	-	-		-
Street A / Street B / W Residential Driveway	NBLTR	0.05	8	A	-	13	0.04	8	A	-	13	0.05	8	A	-	13	-
	EBLTR	0.08	7	A	-	13	0.14	8	A	-	13	0.16	8	A	-	14	-
	WBLTR	0.04	7	A	-	13	0.04	7	A	-	14	0.04	7	A	-	13	-
	SBLTR	0.04	7	A	-	13	0.04	7	A	-	13	0.04	7	A	-	13	-
Street A / S Residential	NBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	NBR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Driveway	WBLR	-	-	-	-	13	-	-	-	-	13	-	-	-	-	13	-
	SBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SBT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Under future total condition, the intersection of Humber Station Road / King Street is projected to operate at overall acceptable conditions during the weekday AM peak hour (LOS C). During the weekday PM and Saturday peak hours a number of movements are expected to be over capacity and congested. The weekday PM peak hour represents the most critical condition, with several movements operating at or over capacity, resulting in increased delays and queuing.

The unsignalized intersections within the study area generally operate well with low delays and good levels of service. However, the Humber Station Road / Street B intersection is projected to experience significant capacity constraints on the westbound approach during the weekday PM and Saturday peak hours, with high delays indicating poor operating conditions. This is attributed to the high volume of westbound approaching vehicles waiting for gap opportunities along Humber Station Road.

5.2. MITIGATION MEASURES

Mitigative measures were explored to improve capacity and levels of service for intersection movements that are expected to operate above capacity or have poor levels of service. The mitigation measures were undertaken for the ultimate condition (2035 future total condition). The following mitigation measures were provided.

5.2.1. SIGNALIZATION OF STREET 'B' / HUMBER STATION ROAD

A traffic signal volume warrant analysis was undertaken to determine if a traffic control signal is warranted at the intersection of Street B / Humber Station Road. The traffic signal warrant was assessed based on Justification 7 of Ontario Traffic Manual (OTM) Book 12 (OTM Book 12, Section 4.10) to determine if a traffic signal control is justified under the future total condition. Traffic signalization is technically not warranted from the signal warrant analysis based on the future traffic volumes as enclosed in **Appendix E**.

Notwithstanding the foregoing, traffic signalization is recommended for the intersection of Street B / Humber Station Road to provide safe turning movements. Traffic signals will provide phasing for safe minor street intersection movements to and from Street B at Humber Station Road. A typical 60-second cycle length was provided with permissive shared turning movements for the AM and PM peak hours given the Secondary Plan Transportation lane configuration of Humber Station Road and the Street B entrance based on the architectural site plan.

5.2.2. INTERSECTION IMPROVEMENTS OF KING STREET / HUMBER STATION ROAD

Given that Humber Station Road was assumed to be a typical 4-lane cross section (2 through lanes per direction) north of King Street and a typical 2-lane cross section (1 through lane per direction), the northbound right turn lane was revised to a shared northbound through-right lane to increase northbound through capacity, given that 2 northbound receiving lanes would be available north of King Street.

Split timings of the intersection signal timing plans from Phase 2 of the Secondary Plan Transportation Study were optimized for the intersection of King Street / Humber Station Road. It is noted that the cycle length remained unchanged for each intersection and only the split timings were changed to improve capacity and levels of service.

5.2.3. 2035 FUTURE TOTAL INTERSECTION CAPACITY ANALYSIS – MITIGATION MEASURES

Table 10 summarizes the intersection traffic operations with the foregoing mitigative measures for the intersections of Humber Station Road / King Street and Humber Station Road / Street B. Detailed Synchro and SimTraffic reports are enclosed in **Appendix D**.

Table 10: Future Total (2036) Intersection Capacity Analysis Results (Mitigative Measures)

Intersection	Movement of Interest	Weekday AM Peak Hour					Weekday PM Peak Hour					Saturday Peak Hour					Approx. Storage Length (m)
		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		V/C	Delay (s)	LOS	Queue (m)		
					50th	95th				50th	95th				50th	95th	
Signalized																	
Humber Station Rd / King St	Overall	-	30	C	-	-	-	51	D	-	-	-	39	D	-	-	-
	EBL	0.31	16	B	29	63	0.94	71	E	51	69	0.69	29	C	37	62	50
	EBT	0.61	24	C	154	302	0.57	23	C	181	354	0.46	26	B	56	114	-
	EBR	0.53	23	C	30	42	0.24	17	B	19	40	0.30	23	B	19	39	25
	WBL	0.23	16	B	18	48	0.09	18	B	7	28	0.02	26	B	3	21	50
	WBT	0.57	24	C	66	100	0.80	53	D	85	92	0.63	51	D	74	97	-
	WBR	0.20	18	B	18	39	0.53	42	D	24	43	0.56	59	D	27	42	25
	NBL	0.45	36	D	20	38	0.89	67	E	53	67	0.63	35	D	46	70	50
	NBT	0.39	40	D	26	55	0.89	69	E	141	146	0.44	36	D	98	157	-
	NBR	0.40	40	D			0.90	70	E			0.44	36	D			25
	SBL	0.60	31	C	47	68	0.74	48	E	43	68	0.48	28	D	33	60	50
	SBT	0.86	49	D	80	149	0.77	56	F	62	113	0.45	34	E	45	78	-
	SBR	0.72	41	D	27	56	0.76	57	F	29	52	0.93	76	E	37	71	-
Humber Station Rd / Street B	Overall	-	7	A	-	-	-	12	B	-	-	-	11	B	-	-	-
	WBL	0.75	31	C	20	33	0.82	31	C	28	40	0.81	28	C	30	40	-
	WBR	0.00	0	A			0.00	0	A			0.00	0	A			-
	NBT	0.21	4	A	13	28	0.55	9	A	27	44	0.46	8	A	36	61	-
	NBR	0.21	4	A			0.55	9	A			0.46	8	A			-
	SBL	0.30	4	A	18	35	0.23	6	A	20	40	0.23	6	A	22	42	-
	SBT	0.32	4	A			0.24	6	A			0.24	6	A			-

With the implementation of mitigation measures, overall intersection operations will improve notably compared to the future total baseline conditions.

At Humber Station Road / King Street, optimization of signal timings and the revised northbound lane configuration are expected to result in improved overall performance, particularly during the critical weekday PM and Saturday peak hours, where overcapacity is mitigated and levels of service improve. It is noted however that the lane configuration is subject to change where the timeline for town and regional road widenings and improvements may vary from this Study, such as Humber Station Road having a 4-lane cross-section south of King Street, which would improve operations.

The signalization of Humber Station Road and Street B will result in substantial operational improvements. The intersection is projected to operate within capacity and at good levels of service across all peak hours, with low delays. The previous overcapacity of the westbound approach will be effectively mitigated under signal control.

Overall, the proposed mitigation measures are effective in improving intersection performance under future conditions for all studied peak hours.

6.0 SITE PLAN REVIEW

6.1. VEHICULAR SITE CIRCULATION

Vehicular circulation of the subject site was reviewed using AutoTURN to assess the vehicular functionality of the proposed site access driveways, drive aisles, parking spaces, and loading spaces. The vehicle movement diagrams are enclosed in **Appendix F**.

Vehicle profiles that were assessed include an NCHRP Report 659 Aerial Fire Truck, MSU TAC-2017 medium single-unit truck, Peel Region front-end waste collection truck, and P TAC-2017 large passenger car. The swept path analysis demonstrated that the foregoing tested vehicles were able to access the subject site without functional conflicts.

The Street 'B' access at Humber Station Road is recommended to consist of a minimum curb radii of 9.0m to accommodate the turning swept paths of the design vehicles.

6.2. LOADING SPACE REVIEW

Per Zoning By-law 2006-050, loading spaces are not required for the subject development.

Notwithstanding, the loading space schedule is proposed as follows.

- Phase 1: 2 loading spaces
- Phase 2: 2 loading spaces
- Phase 3: 1 loading space
- Phase 4: 1 loading space.

6.3. WASTE COLLECTION

Private waste collection will be provided for retail waste from the proposed development. Municipal front-end waste collection will be provided for residential waste.

7.0 PARKING REVIEW

7.1. VEHICLE PARKING REVIEW

7.1.1. OVERVIEW OF PROPOSED PARKING PROVISION

A parking provision of 587 vehicle parking spaces and 192 bicycle parking spaces will be provided within the subject site, as summarized in the following.

Phase 1 (Mixed-Use Tower)

- 239 total vehicle parking spaces, including 10 barrier-free spaces.
  - 220 residential spaces.
  - 14 residential visitor spaces.
  - 5 retail spaces.
- Majority of vehicle parking is provided through underground parking levels, with surface parking for retail and visitor uses.
- 78 bicycle parking spaces.

Phase 2 (Mixed-Use Tower)

- 239 total vehicle parking spaces, including 10 barrier-free spaces.
  - 220 residential spaces.
  - 14 residential visitor spaces.
  - 5 retail spaces.S
- Majority of parking is provided through underground parking levels, with surface parking for retail and visitor uses.
- 78 bicycle parking spaces.

Phase 3 (Multi-Unit Retail Plaza)

- 49 vehicle parking spaces, including 7 barrier-free spaces, provided at surface level.
- 22 bicycle parking spaces.

Phase 4 (Multi-Unit Retail Plaza)

- 60 vehicle parking spaces, including 7 barrier-free spaces, provided at surface level.
- 14 bicycle parking spaces.

The proposed parking strategy reflects a balanced and context-sensitive approach that:

- Aligns with the policy framework of the Planning Act for PMTSAs;
- Provides parking in a manner that is responsive to land use type and demand characteristics;
- Recognizes the functional separation of development blocks while maintaining overall site integration; and
- Supports reduced automobile dependence through transit accessibility and pedestrian connectivity.

The proposed parking supply is therefore considered appropriate and sufficient to accommodate the anticipated needs of the development without resulting in operational impacts, as further justified in detail below.

7.1.2. POLICY CONTEXT

The subject site is located within a Protected Major Transit Station Area (PMTSA) as defined under the Planning Act. In accordance with recent amendments to the Act, municipalities are prohibited from imposing minimum parking requirements within PMTSAs. Accordingly, no minimum parking supply is required for the proposed development.

Notwithstanding this policy framework, the proposed parking supply has been established based on a comprehensive assessment of site context, land use characteristics, anticipated travel demand, and transit accessibility. This approach ensures that sufficient parking is provided to support the development while aligning with broader transit-oriented development objectives.

7.1.3. DEVELOPMENT CONTEXT

Each development phase is intended to be functionally self-sufficient from a parking perspective.

Parking for the towers (Phase 1 and Phase 2) is provided within an underground parking structure, intended to accommodate residents, with localized surface parking for residential visitor and ground floor retail uses. The proposed residential, visitor, and retail parking rates reflects the site's location within a PMTSA, where reduced reliance on cars is anticipated due to proximity to higher-order transit (Caledon GO Station), local bus transit, and supporting active transportation infrastructure.

The retail parking supply has been established with consideration of prevailing suburban retail parking practices, while recognizing the site's proximity to transit and the presence of adjacent residential uses. Although minimum parking requirements are not applicable within PMTSAs, the retail parking supply reflects a balanced approach that provides parking availability, convenient access, high visibility, and efficient circulation, supporting the operational needs of retail tenants and patrons.

Overall, the proposed residential parking supply is considered appropriate to meet anticipated demand while supporting reduced auto dependency consistent with Provincial policy direction.

7.1.4. PEDESTRIAN CONNECTIVITY AND MULTI-MODAL CONSIDERATIONS

The proposed internal road network will include pedestrian infrastructure to support safe and convenient movement between development blocks, encouraging walking and reducing short vehicular trips. While some short vehicular trips between development phases may occur, the proximity of land uses and planned pedestrian connections are expected to encourage walking for the majority of internal trips.

The subject site's location within a PMTSA further supports multimodal travel behavior, including transit usage, walking, and cycling, which contributes to a reduced reliance on private automobiles. The subject site is located within short walking distance to the future Caledon GO Station which will provide access to Kitchener GO rail service and accompanying bus services given the station's intended use as a transit hub for the Town. Local bus routes as planned within the Secondary Plan Transportation Study as noted in Section 3.3 are expected to service the subject site.

7.1.5. TRANSPORTATION DEMAND MANAGEMENT

A range of Transportation Demand Management (TDM) measures will be incorporated into the proposed development to reduce reliance on single-occupant vehicle travel and support a lower parking demand, consistent with the site's location within a Protected Major Transit Station Area (PMTSA) under the Planning Act.

The proposed TDM strategy focuses on improving access to alternative modes of transportation and enhancing the overall convenience of non-auto travel for residents, employees, and visitors.

7.2. BARRIER-FREE PARKING

The proposed barrier-free parking space provision was reviewed against Ontario Regulation 191/11 (AODA) for minimum barrier-free parking space requirements as per O.Reg. 191/11 Section 80.36 as summarized in **Table 11**.

Table 11: Summary of Barrier-Free Parking Space Review

Phase	Parking Space Provision	O.Reg 191/11 (AODA)		Barrier-Free Spaces Provided	Variance
		Barrier-Free Spaces Requirement	Barrier-Free Spaces Required		
1	239	201-1000 sp: 2 sp + 2%	7	10	+3
2	239	201-1000 sp: 2 sp + 2%	7	10	+3
3	49	13-100 sp: 4%	2	7	+5
4	60	13-100 sp: 4%	3	7	+4

The subject development will provide sufficient barrier-free parking spaces to meet the minimum requirement as stipulated by Ontario Regulation 191/11 (AODA) for all development phases.

7.3. BICYCLE PARKING

The Town of Caledon Comprehensive Zoning By-law 2006-050 does not stipulate bicycle parking space requirements. Notwithstanding this, a bicycle parking provision of 192 spaces will be provided for full build-out of the subject development, including 78 bicycle spaces in Phase 1, 78 spaces for Phase 2, 22 spaces for Phase 3, and 14 spaces for Phase 4. The inclusion of on-site bicycle parking will be provided to support the multi-modal transportation context of the subject development with consideration of the PTMSA and the adjacent Secondary Plan.

8.0 TRANSPORTATION DEMAND MANAGEMENT (TDM)

Transportation demand management (TDM) refers to variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system.

Potential TDM measures may include but are not limited to: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, carpooling, and ride sharing.

Key measures include:

- **Transit Accessibility:** The development benefits from proximity to higher-order transit services, encouraging transit use for both commuting and discretionary trips.
- **Active Transportation Infrastructure:** The site will include pedestrian-supportive design features such as sidewalks, internal walkways, and connections between development blocks, promoting walking as a viable mode for short trips, including travel between residential and on-site retail uses.
- **Bicycle Facilities:** Secure and convenient bicycle parking will be provided for residents and visitors to encourage cycling as an alternative to automobile use.
- **Mixed-Use Design:** The integration of residential and retail land uses within the site facilitates internal trip capture, allowing some trips to be completed without the use of a vehicle.
- **Parking Management:** The provision of structured residential parking and separate surface retail parking supports efficient utilization of spaces and discourages unnecessary vehicle ownership and use.

Collectively, these measures are expected to reduce overall vehicle trip generation and parking demand, supporting the proposed parking supply and aligning with broader transit-oriented development objectives.

Table 12 summarizes the Transportation Demand Management (TDM) Measures that are recommended for the subject site.

Table 12: TDM Measures Checklist

Category	TDM Measure	Responsibility	Estimated Cost
Transit	TDM information package (i.e. Brampton Transit maps and schedules, cycling maps, future transit routes, etc.)	Applicant	TBD
	Communications strategy and physical location to deliver Information Packages.	Applicant	$1,500
Active Transportation	Pedestrian Connections. Internal pedestrian walkways, pedestrian sidewalks along the proposed streets, and connections to the adjacent external streets.	Applicant	The associated cost is included in the conditions of approval and site plan agreement.
	Bicycle Parking for each development phase to encourage active transportation. Provide long-term and short-term bicycle parking for the residential and retail uses.	Applicant	The associated cost is included in the conditions of approval and site plan agreement.
Monitoring Program/ Report	Undertake a TDM Monitoring Initial Survey with 100% tenant (retail) and residential occupancies and report back to Town/Region staff. The Owner will coordinate with Town/Region staff for a list for survey questions.	Town of Caledon / Region of Peel to consider	Securities of $1,000 are required to undertake the Initial survey.

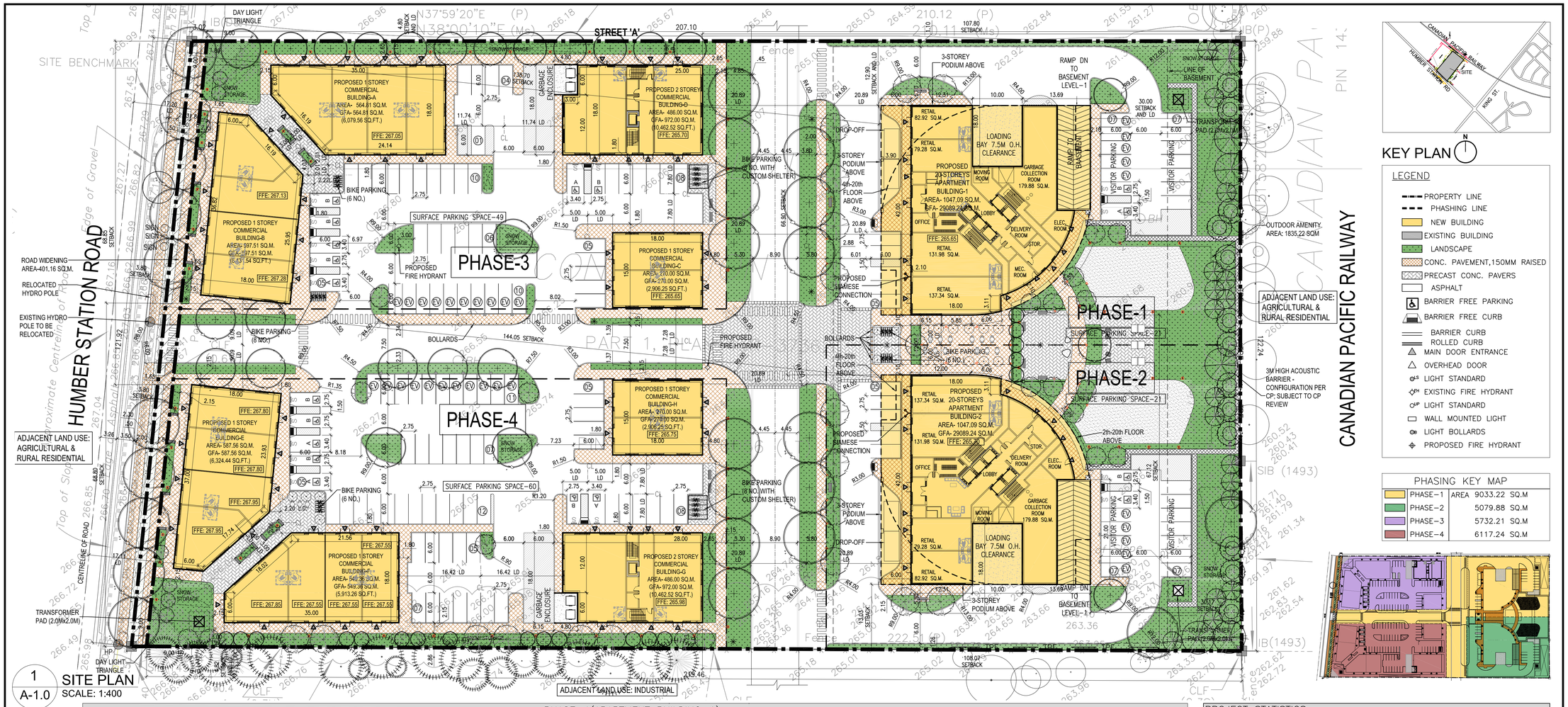
	Undertake a TDM Monitoring Follow-up Survey two years after the Initial survey and report back to Town/Region staff. The Owner will coordinate with the Region staff for survey questions.	Town of Caledon / Region of Peel to consider	Securities of $1,000 are required to undertake the Follow-up survey.

9.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of this transportation impact study are summarized as follows:

- Upon full buildout, the proposed development is expected to generate:
  - 250 two-way primary auto trips (113 in, 137 out) in the weekday AM peak hour, 377 two-way primary auto trips (197 in, 180 out) in the weekday PM peak hour, and 442 two-way primary auto trips (239 in, 203 out) in the Saturday peak hour.
  - 0 two-way retail pass-by trips in the weekday AM peak hour, 91 two-way retail pass-by trips (45 in, 46 out) in the weekday PM peak hour, and 84 two-way retail pass-by trips (44 in, 40 out) in the Saturday peak hour.
  - 44 two-way non-auto trips (19 in, 25 out) in the weekday AM peak hour, 84 two-way auto trips (44 in, 40 out) in the weekday PM peak hour, and 93 two-way auto trips (50 in, 43 out) in the Saturday peak hour.
- Under existing conditions, the studied signalized intersections operate with overall level of service D or better during the AM and PM peak hours. At the Highway 50 / Nashville Road / Countryside Road intersection, the northbound through movement operates at capacity in the PM peak hour. At the Highway 50 / Mayfield Road / Albion Vaughan Road intersection, the westbound left movement operates at capacity in the AM peak hour. The 95th percentile queue length of a number of studied left turn movements exceed their lane storage length.
- The study area intersections are projected to operate at acceptable conditions under existing and future background conditions, with increases in v/c ratio and delay observed especially during the weekday PM and Saturday peak hours.
- Under the future total condition in the weekday PM and Saturday peak hours, there will be increased congestion and overcapacity at the Humber Station Road / King Street intersection, as well as overcapacity and poor level of service for the westbound approach at the Humber Station Road / Street B intersection.
- Mitigation measures were evaluated to address these deficiencies. At Humber Station Road / King Street, signal timing optimization and lane configuration adjustments are expected to improve overall operations and reduce peak hour congestion to acceptable levels. At Humber Station Road / Street B, the introduction of traffic signal control significantly improves intersection performance, eliminating previously identified capacity constraints and resulting in good overall levels of service.
- It is recommended intersection operations be monitored by the Region and Town, particularly at Humber Station Road and King Street, to confirm performance and that future mitigation measures be implemented in the future when operational constraints are identified.
- Until the entirety of Street A is completed (including the ROWs through the adjacent neighbouring properties to the north and south of the subject site), signalization is recommended at Humber Station Road / Street B.
- Given that the subject development is located within a PMTSA, the proposed parking supply is appropriate and sufficient to accommodate the anticipated needs based on the policy and development contexts, multi-modal transit hub facilities expected in the surrounding area, and TDM measures.
- TDM measures are recommended to support the reduction of vehicular parking and encourage non-auto (transit, cycle, walk) modes of travel.

Appendix A – Reduced Architectural Plans



1
A-1.0
SITE PLAN
SCALE: 1:400

KEY PLAN

LEGEND

- PROPERTY LINE
- PHASHING LINE
- NEW BUILDING
- EXISTING BUILDING
- LANDSCAPE
- CONC. PAVEMENT,150MM RAISED
- PRECAST CONC. PAVERS
- ASPHALT
- BARRIER FREE PARKING
- BARRIER FREE CURB
- BARRIER CURB
- ROLLED CURB
- MAIN DOOR ENTRANCE
- OVERHEAD DOOR
- LS LIGHT STANDARD
- FH EXISTING FIRE HYDRANT
- LP LIGHT STANDARD
- WALL MOUNTED LIGHT
- LIGHT BOLLARDS
- PROPOSED FIRE HYDRANT

PHASING KEY MAP

PHASE-1	AREA	9033.22 SQ.M
PHASE-2		5079.88 SQ.M
PHASE-3		5732.21 SQ.M
PHASE-4		6117.24 SQ.M

11th DECEMBER 2025
ISSUED FOR OPA APPLICATION #1
NOT FOR CONSTRUCTION

PHASE-1(APARTMENT BUILDING-1)

PARKING CALCULATION		PROPOSED
APARTMENT _ RETAIL(431.52 SQM)	231(0.7 SPACES PER UNIT)	220 (INC. B.F+EV PARKING)
ACCESSIBLE PARKING		10
RETAIL(431.52 SQM)	22 (1 PER 20 SQ.M. OF GFA)	05
VISITOR PARKING (0.10 SPACES PER UNIT)	33	14(INC. B.F + EV PARKING)
TOTAL PARKING	264	239
BIKE PARKING		78

SETBACKS		PROPOSED
NORTH SIDE (EXTERIOR SIDE LOT LINE)	3 M.	12.90 M.
SOUTH SIDE (INTERIOR SIDE LOT LINE)	3 M.	67.12 M.
EAST SIDE (REAR LOT LINE)	3 M.	30.00 M.
WEST SIDE (FRONT LOT LINE)	NIL	138.70 M.

BUILDING AREA		PROPOSED
PHASE 1 LOT AREA		9033.42 SQ.M
RETAIL BUILDING AREA		431.24 SQ.M.
APARTMENT BUILDING #1 AREA	N/A	615.85 SQ.M.
PHASE 1 TOTAL COVERAGE		1047.09 SQ.M.(4.03%)
PHASE 1 TOTAL GFA		29089.24 SQ.M.

PHASE-2(APARTMENT BUILDING-2)

PARKING CALCULATION	REQUIRED	PROPOSED
APARTMENT _ RETAIL(431.52 SQM)	231(0.7 SPACES PER UNIT)	220(INC. B.F PARKING)
ACCESSIBLE PARKING		10
RETAIL(431.52 SQM)	22(1 PER 20 SQ.M. OF GFA)	05
VISITOR PARKING (0.10 SPACES PER UNIT)		14(INC. B.F PARKING)
TOTAL PARKING	33	239
BIKE PARKING	264	78

SETBACKS	REQUIRED	PROPOSED
NORTH SIDE (EXTERIOR SIDE LOT LINE)	3 M.	66.90 M.
SOUTH SIDE (INTERIOR SIDE LOT LINE)	3 M.	13.03 M.
EAST SIDE (REAR LOT LINE)	3 M.	30.17 M.
WEST SIDE (FRONT LOT LINE)	NIL	144.05 M.

BUILDING AREA	REQUIRED	PROPOSED
PHASE 2 LOT AREA		5079.88 SQ.M
RETAIL BUILDING AREA		431.24 SQ.M.
APARTMENT BUILDING #2 AREA	N/A	615.85 SQ.M.
PHASE 2 TOTAL COVERAGE		1047.09 SQ.M.(4.03%)
PHASE 2 TOTAL GFA		29089.24 SQ.M.

PHASE-3(COMMERCIAL BUILDINGS-A,B,C,D)

PARKING CALCULATION	REQUIRED	PROPOSED
COMMERCIAL-2404.32 SQM.	120 (1 PER 20 SQ.M. OF GFA)	49 (INC. B.F + EV PARKING)
ACCESSIBLE PARKING		07
TOTAL PARKING	120	49
BIKE PARKING		22

SETBACKS	REQUIRED	PROPOSED
NORTH SIDE (EXTERIOR SIDE LOT LINE)	3 M.	4.80 M.
SOUTH SIDE (INTERIOR SIDE LOT LINE)	3 M.	68.39 M.
EAST SIDE (REAR LOT LINE)	3 M.	107.80 M.
WEST SIDE (FRONT LOT LINE)	NIL	3.80 M.

BUILDING AREA	REQUIRED	PROPOSED
PHASE 3 LOT AREA		5714.38 SQ.M
COMMERCIAL BUILDING -A		564.81 SQ.M.
COMMERCIAL BUILDING -B		597.51 SQ.M.
COMMERCIAL BUILDING -C		270.00 SQ.M.
COMMERCIAL BUILDING -D		486.00 SQ.M.
PHASE 3 TOTAL COVERAGE		1918.32 SQ.M.(7.39%)
PHASE 3 TOTAL GFA		2404.32 SQ.M.

PHASE-4 (COMMERCIAL BUILDINGS-E,F,G,H)

PARKING CALCULATION	REQUIRED	PROPOSED
COMMERCIAL- 2378.92 SQM.	119 (1 PER 20 SQ.M. OF GFA)	60 (INC. B.F + EV PARKING)
ACCESSIBLE PARKING		07
TOTAL PARKING	119	60
BIKE PARKING		14

SETBACKS	REQUIRED	PROPOSED
NORTH SIDE (SIDE LOT LINE)	3 M.	67.96 M.
SOUTH SIDE (EXTERIOR SIDE LOT LINE)	3 M.	4.82 M.
EAST SIDE (INTERIOR REAR LOT LINE)	3 M.	108.87 M.
WEST SIDE (FRONT LOT LINE)	NIL	3.80 M.

BUILDING AREA	REQUIRED	PROPOSED
PHASE 4 LOT AREA		6099.70 SQ.M
COMMERCIAL BUILDING -E		587.56 SQ.M.
COMMERCIAL BUILDING -F		549.36 SQ.M.
COMMERCIAL BUILDING -G		486.00 SQ.M.
COMMERCIAL BUILDING -H		270.00 SQ.M.
PHASE 4 TOTAL COVERAGE		1892.92 SQ.M.(7.29%)
PHASE 4 TOTAL GFA		2378.92 SQ.M.

PROJECT STATISTICS
ADDRESS: "0" HUMBER STATION RD CALEDON
PROPOSED ZONING: RMD

	REQUIRED	PROPOSED
TOTAL LOT AREA	NIL	26328.55 SQ.M.(6.50Acre)
ROAD WIDENING AREA (DEDUCTION)		365.79 SQ.M.
PROPOSED LOT AREA		25962.76 SQ.M.(6.41Acre)
LOT FRONTAGE	NIL	121.92 M.
TOTAL PAVED AREA		15435.9 SQ.M.(59.46%)
TOTAL LANDSCAPED AREA	15% OF LOT	4621.44 SQ.M.(17.80%)
BUILDING HEIGHT (MAX.)	20 STOREYS	20 STOREYS
TOTAL NO. OF RESIDENTIAL UNITS		660
BASEMENT LEVELS		2
TOTAL PARKING SPACES		587
EV READY PARKING SPACES (RESIDENTIAL PHASE 1 & 2)		94
EV READY PARKING SPACES (COMMERCIAL PHASE 3 & 4)		21
TOTAL LOADING AREAS		4
PLANTING STRIP	3M ALONG A STREET	
AMENITY AREA (BUILDING 1 & 2) (GYM+PARTY HALL+CO-SHARING OFFICE)	1320 SQ.M. ($2M^2$ PER UNIT)	1243.14 SQ.M.
OUTDOOR AMENITY AREA	2592.74 SQ.M. (10% OF SITE AREA)	1835.22 SQ.M. (6.97%)

NUMBER OF UNITS FOR EACH APARTMENT BUILDING IN PHASE 1 AND 2: 330 UNITS
145 (1BR UNIT), 179 (2BR UNITS), 6 (3BR UNITS)

PARKING SIZES:
SURFACE PARKING SIZE (2.6M X 5.8M) | UNDERGROUND PARKING SIZE (2.75M X 6.0M)
ACCESSIBLE PARKING SIZE (TYPE-A-3.4M X 6.0M) (TYPE-B-2.75M X 6.0M)

MUNICIPAL ADDRESS & LEGAL DESCRIPTION
PART OF LOT 11 CONCESSION 5 (FORMERLY TOWNSHIP OF ALBION, COUNTY OF PEEL) TOWN OF CALEDON REGIONAL MUNICIPALITY OF PEEL

SURVEY INFORMATION TAKEN FROM:
2 HOLLAND DRIVE, UNIT 5, BOLTON, ONTARIO L7E 1E1
PHONE 905.951.6000/ FAX 905.857.4811 /EMAIL-info@maurogroup.ca

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Richmond Hill, Ontario. L4B 3J9
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E: info@narchitecture.com
www.narchitecture.com

ONTARIO ASSOCIATION OF ARCHITECTS
NITIN MALHOTRA LICENCE 5211

N (GEODETIC NORTH)
PROJECT NORTH

11 DEC. 2025

No.	Date	Version	Dwn.
1.	11 DEC. 2025	ISSUED FOR OPA APPLICATION #1	MG.

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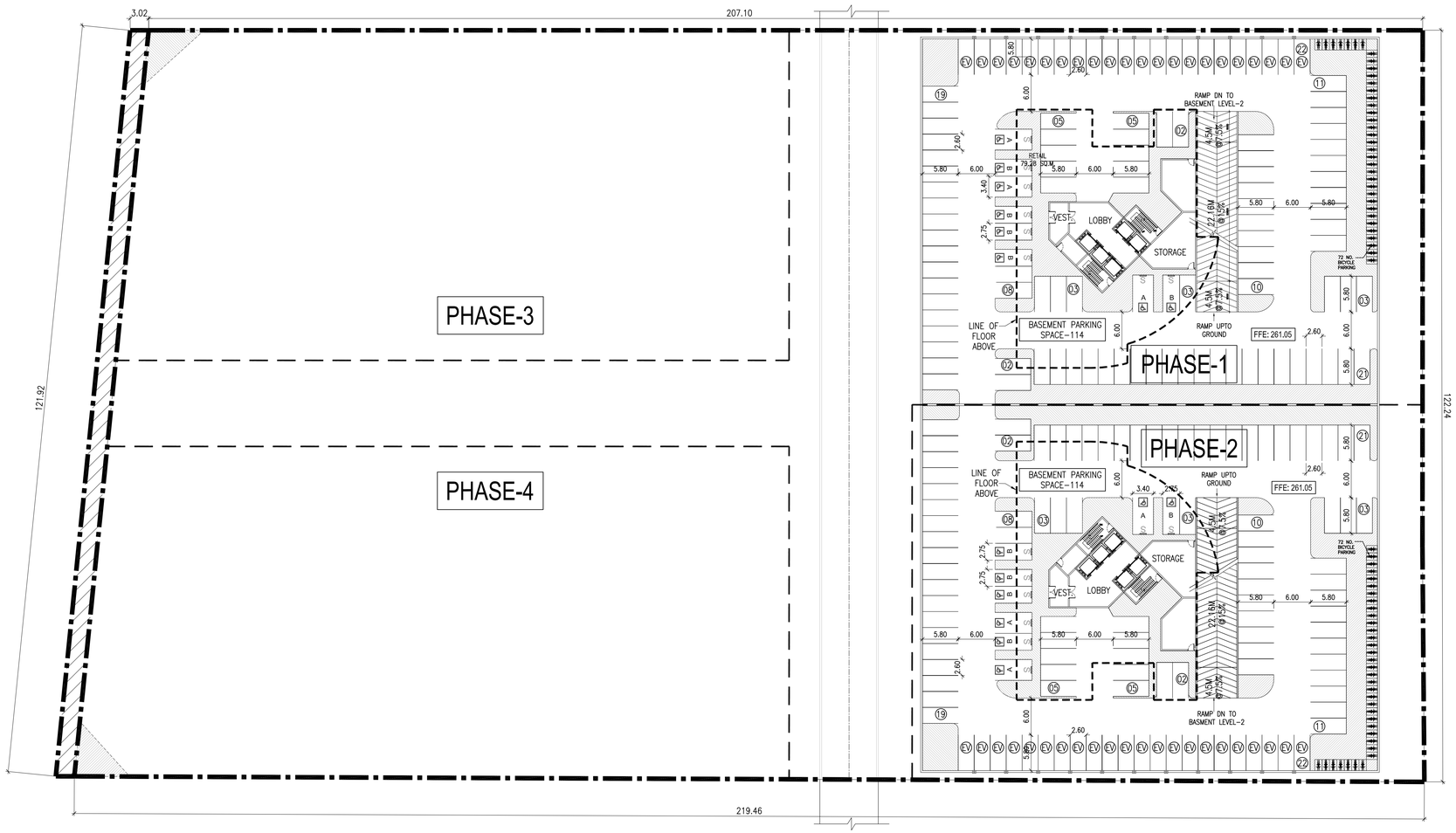
PROJECT:

"0" HUMBER STATION RD CALEDON, ON.

DRAWING TITLE:

SITE PLAN: GROUND LEVEL

DRAWN BY: MB	DATE: 08 JAN. 2025
CHECKED BY: NM	SCALE: AS NOTED
PROJECT NO.: 24-66	DRAWING NO.: A-1.0



1
A-1.5
BASEMENT PLAN LEVEL (-1)
SCALE: 1:400

n Architecture Inc
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E: info@narchitecture.com
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ONTARIO ASSOCIATION OF ARCHITECTS
NITIN MALHOTRA
LICENCE
6211

N
(GEODETIC NORTH)
PROJECT NORTH

11 DEC. 2025

11th DECEMBER 2025
ISSUED FOR OPA APPLICATION #1
NOT FOR CONSTRUCTION

No.	Date	Version	Dwn.
1.	11 DEC. 2025	ISSUED FOR OPA APPLICATION #1	MG.

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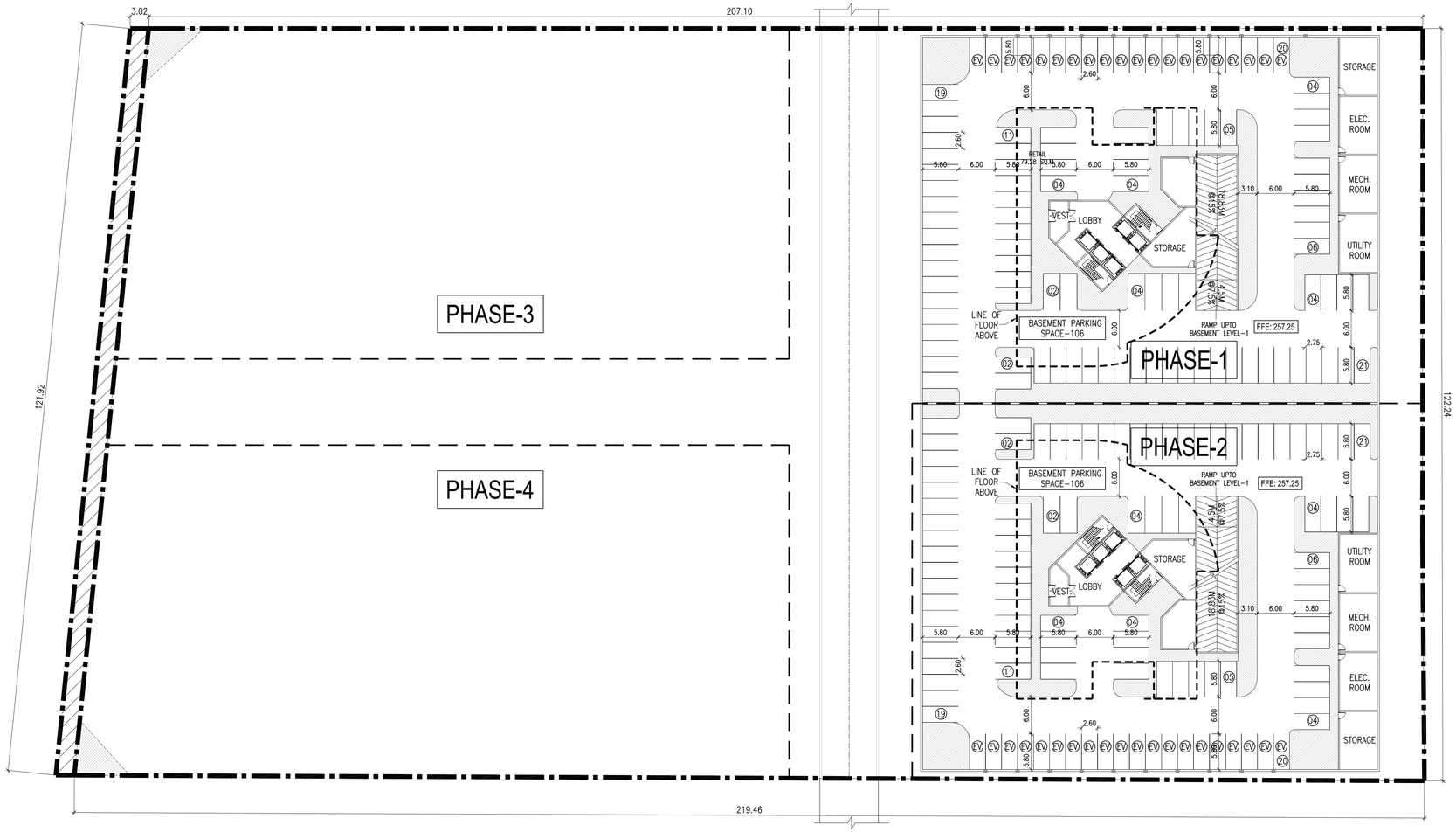
PROJECT:

"0" HUMBER STATION RD CALEDON, ON.

DRAWING TITLE:

BASEMENT LEVEL(-1)

DRAWN BY: MB	DATE: 08 JAN. 2025
CHECKED BY: NM	SCALE: AS NOTED
PROJECT NO.: 24-66	DRAWING NO.: A-1.5



1 / A-1.6 BASEMENT PLAN LEVEL(-2)
SCALE: 1:400

n Architecture Inc
PRINCIPAL: NITIN MALHOTRA, ARCHITECT.
9120 Leslie Street, Suite-208
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PROJECT:

"0" HUMBER STATION RD CALEDON, ON.

DRAWING TITLE:

BASEMENT LEVEL(-2)

DRAWN BY: MB	DATE: 08 JAN. 2025
CHECKED BY: NM	SCALE: AS NOTED
PROJECT NO.: 24-66	DRAWING NO.: A-1.6

Appendix B – TOR Correspondence

John Nhan

From: Barnes, Catherine <catherine.barnes@peelregion.ca>
Sent: February 6, 2025 9:58 AM
To: Hamdani, Hashim; John Nhan; Kavleen Younan
Cc: Richard Pernicky; Recagno, Damon
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]

Follow Up Flag: Follow up
Flag Status: Completed

Hi John,

As this does not front a Regional Road the Town of Caledon will take the lead. Please see information below to be utilized in the TIS and to gather information on surrounding intersections etc.

Please see the link here for the detailed Region of Peel TIS formatting and contact information for background traffic (growth rate, AADT, signal timing, etc.).

Contacts

- Please see the following contacts to obtain data for your analysis:
    - Please contact Transportation Planning transportationplanningdata@peelregion.ca to confirm growth rates along the subject Regional road(s).
    - Please contact Damian Jamroz (damian.jamroz@peelregion.ca) Supervisor of Traffic Operations to obtain the most recent TMCs and/or average annual daily traffic (AADT).
    - Please contact Trina Fernandes (trina.fernandes@peelregion.ca) & Rebecca Caughey (Rebecca.caughey@peelregion.ca)Supervisor of Traffic Signals and Streetlighting, to obtain traffic signal timing parameters and ensure that the information includes the appropriate walk/don't walk splits, recall modes and offsets.
    - Please contact Development Services Planning staff to obtain details on surrounding developments in the area that would affect traffic capacity in the planning horizon year(s).
    - Please contact your Local Municipality Planning Department to obtain details on the surrounding developments in the area that would affect traffic capacity in the planning horizon years.

I trust this to be satisfactory; please do not hesitate to contact me should you have any questions or concerns.

Catherine Barnes
Region of Peel
Specialist, Transportation Development
Transportation Division, Public Works.
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON , L6T 4B9
During this Health Emergency please contact me via email as I am out of the office working remotely.

Region of Peel
working with you

P **Please consider the environment before printing this email.**

Our working hours may be different. Please do not feel obligated to reply outside of your working hours.

The Region of Peel is situated on the Treaty Lands and Territory of the Mississaugas of the Credit First Nation as well as the traditional territory of the Anishinabeg, Huron-Wendat and Haudenosaunee peoples.

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From: John Nhan <john@nextrans.ca>
Sent: February 6, 2025 7:30 AM
To: Kavleen Younan <Kavleen.Younan@caledon.ca>; Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>
Cc: Richard Pernicky <richard@nextrans.ca>
Subject: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]

CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.

Hi Kavleen and Hashim,

Nextrans is retained to prepare a TIS for a proposed mixed-use development located approximately 320m north of King Street, between Humber Station Road and the CP Railway corridor, in the Town of Caledon. The development proposes four one-storey commercial buildings, two 14-storey residential buildings, and two proposed right-of-ways. Access will be provided from along Humber Station Road.

Please find attached our TIS Terms of Reference, for your review and comment.

Thank you.

Regards,
John Nhan, P.Eng.
Project Engineer

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8
www.nextrans.ca

John Nhan

From: Kavleen Younan <Kavleen.Younan@caledon.ca>
Sent: March 5, 2025 2:24 PM
To: John Nhan
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]

Follow Up Flag: Follow up
Flag Status: Flagged

Hi John,

Please see our comments below on the proposed ToR. Let me know if there are any questions.

- In addition to Region's TIS guidelines, also adhere to Town's TIS guidelines.
- Please ensure that HCM 6th Edition methodology is utilized to establish control delay, Level of Service and volume-to-capacity ratios.
- In addition to intersection of Humber Station Road and King Street, please undertake an operational analysis of the site access(es). Note that Town may request additional intersections to be analyzed pending the first draft of the trip distribution analysis from the site.
- The Town's current development application map and current development application website should be consulted for transportation studies publicly available online . It is noted that the following applications have online studies:
    - SBD 21T-24006: 14100, 14166 and 14196 Humber Station Road - Humberking
    - SBD 21T-22002C: 0 and 1459 Humber Station Rd
    - SBD 21T-22001C: 14275 The Gore Road, 0 Humber Station Road, 14396 Humber Station..
    - 8166 King St. (SPA 2016-0063, RZ 2016-0014)
    - Please obtain required TIS excerpt for 0 Humber station Road (SPA 2021-0064) by contact the staff on the webpage.
    - Please ensure the following are captured in the assumed growth rates. Additionally, please confirm with Regional Staff if Emme modelling is available for this area as it may be helpful to determine an adequate growth rate:
        - Bolton North Hill
        - H2-4 lands as per the Town's OP
        - POPA 2020-0003 and RZ 2020-0011 - 6939 King Street
- Parking Review:
    - Barrier-free parking requirements should be reviewed in accordance with the Town's Traffic By-Law 2024-048 Schedule O and AODA.
    - Electric Vehicle parking requirements outlined in the Town's Green Development Standard should be included.
    - Ensure bicycle parking is also included in the parking review as a part of Transportation Demand Management (TDM) strategy.
    - Please note that for subdivisions the total number of anticipated parking spaces including driveway, garage, and on street should be estimated. This should be included in the on -street parking plan and updated in the detailed design stage at the pavement markings signage plan.
- Site Access Review:
    - The Access Review should include a discussion of corner clearance, sightlines, curb radii and throat length. The review should be completed in accordance with the requirements outlined within the OPSD 350.010 drawing and the TAC Geometric Design Guide.

- The review will also include all design components internal to the site, such as driving aisle width, parking and loading space dimensions, compliance with fire route requirements, etc.
- The consultant should submit the Pavement Marking and Signage Plan, incorporating pedestrian/cyclist facilities for the Town review. Ensure that Fire Route locations are also shown on the drawings in compliance with BL-2024-048.

- Please include AutoTURN analysis to ensure maneuverability of snowplows, emergency vehicles and waste vehicles.
- Pedestrian and Cyclist Circulation Plan should be included in the submission and the anticipated facilities' type and location should be highlighted in the pedestrian circulation plan.

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

Email: kavleen.younan@caledon.ca
Town of Caledon | www.caledon.ca | www.visitcaledon.ca | Follow us @TownofCaledon

---

From: John Nhan <john@nextrans.ca>
Sent: Monday, March 3, 2025 1:06 PM
To: Kavleen Younan <Kavleen.Younan@caledon.ca>
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the contents to be safe.

Thank you Kavleen.

Regards,
John Nhan, P.Eng.
Project Engineer

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8
www.nextrans.ca

From: Kavleen Younan <Kavleen.Younan@caledon.ca>
Sent: March 3, 2025 12:50 PM
To: John Nhan <john@nextrans.ca>
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]

Hi John,

I apologize for the delay. We're hoping to have the comments to you by Wednesday this week.

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

Email: kavleen.younan@caledon.ca
Town of Caledon | www.caledon.ca | www.visitcaledon.ca | Follow us @TownofCaledon

From: John Nhan <john@nextrans.ca>
Sent: Monday, March 3, 2025 12:09 PM
To: Kavleen Younan <Kavleen.Younan@caledon.ca>
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]
Importance: High

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the contents to be safe.

Hi Kavleen,

I'd like to follow up on this request for review of the TOR as it's been a month since my original request.

I have re-attached the TOR, for reference.

Thank you.

Regards,
John Nhan, P.Eng.
Project Engineer

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8
www.nextrans.ca

From: John Nhan
Sent: February 26, 2025 11:43 AM
To: Kavleen Younan <Kavleen.Younan@caledon.ca>
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]
Importance: High

Hi Kavleen,

Just following up on the request for Town TOR review and comment.

Thanks!

Regards,
John Nhan, P.Eng.
Project Engineer

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8
www.nextrans.ca

From: Barnes, Catherine <catherine.barnes@peelregion.ca>
Sent: February 6, 2025 9:58 AM
To: Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>; John Nhan <john@nextrans.ca>; Kavleen Younan <Kavleen.Younan@caledon.ca>
Cc: Richard Pernicky <richard@nextrans.ca>; Recagno, Damon <damon.recagno@peelregion.ca>
Subject: RE: NT-24-103 - TIS Terms of Reference - 0 Humber Station Road, Town of Caledon [PRE 2024-0056]

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I trust this to be satisfactory; please do not hesitate to contact me should you have any questions or concerns.

Catherine Barnes
Region of Peel
Specialist, Transportation Development

Transportation Division, Public Works.
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON , L6T 4B9
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Region of Peel
working with you

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Regards,
John Nhan, P.Eng.
Project Engineer

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520 Industrial Parkway South, Suite 201
Aurora, Ontario L4G 6W8

Phone: 905-503-2563
www.nextrans.ca

nexTrans CONSULTING ENGINEERS
NextEng Consulting Group Inc.

To: Hashim Hamdani, Region of Peel
Kavleen Younan, Town of Caledon

From: John Nhan, Nextrans Consulting Engineers

Date: February 5, 2025

Re: **Terms of Reference – Transportation Impact Study**
Proposed Mixed-Use Development
0 Humber Station Road, Town of Caledon
Town/Region File PRE 2024-0056
NT-24-103

INTRODUCTION

The following work plan would like to be confirmed for a Transportation Impact Study (TIS) in support of Official Plan Amendment, Zoning By-law Amendment, Site Plan, and Draft Plan of Subdivision Applications for a proposed mixed-use development at the property known as 0 Humber Station Road (herein referred to as the "subject site") in the Town of Caledon. **Figure 1** illustrates the subject site location. The subject site is located between Humber Station Road and the CP Railway corridor, approximately 320m north of King Street. The concept plan is enclosed in **Attachment 1**.

The mixed-use development proposes to introduce six (6) buildings, including four (4) one-storey commercial buildings with a combined commercial GFA of 4,333.74sqm (46,647.98sqft), and two (2) 14-storey residential buildings with a total of 441 dwelling units. Two (2) proposed right-of-ways with a 20m width will be provided, including an east-west right-of-way for access onto Humber Station Road and a connecting north-south right-of-way for future interconnection with the adjacent lands to the north and south. A total of 879 spaces will be provided for the subject site, including at-grade and underground parking.

The TIS for the proposed redevelopment will be conducted following the Region of Peel online Traffic Impact Study Guidelines. The following outlines the proposed Terms of Reference for the study.

STUDY AREA & TRAFFIC DATA

The study will analyze the weekday AM, weekday PM, and Saturday peak hours. The proposed study area will include the analysis of the intersection of Humber Station Road and King Street.

TRAFFIC ASSESSMENT & STUDY HORIZON YEAR

Synchro 10 will be used for intersection capacity analysis during the weekday AM, weekday PM, and Saturday peak hours using HCM 2000 methodology for signalized and unsignalized intersections. SimTraffic will be used to assess 95th percentile queue lengths. The full buildout is assumed for three years in 2028. A 2033 horizon (five-year post full buildout) will also be assessed in this TIS.

BACKGROUND TRAFFIC

General Corridor Growth Rate: Nextrans will review historical traffic data and consult with the Town of Caledon and Peel Region to determine corridor growth rates. If sufficient growth rate data is unavailable, a 2.0% compounded per annum growth will be applied as applicable.

Road Network Improvements: Nextrans will note any road network improvements identified within the study area and account for any traffic diversions associated with these improvements within in our analysis. Based on the Town Multi-Modal Transportation Master Plan, Humber Station Road is planned to be widened from two lanes to four lanes by 2031, from Mayfield Road (Town south limit) to the CP Railway crossing located approximately 1km north of the subject site. The foregoing road improvements along Humber Station Road will be implemented within the traffic operations analysis for the 2033 horizon.

Background Developments: The following background developments were identified based on the Town's online development applications portal. Traffic volumes generated from the identified development applications will be included within the traffic analysis as background development traffic volumes. Nextrans requests that all relevant background traffic documents be made available.

1. 0, 7816 And 7844 King Street; 0, 14100, 14166, 14196, 14206, 14226, 14259, 14275, 14287, 14305, 14361, 14384 And 14396 Humber Station Road – Proposed secondary plan for Macville being comprised of various land uses. **[Secondary Plan - Official Plan Amendment 2021-0002]**
2. 0 Humber Station Road – Proposed transportation depot. **[Site Plan Application 2021-0064]**
3. 8186 King Street – Development of a Contractor's Facility, Business Office, and Open Storage. **[Zoning By-law Amendment 2016-0014]**

TRIP GENERATION, DISTRIBUTION, & ASSIGNMENT

Nextrans proposes to use the Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition to determine the auto site trips of the proposed development on the surrounding road network, as well as non-auto (walk+bike+transit) site trips expected to be generated. The general trip distribution will be based on a review of the existing trip distribution patterns derived from the existing traffic volumes for the intersection study area. Trip assignment will be completed accordingly to reflect the configuration of the proposed site accesses, turning restrictions, and logical routings.

MITIGATION MEASURES

Under future total conditions, movements at the studied intersections that exceed capacity will be identified. Mitigation measures such as traffic signal optimization (unchanged cycle length) and road widenings will be explored. If mitigation measures are unsuccessful, this will also be identified. If remedial measures are to be employed, a scenario will be provided demonstrating the change in intersection operations.

SITE CIRCULATION

AutoTURN will be used to determine the site circulation and functionality of typical vehicles for the subject development, including proposed right-of-ways, site accesses, parking areas, fire routes, and loading spaces.

PARKING & LOADING REVIEW

The site is currently subject to Town of Caledon Zoning By-Law 2006-50, as amended, which will be reviewed for parking space and loading space minimum requirements. Should justification be required for a parking reduction from the zoning by-law, a parking justification study will be prepared within the TIS and a parking rate / policy will be recommended.

TRANSIT REVIEW

The existing transit facilities within the study area will be reviewed. Support for transit services and improved first/last mile access to connect the subject site will be explored to determine possible recommendations.

ACTIVE TRANSPORTATION

The existing and proposed active transportation facilities for the study area and internally to the subject site will be reviewed. Recommendations will be provided accordingly.

TRANSPORTATION DEMAND MANAGEMENT

A review of existing nearby transportation facilities and possible initiatives and policies to promote and encourage modes of transportation in lieu of single occupant vehicle (SOV) trips will be made to influence the travel behaviour of residents, employees, and visitors to reduce travel demand and create a more efficient transportation network.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

John Nhan, P.Eng.
Project Engineer

Enclosed: Attachment 1: Concept Plan

Appendix C – Traffic Data

Spectrum

Turning Movement Count
Location Name: RR9 KING ST E & HUMBER STATION RD
Date: Thu, Mar 20, 2025 Deployment Lead: Constantinos Kotassidis

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (1 . RR9 KING ST E & HUMBER STATION RD) CustID: 00905322

Start Time	Southbound HUMBER STATION RD						Westbound KING ST						Northbound HUMBER STATION RD						Eastbound 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		
2025-03-20 07:00:00	0	15	4	0	0	19	3	67	15	0	0	85	3	2	3	0	0	8	14	47	2	0	0	63	175	
2025-03-20 07:15:00	2	15	6	0	0	23	2	90	11	0	0	103	4	2	4	0	0	10	20	50	2	0	0	72	208	
2025-03-20 07:30:00	3	24	5	0	0	32	1	96	15	0	0	112	2	2	1	0	0	5	22	81	2	0	0	105	254	
2025-03-20 07:45:00	0	22	5	0	0	27	4	87	9	0	0	100	7	2	8	0	0	17	24	88	1	0	0	113	257	894
2025-03-20 08:00:00	2	16	4	0	0	22	3	101	8	0	0	112	1	1	1	0	0	3	20	86	5	0	0	111	248	967
2025-03-20 08:15:00	1	16	5	0	0	22	1	87	15	0	0	103	6	4	6	0	0	16	22	75	0	0	0	97	238	997
2025-03-20 08:30:00	4	17	5	0	0	26	2	93	8	0	0	103	4	3	8	0	0	15	18	76	2	0	0	96	240	983
2025-03-20 08:45:00	1	10	2	0	0	13	0	55	9	0	0	64	2	2	7	0	0	11	22	88	1	0	0	111	199	925
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2025-03-20 09:30:00	0	8	1	0	0	9	2	53	2	0	0	57	1	2	3	0	0	6	11	71	2	0	0	84	156	712
2025-03-20 09:45:00	3	9	3	0	0	15	0	36	1	0	0	37	3	1	4	0	0	8	12	72	0	0	0	84	144	657
BREAK																										
2025-03-20 16:00:00	5	3	2	0	0	10	12	137	7	0	0	156	10	16	20	0	0	46	8	99	1	0	0	108	320	
2025-03-20 16:15:00	1	6	3	0	0	10	9	122	5	0	0	136	10	19	13	0	0	42	5	110	0	0	0	115	303	
2025-03-20 16:30:00	4	2	3	0	0	9	11	125	4	0	0	140	20	30	23	0	0	73	4	100	1	0	0	105	327	
2025-03-20 16:45:00	2	7	2	0	0	11	17	118	5	0	0	140	11	28	14	0	0	53	3	96	4	0	0	103	307	1257
2025-03-20 17:00:00	2	7	4	0	0	13	12	130	0	0	0	142	21	29	17	0	0	67	5	96	4	0	0	105	327	1264
2025-03-20 17:15:00	2	8	3	0	0	13	4	118	8	0	0	130	17	27	19	0	0	63	9	95	1	0	0	105	311	1272
2025-03-20 17:30:00	0	9	5	0	0	14	10	101	1	0	0	112	10	16	17	0	0	43	6	85	1	0	0	92	261	1206
2025-03-20 17:45:00	4	9	3	0	0	16	10	82	2	0	0	94	8	29	15	0	0	52	6	78	2	0	0	86	248	1147
2025-03-20 18:00:00	4	6	6	0	0	16	7	100	1	0	0	108	2	12	20	0	0	34	3	79	1	0	0	83	241	1061
2025-03-20 18:15:00	0	5	2	0	0	7	6	72	2	0	0	80	5	15	19	0	0	39	7	60	1	0	0	68	194	944
2025-03-20 18:30:00	1	3	3	0	0	7	7	63	2	0	0	72	9	10	18	0	0	37	3	50	3	0	0	56	172	855
2025-03-20 18:45:00	2	7	2	0	0	11	3	62	5	0	0	70	5	8	8	0	0	21	4	53	0	0	0	57	159	766
Grand Total	44	252	85	0	0	381	131	2090	148	0	0	2369	165	271	259	0	0	695	286	1871	44	0	0	2201	**5646**	-
Approach%	11.5%	66.1%	22.3%	0%		-	5.5%	88.2%	6.2%	0%		-	23.7%	39%	37.3%	0%		-	13%	85%	2%	0%		-	-	-
Totals %	0.8%	4.5%	1.5%	0%		6.7%	2.3%	37%	2.6%	0%		42%	2.9%	4.8%	4.6%	0%		12.3%	5.1%	33.1%	0.8%	0%		39%	-	-
Heavy	9	3	16	0		-	32	130	19	0		-	18	7	31	0		-	24	135	3	0		-	-	-
Heavy %	20.5%	1.2%	18.8%	0%		-	24.4%	6.2%	12.8%	0%		-	10.9%	2.6%	12%	0%		-	8.4%	7.2%	6.8%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 07:30 AM - 08:30 AM **Weather: Moderate Rain (12 °C)**

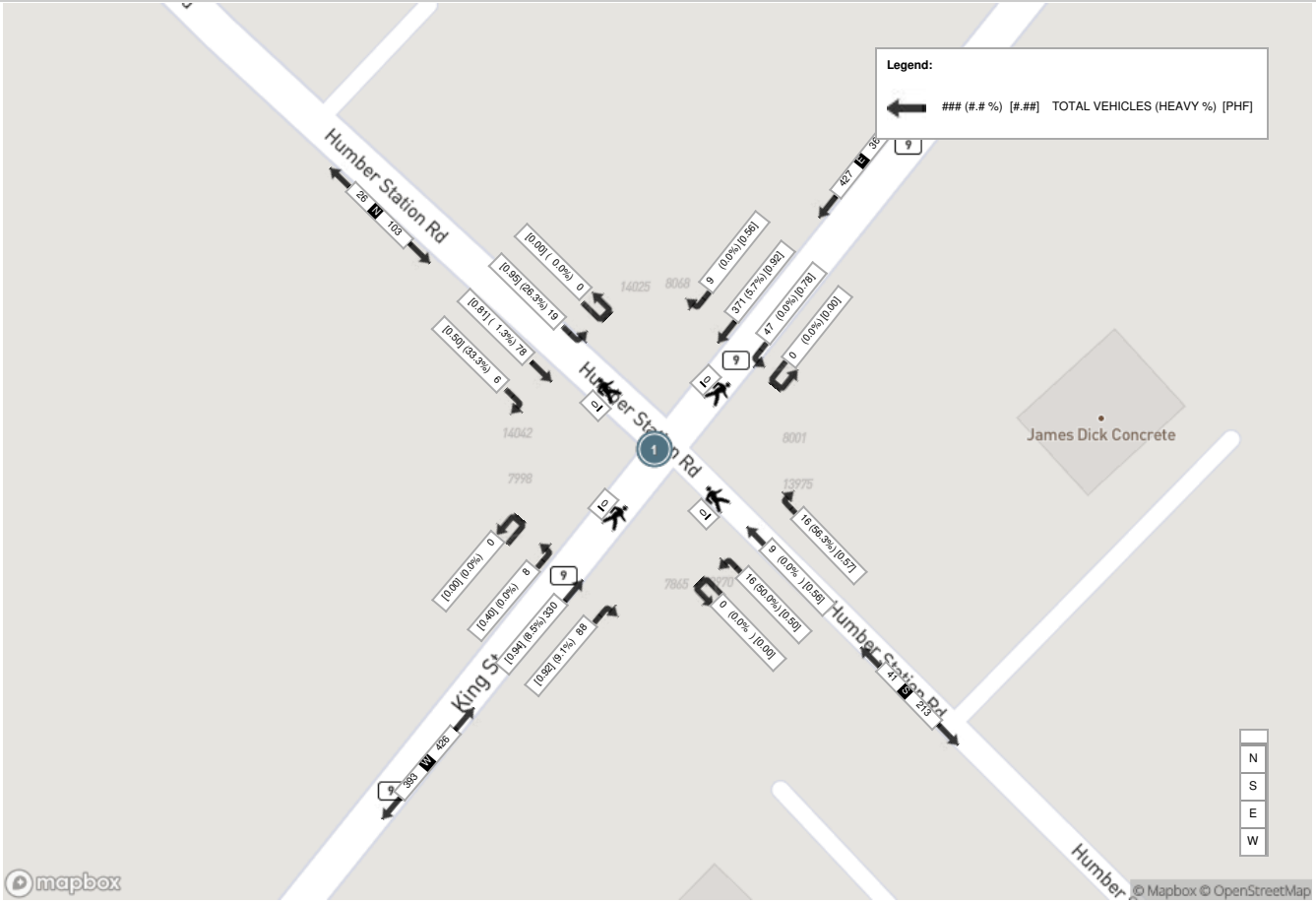
Start Time	Southbound HUMBER STATION RD						Westbound KING ST						Northbound HUMBER STATION RD						Eastbound KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-03-20 07:30:00	3	24	5	0	0	32	1	96	15	0	0	112	2	2	1	0	0	5	22	81	2	0	0	105	254
2025-03-20 07:45:00	0	22	5	0	0	27	4	87	9	0	0	100	7	2	8	0	0	17	24	88	1	0	0	113	257
2025-03-20 08:00:00	2	16	4	0	0	22	3	101	8	0	0	112	1	1	1	0	0	3	20	86	5	0	0	111	248
2025-03-20 08:15:00	1	16	5	0	0	22	1	87	15	0	0	103	6	4	6	0	0	16	22	75	0	0	0	97	238
Grand Total	6	78	19	0	0	103	9	371	47	0	0	427	16	9	16	0	0	41	88	330	8	0	0	426	**997**
Approach%	5.8%	75.7%	18.4%	0%		-	2.1%	86.9%	11%	0%		-	39%	22%	39%	0%		-	20.7%	77.5%	1.9%	0%		-	**-**
Totals %	0.6%	7.8%	1.9%	0%		10.3%	0.9%	37.2%	4.7%	0%		42.8%	1.6%	0.9%	1.6%	0%		4.1%	8.8%	33.1%	0.8%	0%		42.7%	**-**
PHF	0.5	0.81	0.95	0		0.8	0.56	0.92	0.78	0		0.95	0.57	0.56	0.5	0		0.6	0.92	0.94	0.4	0		0.94	0.97
Heavy	2	1	5	0		8	0	21	0	0		21	9	0	8	0		17	8	28	0	0		36	82
Heavy %	33.3%	1.3%	26.3%	0%		7.8%	0%	5.7%	0%	0%		4.9%	56.3%	0%	50%	0%		41.5%	9.1%	8.5%	0%	0%		8.5%	8.2%
Lights	4	77	14	0		95	9	350	47	0		406	7	9	8	0		24	80	302	8	0		390	915
Lights %	66.7%	98.7%	73.7%	0%		92.2%	100%	94.3%	100%	0%		95.1%	43.8%	100%	50%	0%		58.5%	90.9%	91.5%	100%	0%		91.5%	91.8%
Single-Unit Trucks	1	0	4	0		5	0	8	0	0		8	4	0	0	0		4	2	2	0	0		4	21
Single-Unit Trucks %	16.7%	0%	21.1%	0%		4.9%	0%	2.2%	0%	0%		1.9%	25%	0%	0%	0%		9.8%	2.3%	0.6%	0%	0%		0.9%	2.1%
Buses	1	1	0	0		2	0	5	0	0		5	2	0	1	0		3	2	13	0	0		15	25
Buses %	16.7%	1.3%	0%	0%		1.9%	0%	1.3%	0%	0%		1.2%	12.5%	0%	6.3%	0%		7.3%	2.3%	3.9%	0%	0%		3.5%	2.5%
Articulated Trucks	0	0	1	0		1	0	8	0	0		8	3	0	7	0		10	4	13	0	0		17	36
Articulated Trucks %	0%	0%	5.3%	0%		1%	0%	2.2%	0%	0%		1.9%	18.8%	0%	43.8%	0%		24.4%	4.5%	3.9%	0%	0%		4%	3.6%
Bicycles on Road	0	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%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Scattered Clouds (9 °C)

Start Time	Southbound HUMBER STATION RD						Westbound KING ST						Northbound HUMBER STATION RD						Eastbound 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	
2025-03-20 16:30:00	4	2	3	0	0	9	11	125	4	0	0	140	20	30	23	0	0	73	4	100	1	0	0	105	327
2025-03-20 16:45:00	2	7	2	0	0	11	17	118	5	0	0	140	11	28	14	0	0	53	3	96	4	0	0	103	307
2025-03-20 17:00:00	2	7	4	0	0	13	12	130	0	0	0	142	21	29	17	0	0	67	5	96	4	0	0	105	327
2025-03-20 17:15:00	2	8	3	0	0	13	4	118	8	0	0	130	17	27	19	0	0	63	9	95	1	0	0	105	311
Grand Total	10	24	12	0	0	46	44	491	17	0	0	552	69	114	73	0	0	256	21	387	10	0	0	418	**1272**
Approach%	21.7%	52.2%	26.1%	0%		-	8%	88.9%	3.1%	0%		-	27%	44.5%	28.5%	0%		-	5%	92.6%	2.4%	0%		-	**-**
Totals %	0.8%	1.9%	0.9%	0%		3.6%	3.5%	38.6%	1.3%	0%		43.4%	5.4%	9%	5.7%	0%		20.1%	1.7%	30.4%	0.8%	0%		32.9%	**-**
PHF	0.63	0.75	0.75	0		0.88	0.65	0.94	0.53	0		0.97	0.82	0.95	0.79	0		0.88	0.58	0.97	0.63	0		1	0.97
Heavy	1	1	1	0		3	12	29	6	0		47	1	4	4	0		9	1	14	1	0		16	75
Heavy %	10%	4.2%	8.3%	0%		6.5%	27.3%	5.9%	35.3%	0%		8.5%	1.4%	3.5%	5.5%	0%		3.5%	4.8%	3.6%	10%	0%		3.8%	5.9%
Lights	9	23	11	0		43	32	462	11	0		505	68	110	69	0		247	20	373	9	0		402	1197
Lights %	90%	95.8%	91.7%	0%		93.5%	72.7%	94.1%	64.7%	0%		91.5%	98.6%	96.5%	94.5%	0%		96.5%	95.2%	96.4%	90%	0%		96.2%	94.1%
Single-Unit Trucks	0	1	0	0		1	9	11	2	0		22	0	4	2	0		6	0	3	0	0		3	32
Single-Unit Trucks %	0%	4.2%	0%	0%		2.2%	20.5%	2.2%	11.8%	0%		4%	0%	3.5%	2.7%	0%		2.3%	0%	0.8%	0%	0%		0.7%	2.5%
Buses	1	0	0	0		1	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	5
Buses %	10%	0%	0%	0%		2.2%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	0.4%
Articulated Trucks	0	0	1	0		1	3	16	4	0		23	1	0	2	0		3	1	9	1	0		11	38
Articulated Trucks %	0%	0%	8.3%	0%		2.2%	6.8%	3.3%	23.5%	0%		4.2%	1.4%	0%	2.7%	0%		1.2%	4.8%	2.3%	10%	0%		2.6%	3%
Bicycles on Road	0	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%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%

Peak Hour: 07:30 AM - 08:30 AM **Weather: Moderate Rain (12 °C)**

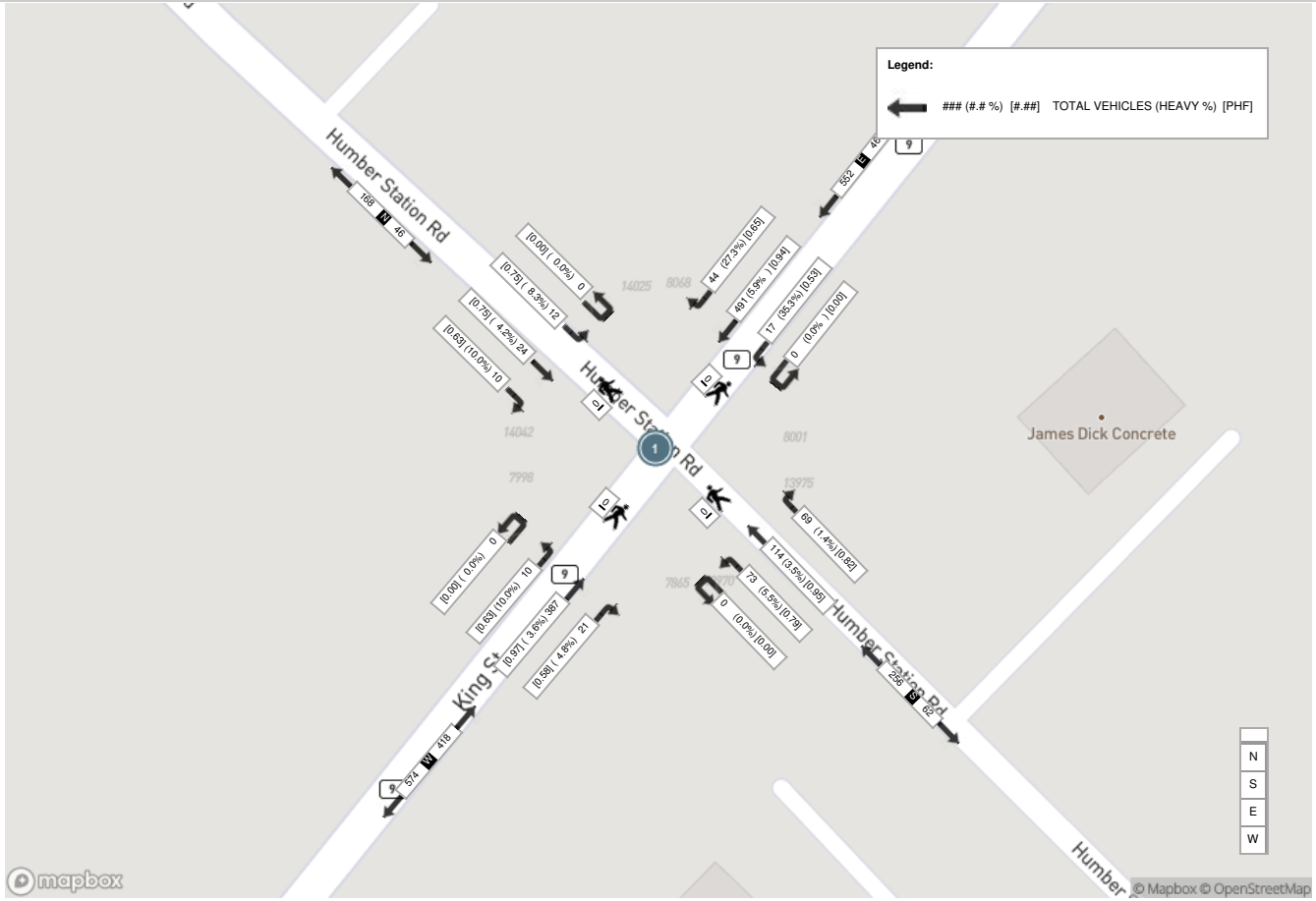


Spectrum

Turning Movement Count
Location Name: RR9 KING ST E & HUMBER STATION RD
Date: Thu, Mar 20, 2025 Deployment Lead: Constantinos Kotassidis

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY
SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather: Scattered Clouds (9 °C)**



Spectrum

Turning Movement Count
Location Name: RR9 KING ST E & HUMBER STATION RD
Date: Sat, Mar 22, 2025 Deployment Lead: Constantinos Kotassidis

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Turning Movement Count (1 . RR9 KING ST E & HUMBER STATION RD) CustID: 00905322

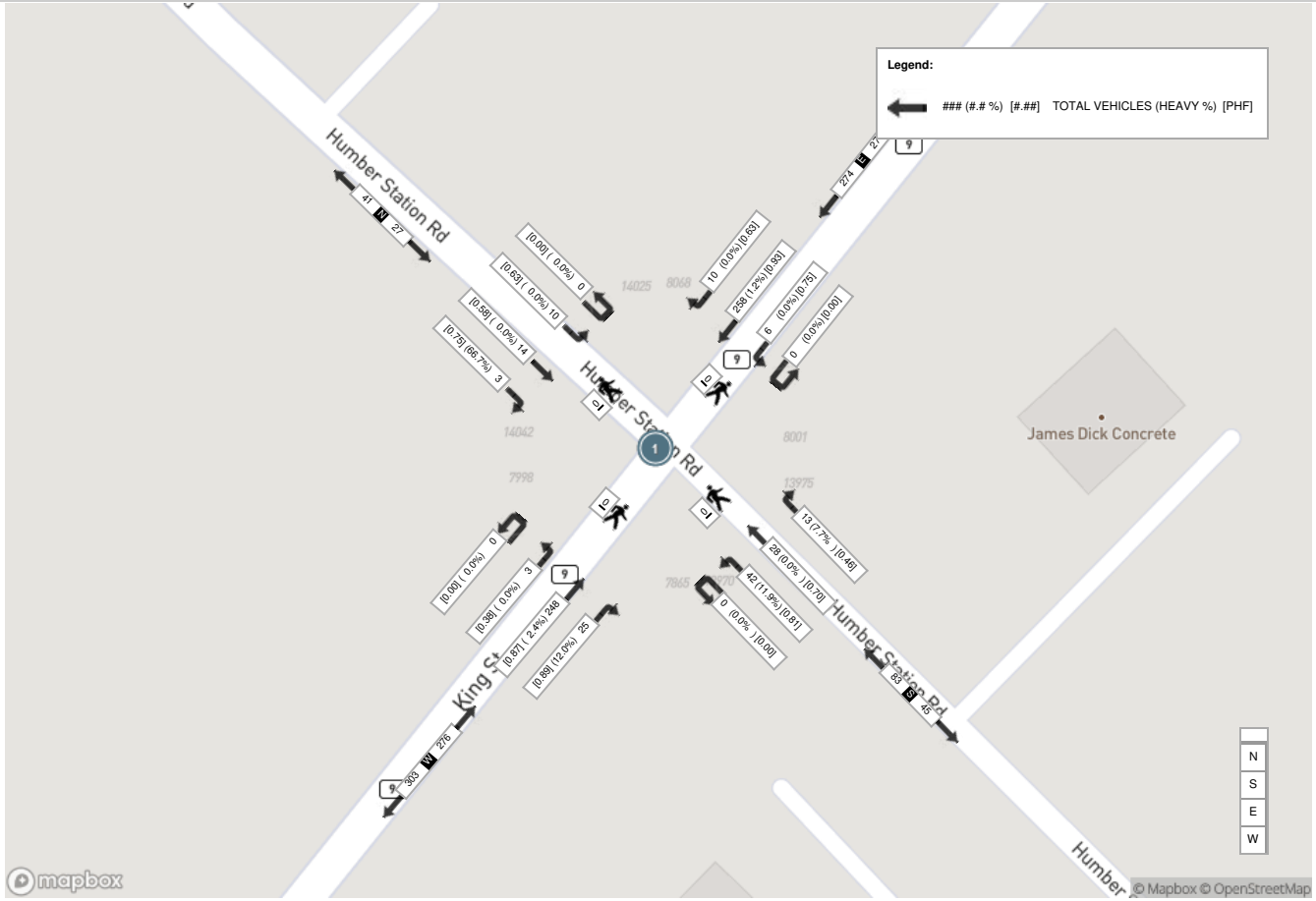
Start Time	Southbound HUMBER STATION RD						Westbound KING ST						Northbound HUMBER STATION RD						Eastbound KING ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru 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		
2025-03-22 11:00:00	2	7	2	0	0	11	5	51	0	0	0	56	1	0	4	0	0	5	11	53	1	0	0	65	137	
2025-03-22 11:15:00	0	8	1	0	0	9	2	58	3	0	0	63	1	5	2	0	0	8	5	68	0	0	0	73	153	
2025-03-22 11:30:00	0	5	1	0	0	6	6	62	0	0	0	68	2	6	7	0	0	15	11	70	2	0	0	83	172	
2025-03-22 11:45:00	0	3	8	0	0	11	5	45	3	0	0	53	3	6	5	0	0	14	7	65	1	0	0	73	151	613
2025-03-22 12:00:00	2	4	0	0	0	6	5	56	3	0	0	64	0	3	2	0	0	5	4	53	1	0	0	58	133	609
2025-03-22 12:15:00	1	8	1	0	0	10	1	47	1	0	0	49	1	3	4	0	0	8	10	45	1	0	0	56	123	579
2025-03-22 12:30:00	0	9	5	0	0	14	1	62	0	0	0	63	3	3	4	0	0	10	4	56	0	0	0	60	147	554
2025-03-22 12:45:00	3	3	3	0	0	9	3	46	2	0	0	51	2	1	5	0	0	8	8	66	1	0	0	75	143	546
2025-03-22 13:00:00	2	11	3	0	0	16	3	57	2	0	0	62	2	5	3	0	0	10	8	64	4	0	0	76	164	577
2025-03-22 13:15:00	0	2	3	0	0	5	2	49	6	0	0	57	3	8	7	0	0	18	5	56	2	0	0	63	143	597
2025-03-22 13:30:00	1	5	7	0	0	13	2	46	5	0	0	53	3	6	6	0	0	15	7	65	4	0	0	76	157	607
2025-03-22 13:45:00	1	4	0	0	0	5	3	59	2	0	0	64	2	8	7	0	0	17	6	58	1	0	0	65	151	615
2025-03-22 14:00:00	1	4	1	0	0	6	6	92	2	0	0	100	0	3	6	0	0	9	3	67	2	0	0	72	187	638
2025-03-22 14:15:00	0	3	3	0	0	6	3	54	1	0	0	58	0	7	8	0	0	15	7	47	0	0	0	54	133	628
2025-03-22 14:30:00	4	2	1	0	0	7	4	67	2	0	0	73	3	3	4	0	0	10	7	53	1	0	0	61	151	622
2025-03-22 14:45:00	3	2	2	0	0	7	3	55	1	0	0	59	3	4	7	0	0	14	4	60	0	0	0	64	144	615
2025-03-22 15:00:00	1	7	0	0	0	8	5	55	3	0	0	63	1	11	7	0	0	19	6	54	0	0	0	60	150	578
2025-03-22 15:15:00	0	6	3	0	0	9	1	64	2	0	0	67	5	7	8	0	0	20	6	71	0	0	0	77	173	618
2025-03-22 15:30:00	1	2	1	0	0	4	2	63	1	0	0	66	7	5	13	0	0	25	7	56	0	0	0	63	158	625
2025-03-22 15:45:00	1	4	2	0	0	7	4	69	1	0	0	74	1	10	9	0	0	20	6	62	1	0	0	69	170	651
2025-03-22 16:00:00	1	2	4	0	0	7	3	62	2	0	0	67	0	6	12	0	0	18	6	59	2	0	0	67	159	660
2025-03-22 16:15:00	2	1	2	0	0	5	0	58	6	0	0	64	2	6	2	0	0	10	3	67	0	0	0	70	149	636
2025-03-22 16:30:00	2	6	3	0	0	11	1	48	1	0	0	50	5	4	11	0	0	20	6	61	1	0	0	68	149	627
2025-03-22 16:45:00	0	3	1	0	0	4	3	67	0	0	0	70	0	8	7	0	0	15	9	68	0	0	0	77	166	623
2025-03-22 17:00:00	1	5	1	0	0	7	2	51	2	0	0	55	3	5	9	0	0	17	3	47	3	0	0	53	132	596
2025-03-22 17:15:00	1	3	1	0	0	5	0	68	6	0	0	74	3	5	4	0	0	12	10	57	1	0	0	68	159	606
2025-03-22 17:30:00	2	0	2	0	0	4	3	64	0	0	0	67	1	5	10	0	0	16	4	52	2	0	0	58	145	602
2025-03-22 17:45:00	0	5	1	0	0	6	2	52	1	0	0	55	4	6	3	0	0	13	4	47	2	0	0	53	127	563
Grand Total	32	124	62	0	0	218	80	1627	58	0	0	1765	61	149	176	0	0	386	177	1647	33	0	0	1857	**4226**	-
Approach%	14.7%	56.9%	28.4%	0%		-	4.5%	92.2%	3.3%	0%		-	15.8%	38.6%	45.6%	0%		-	9.5%	88.7%	1.8%	0%		-	**-**	-
Totals %	0.8%	2.9%	1.5%	0%		5.2%	1.9%	38.5%	1.4%	0%		41.8%	1.4%	3.5%	4.2%	0%		9.1%	4.2%	39%	0.8%	0%		43.9%	**-**	-
Heavy	6	3	3	0		-	5	28	17	0		-	3	1	12	0		-	31	38	4	0		-	**-**	-
Heavy %	18.8%	2.4%	4.8%	0%		-	6.3%	1.7%	29.3%	0%		-	4.9%	0.7%	6.8%	0%		-	17.5%	2.3%	12.1%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

NexTrans
SUITE 201 520 INDUSTRIAL PARKWAY SOUTH
AURORA ONTARIO, L4G 6W8
CANADA

Peak Hour: 03:15 PM - 04:15 PM Weather: Overcast Clouds (4 °C)

Start Time	Southbound HUMBER STATION RD						Westbound KING ST						Northbound HUMBER STATION RD						Eastbound 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	
2025-03-22 15:15:00	0	6	3	0	0	9	1	64	2	0	0	67	5	7	8	0	0	20	6	71	0	0	0	77	173
2025-03-22 15:30:00	1	2	1	0	0	4	2	63	1	0	0	66	7	5	13	0	0	25	7	56	0	0	0	63	158
2025-03-22 15:45:00	1	4	2	0	0	7	4	69	1	0	0	74	1	10	9	0	0	20	6	62	1	0	0	69	170
2025-03-22 16:00:00	1	2	4	0	0	7	3	62	2	0	0	67	0	6	12	0	0	18	6	59	2	0	0	67	159
Grand Total	3	14	10	0	0	27	10	258	6	0	0	274	13	28	42	0	0	83	25	248	3	0	0	276	**660**
Approach%	11.1%	51.9%	37%	0%		-	3.6%	94.2%	2.2%	0%		-	15.7%	33.7%	50.6%	0%		-	9.1%	89.9%	1.1%	0%		-	**-**
Totals %	0.5%	2.1%	1.5%	0%		4.1%	1.5%	39.1%	0.9%	0%		41.5%	2%	4.2%	6.4%	0%		12.6%	3.8%	37.6%	0.5%	0%		41.8%	**-**
PHF	0.75	0.58	0.63	0		0.75	0.63	0.93	0.75	0		0.93	0.46	0.7	0.81	0		0.83	0.89	0.87	0.38	0		0.9	0.95
Heavy	2	0	0	0		2	0	3	0	0		3	1	0	5	0		6	3	6	0	0		9	20
Heavy %	66.7%	0%	0%	0%		7.4%	0%	1.2%	0%	0%		1.1%	7.7%	0%	11.9%	0%		7.2%	12%	2.4%	0%	0%		3.3%	3%
Lights	1	14	10	0		25	10	255	6	0		271	12	28	37	0		77	22	242	3	0		267	640
Lights %	33.3%	100%	100%	0%		92.6%	100%	98.8%	100%	0%		98.9%	92.3%	100%	88.1%	0%		92.8%	88%	97.6%	100%	0%		96.7%	97%
Single-Unit Trucks	2	0	0	0		2	0	2	0	0		2	0	0	2	0		2	1	1	0	0		2	8
Single-Unit Trucks %	66.7%	0%	0%	0%		7.4%	0%	0.8%	0%	0%		0.7%	0%	0%	4.8%	0%		2.4%	4%	0.4%	0%	0%		0.7%	1.2%
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0.2%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	1	0	3	0		4	2	4	0	0		6	11
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	7.7%	0%	7.1%	0%		4.8%	8%	1.6%	0%	0%		2.2%	1.7%

Peak Hour: 03:15 PM - 04:15 PM **Weather: Overcast Clouds (4 °C)**



REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**March 12, 2025**		**Prepared Date**	**March 17, 2025**
Database Rev	**iNET**		**Completed By**	**N.R.L**
Timing Card / Field rev	**-**		**Checked By**	**N.T**

Location	**King Street and Humber Station Road**

Phase #	**Street Name - Direction**	**Vehicle Minimum (s)**	**Pedestrian Minimum (s)**		**Amber (s)**	**All Red (s)**	**TIME PERIOD (s) (Max=Green)**		
			WALK	**FDWALK**			**AM MAX**	**OFF MAX**	**PM MAX**
1	Not In Use	-	-	-	-	-	-	-	-
2	King Street - EB / WB	12	8	7	5.4	2.0	40	40	40
3	Not In Use	-	-	-	-	-	-	-	-
4	Humber Station Road - NB / SB	8	8	7	4.0	2.4	25	25	25
5									
6									
7									
8									

System Control
Yes

Semi-Actuated Mode
Yes

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

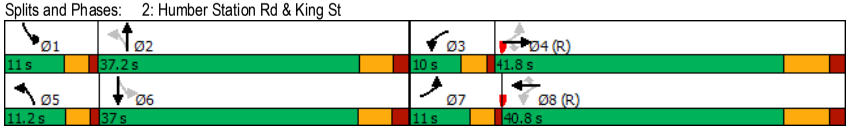
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97		0.88	0.96		0.88	0.97	0.99		0.93	0.96	
Frt			0.850			0.850		0.987			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1570	1590	1795	1585	1521	1732	0	1649	1707	0
Flt Permitted	0.275			0.332			0.166			0.536		
Satd. Flow (perm)	484	1812	1378	533	1795	1392	258	1732	0	861	1707	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			122		5			27	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	79	448	345	73	485	78	67	183	122	324
Future Volume (vph)	79	448	345	73	485	78	67	183	122	324
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.0	11.0	30.2
Total Split (s)	11.0	41.8	41.8	10.0	40.8	40.8	11.2	37.2	11.0	37.0
Total Split (%)	11.0%	41.8%	41.8%	10.0%	40.8%	40.8%	11.2%	37.2%	11.0%	37.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min	None	Min
Act Effct Green (s)	48.3	39.3	39.3	47.1	38.7	38.7	36.7	27.6	38.0	29.7
Actuated g/C Ratio	0.48	0.39	0.39	0.47	0.39	0.39	0.37	0.28	0.38	0.30
v/c Ratio	0.25	0.63	0.53	0.23	0.70	0.13	0.36	0.42	0.32	0.93
Control Delay	16.3	31.7	16.1	16.4	35.0	1.8	22.3	30.6	20.1	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	31.7	16.1	16.4	35.0	1.8	22.3	30.6	20.1	59.1
LOS	B	C	B	B	D	A	C	C	C	E
Approach Delay		24.1			28.8			28.5		51.3
Approach LOS		C			C			C		D

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 85		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.93		
Intersection Signal Delay: 32.8	Intersection LOS: C	
Intersection Capacity Utilization 80.7%	ICU Level of Service D	
Analysis Period (min) 15		

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



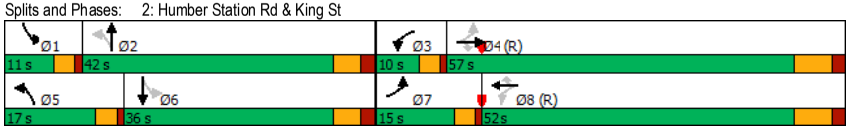
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.86	0.97		0.86	0.96	0.98		0.97	0.95	
Frt			0.850			0.850		0.980			0.946	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1865	1555	1379	1812	1526	1697	1795	0	1713	1691	0
Flt Permitted	0.170			0.303			0.196			0.167		
Satd. Flow (perm)	307	1865	1334	425	1812	1309	335	1795	0	291	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			175		7			22	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	153	560	178	18	566	167	236	445	66	237
Future Volume (vph)	153	560	178	18	566	167	236	445	66	237
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.2	11.0	30.2
Total Split (s)	15.0	57.0	57.0	10.0	52.0	52.0	17.0	42.0	11.0	36.0
Total Split (%)	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	14.2%	35.0%	9.2%	30.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.2	1.0	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None
Act Effct Green (s)	63.7	56.3	56.3	55.5	46.2	46.2	48.3	37.1	37.5	28.4
Actuated g/C Ratio	0.53	0.47	0.47	0.46	0.38	0.38	0.40	0.31	0.31	0.24
v/c Ratio	0.55	0.64	0.25	0.07	0.81	0.27	0.81	0.92	0.38	0.89
Control Delay	22.6	29.9	7.1	15.0	44.5	4.5	48.2	62.6	28.9	65.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	29.9	7.1	15.0	44.5	4.5	48.2	62.6	28.9	65.1
LOS	C	C	A	B	D	A	D	E	C	E
Approach Delay		24.1			34.9			58.0		59.6
Approach LOS		C			C			E		E

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 85		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.92		
Intersection Signal Delay: 41.4	Intersection LOS: D	
Intersection Capacity Utilization 91.3%	ICU Level of Service F	
Analysis Period (min) 15		

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



Date: February 10, 2025
Requestor: John Nhan, NexTrans Consulting Engineers
Request Type: Growth Rate Data Request
Location: King Street at Humber Station Road

John Nhan,

See below the forecasted compound annual growth rate values for King Street at Humber Station Road.

2011 to 2021	2021 to 2031	2031 to 2041
1.0%	1.0%	1.0%

Please note that these growth rates do not account for the accelerated population and employment targets set out by Bill 23 and are estimated using several sources including socioeconomic data and results from the Region of Peel's Travel Demand Forecasting Model. It is important to exercise professional judgment when using these values.

If you require further assistance, please contact me at transportationplanningdata@peelregion.ca

Regards,

Shuvangkor Shusmoy Roy
Intermediate Planner, Transportation Planning
Transportation Division | Public Works | Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9

TOWN OF CALEDON
PLANNING
RECEIVED

Jun 15, 2020

Mark Engineering

Traffic Impact Study

2473903 Ontario Inc.
8186 King Street
Bolton, Town of Caledon

File: 201538

July 2016
Modified May 2017
Updated June 2018 & March 2020

TOWN OF CALEDON
PLANNING
RECEIVED

Jun 15, 2020

1. INTRODUCTION

2473903 Ontario Inc. is proposing to develop the site at 8168 King Street to provide for the retailing of stone and related products. The adjacent site at 8144 King Street is the headquarters for the Banas Stones company, which is a major natural stone supplier and exporter and provides wholesale stones and related products. The location of the site is shown in the following figure:

Figure 1.1 – Site Location [Not to scale]

1.1 History

The preliminary study did not include turning movements at the existing Banas Stones and Alliance Agri Turf accesses. It did include 2016 counts for the King Street intersections with Emil Kolb Parkway and Humber Station Road. The traffic counts at the King Street/Harvest Moon Drive intersection had been done in 2013, before the roundabout at the King Street/Emil Kolb Parkway was constructed. This study included turning movement counts at the two existing accesses and at the King Street/Harvest Moon Drive intersection. These counts were done on Friday, June 24, 2016 and Saturday, June 25, 2017. The Saturday counts were done since it was felt that Saturday traffic to the Banas Stones site could be significant. These counts also represent the summer peak period for the existing developments.

TOWN OF CALEDON
PLANNING
RECEIVED

Jun 15, 2020

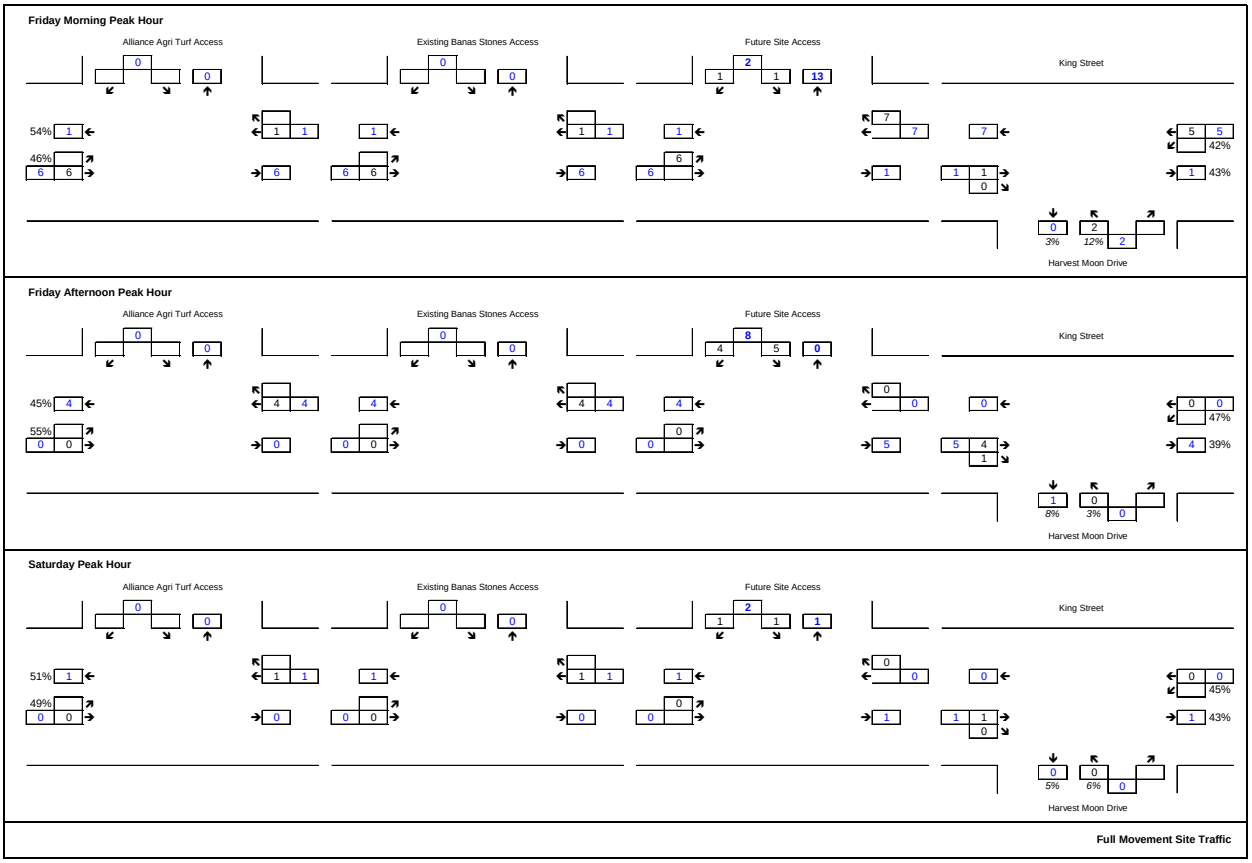


Diagram 3 – Site Traffic Volumes Full Movement Access

Figure 1-1: Study Area

2. Existing Transportation System

The following section documents features of the existing transportation infrastructure in the study area, including the surrounding road network, transit service, pedestrian facilities, and cycling facilities.

2.1 Existing Road Network

King Street (RR 9) is an east-west major arterial road under the jurisdiction of Peel Region. Under Schedule J *Long Range Road Network* of the Town's Official Plan, the road is classified as a Medium Capacity Arterial and under Schedule K *Road Right-of-Way Widths*, a 30-metre right-of-way is identified.

Within the vicinity of the subject site, King Street has a two-lane cross-section with no shoulder. The posted speed is 80 km/h within the study area but reduces to 60 km/h entering Bolton a few hundred metres east of Humber Station Road.

Humber Station Road is a local road under the jurisdiction of the Town of Caledon. It is classified as a Collector Road under Schedule J of the Town's Official Plan, with Schedule K identifying a right-of-way width of 26 metres. Within the vicinity of the subject site, it provides one lane in each direction. There is no posted speed within the study area (assumed as 60 km/h).

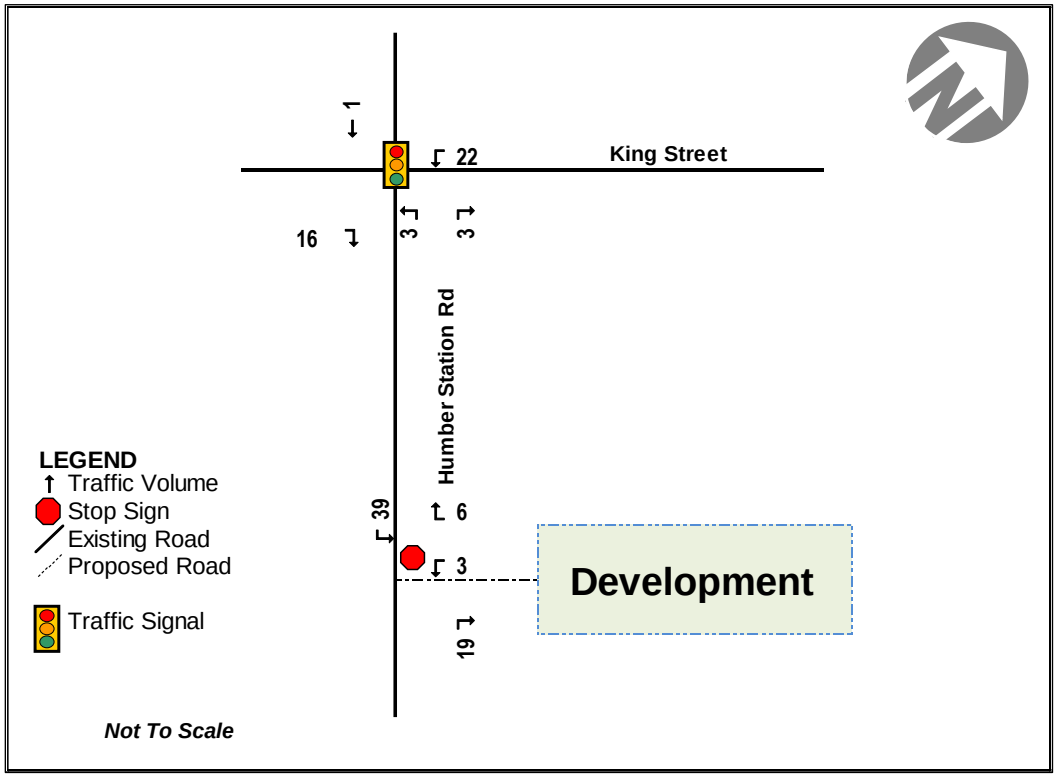


Figure 7-2: Site Traffic AM Peak Hour

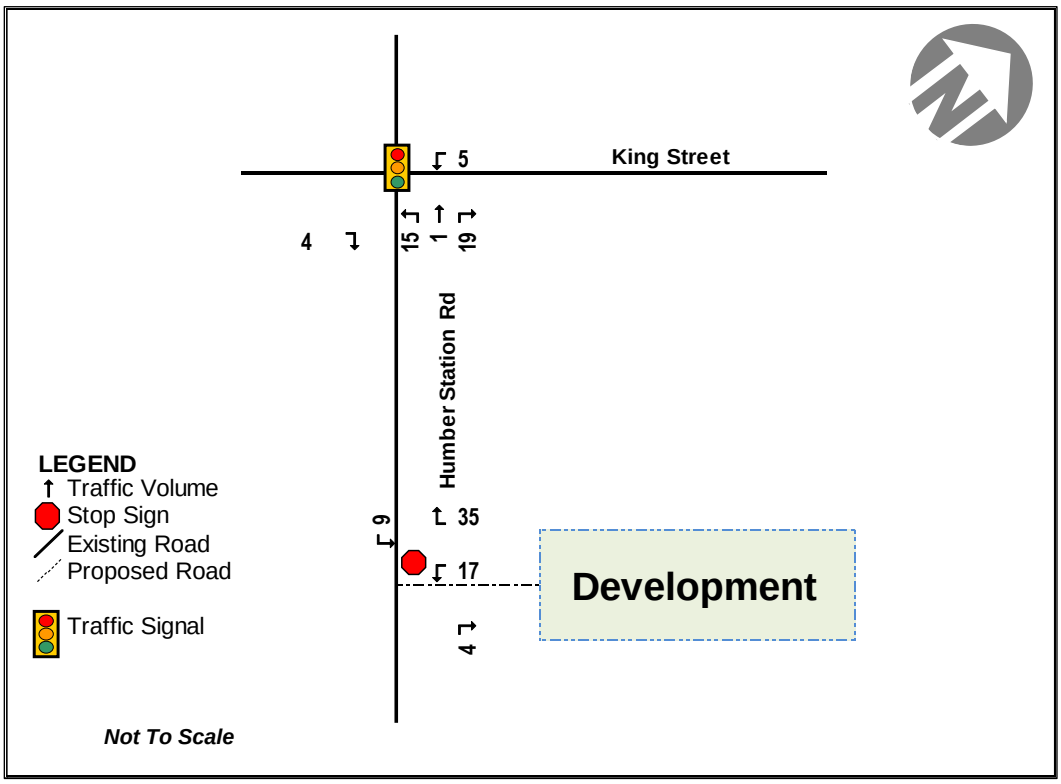
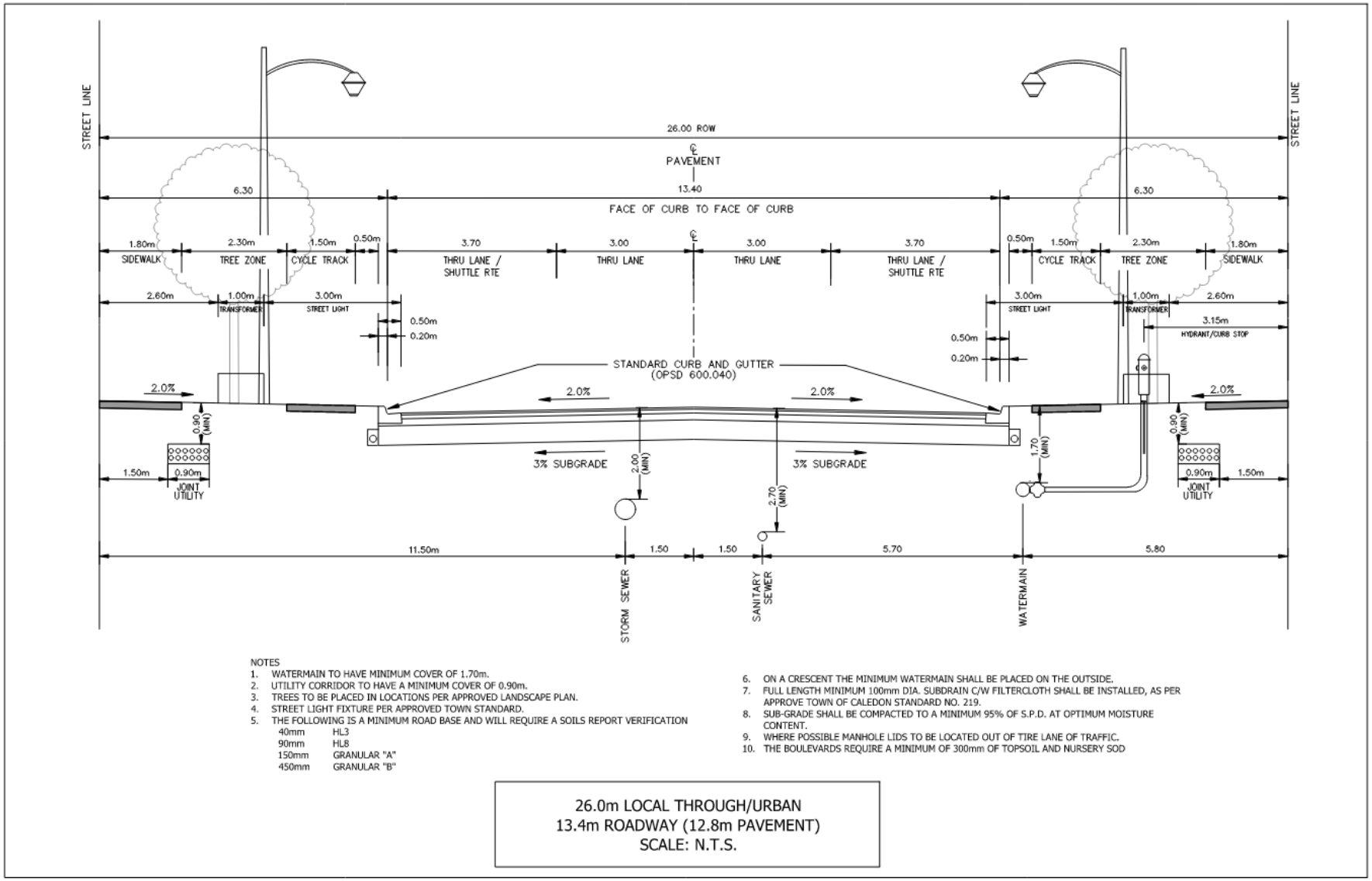


Figure 7-3: Site Traffic PM Peak Hour



NOTES

1. WATERMAIN TO HAVE MINIMUM COVER OF 1.70m.
2. UTILITY CORRIDOR TO HAVE A MINIMUM COVER OF 0.90m.
3. TREES TO BE PLACED IN LOCATIONS PER APPROVED LANDSCAPE PLAN.
4. STREET LIGHT FIXTURE PER APPROVED TOWN STANDARD.
5. THE FOLLOWING IS A MINIMUM ROAD BASE AND WILL REQUIRE A SOILS REPORT VERIFICATION

40mm	HL3
90mm	HL8
150mm	GRANULAR "A"
450mm	GRANULAR "B"

6. ON A CRESCENT THE MINIMUM WATERMAIN SHALL BE PLACED ON THE OUTSIDE.
7. FULL LENGTH MINIMUM 100mm DIA. SUBDRAIN C/W FILTERCLOTH SHALL BE INSTALLED, AS PER APPROVE TOWN OF CALEDON STANDARD NO. 219.
8. SUB-GRADE SHALL BE COMPACTED TO A MINIMUM 95% OF S.P.D. AT OPTIMUM MOISTURE CONTENT.
9. WHERE POSSIBLE MANHOLE LIDS TO BE LOCATED OUT OF TIRE LANE OF TRAFFIC.
10. THE BOULEVARDS REQUIRE A MINIMUM OF 300mm OF TOPSOIL AND NURSERY SOD

26.0m LOCAL THROUGH/URBAN
13.4m ROADWAY (12.8m PAVEMENT)
SCALE: N.T.S.

Source: Urbantech

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

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FIGURE 12 PHASE 2 LANE CONFIGURATIONS

CALEDON STATION SECONDARY PLAN

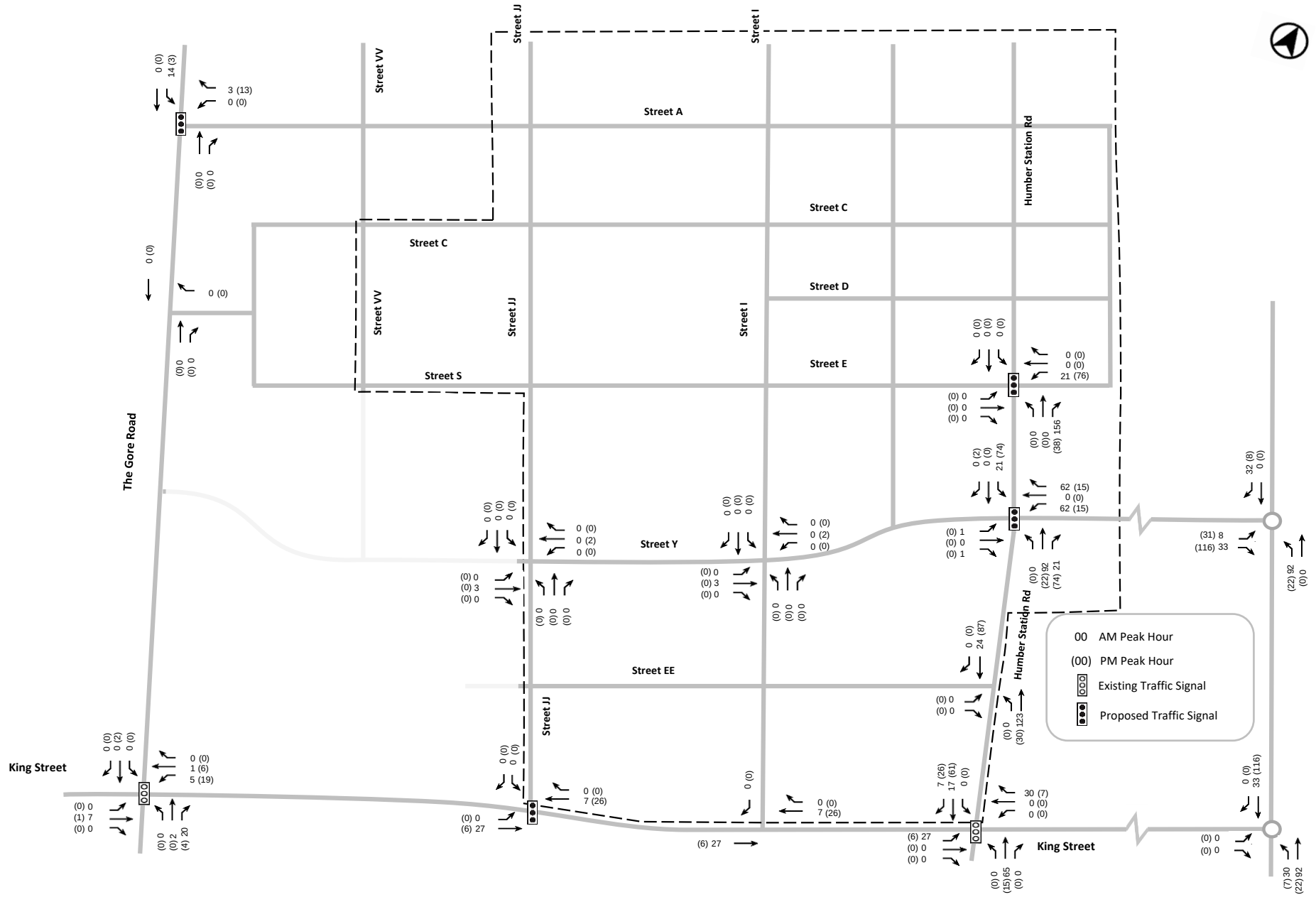

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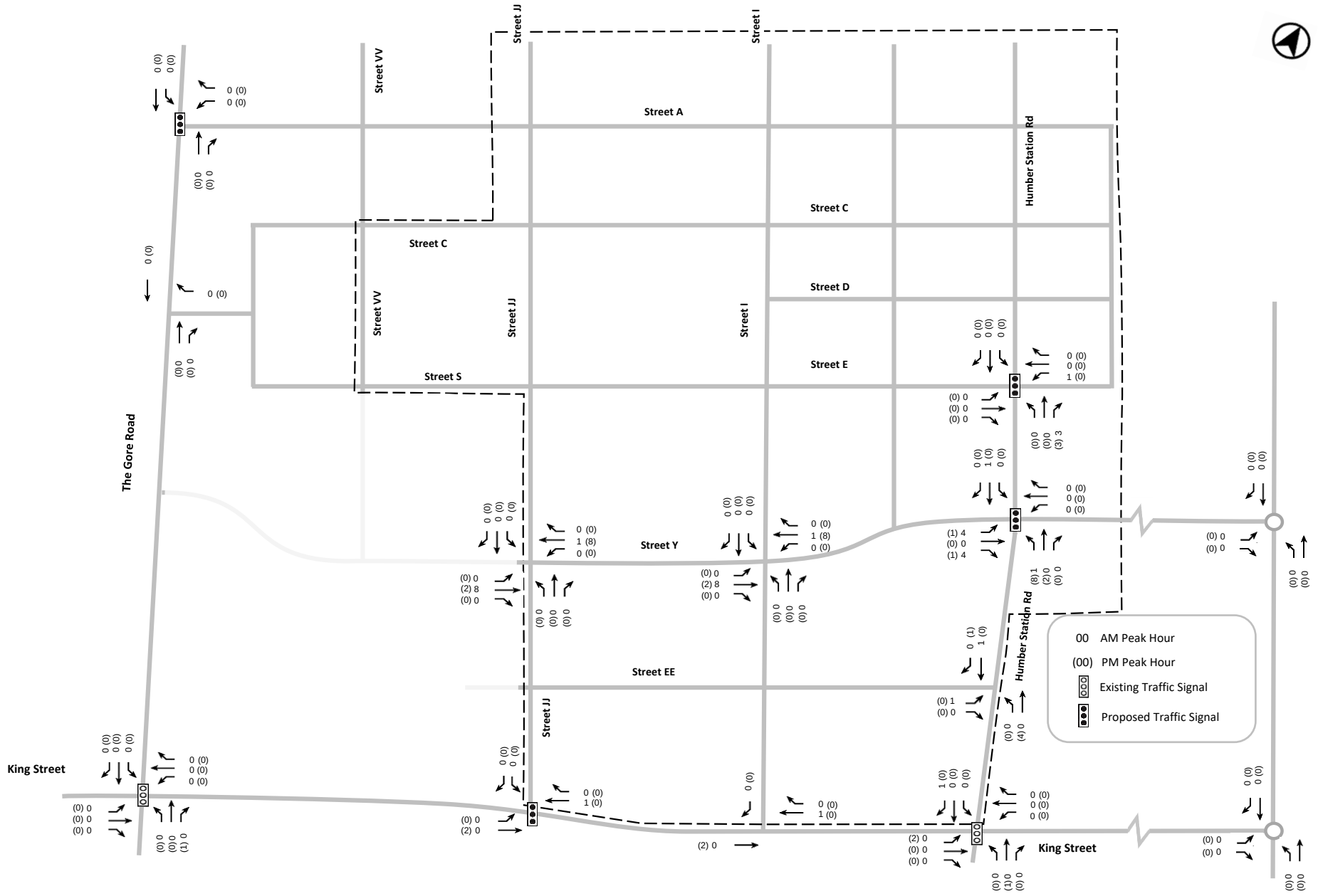
FIGURE 15 PHASE 2 GO STATION TRAFFIC VOLUMES (2031) - EXCLUDING SITE-RELATED GO TRIPS

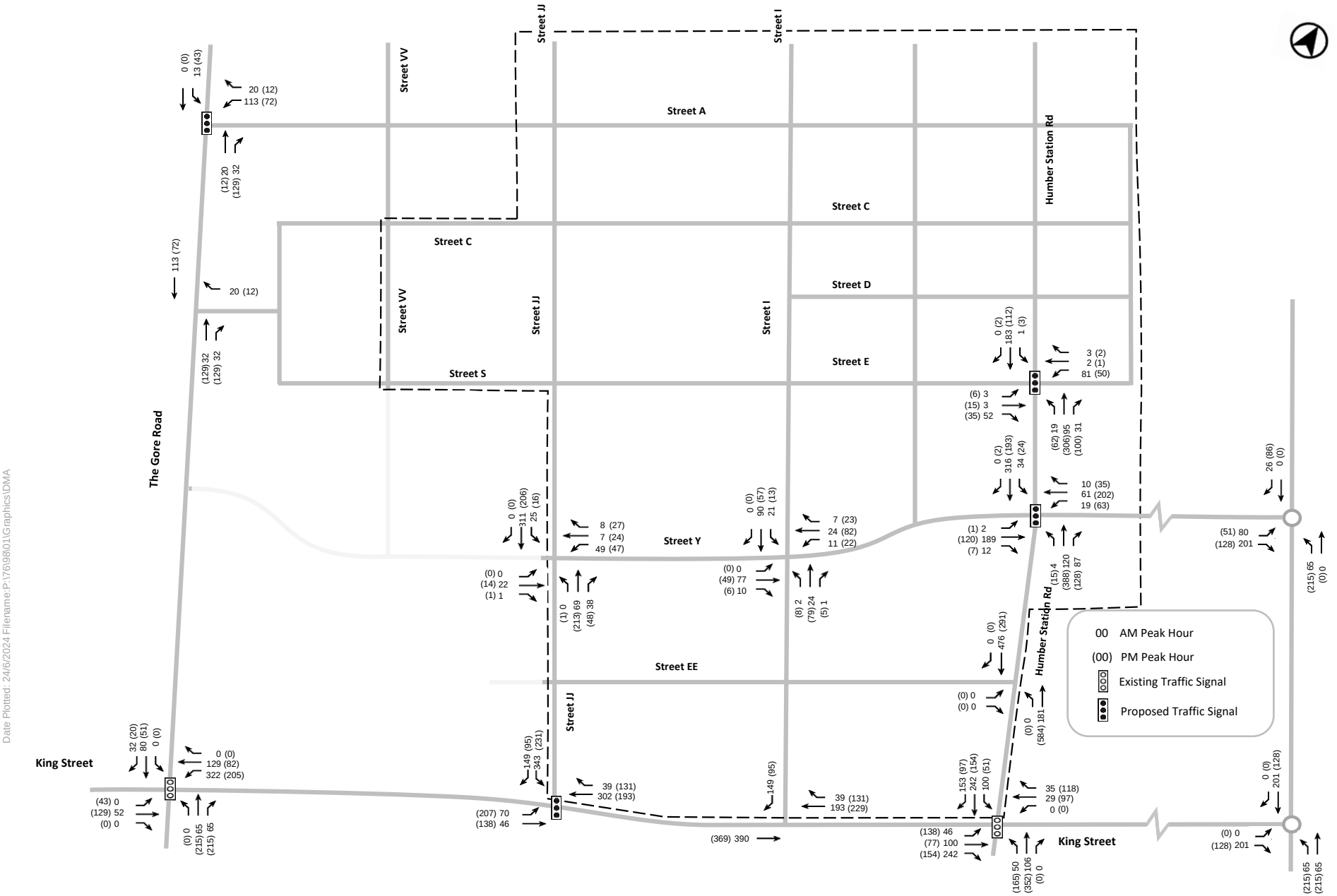
CALEDON STATION SECONDARY PLAN



Date Plotted: 24/6/2024 Filename:P:\76\19801\Graphics\DMA

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

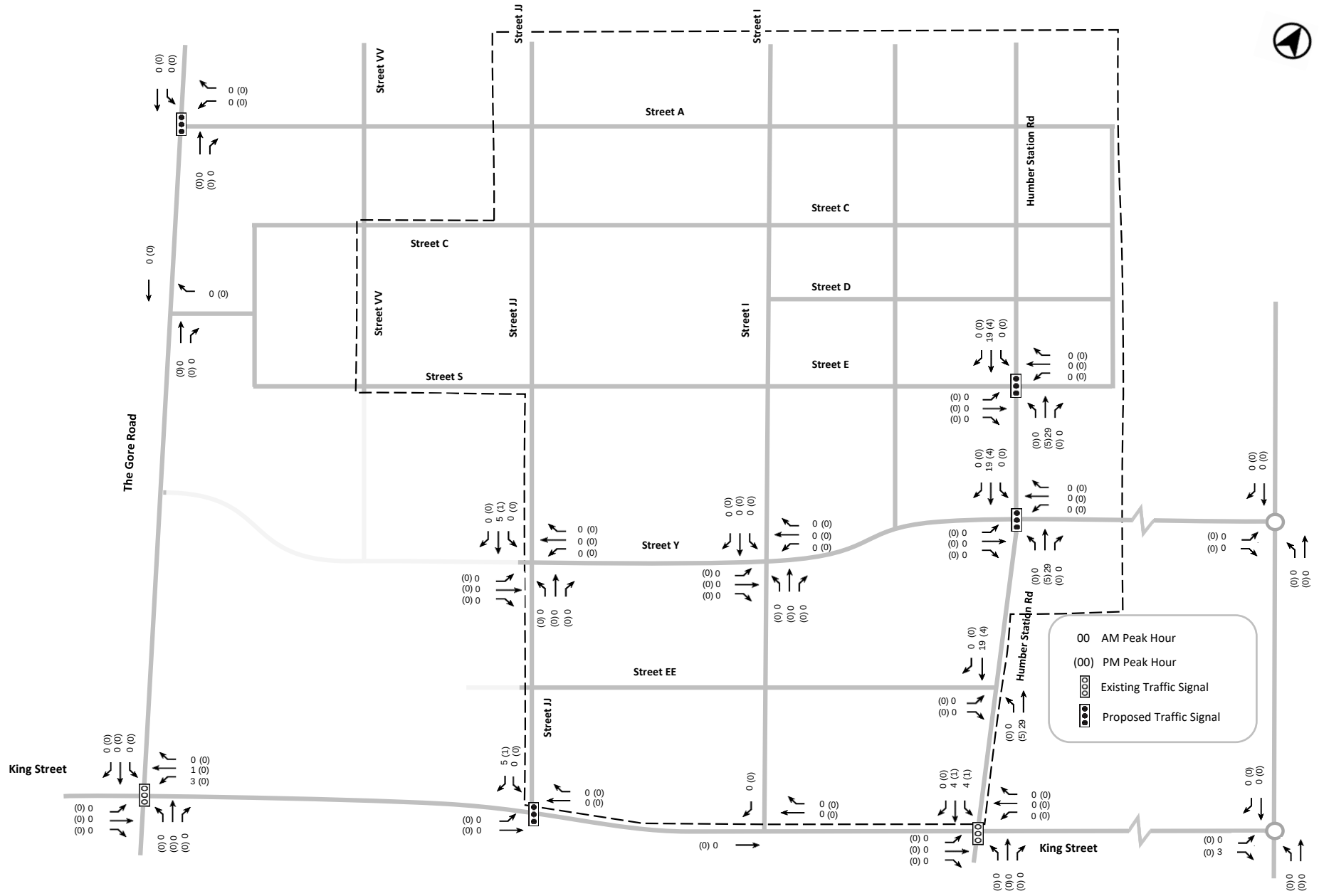
CALEDON STATION SECONDARY PLAN



Date Plotted: 24/6/2024 Filename:P:\7619801\Graphics\DMA

FIGURE 24 PHASE 2 RESIDENTIAL SITE TRAFFIC VOLUMES (2031)

CALEDON STATION SECONDARY PLAN



Date Plotted: 24/6/2024 Filename:P:\7619801\Graphics\DMA

FIGURE 25 PHASE 2 SCHOOL SITE TRAFFIC VOLUMES (2031)

CALEDON STATION SECONDARY PLAN

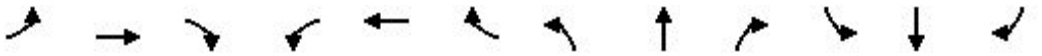
Appendix D – Synchro and SimTraffic Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	330	88	47	371	9	16	9	16	19	78	6
Future Volume (vph)	8	330	88	47	371	9	16	9	16	19	78	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
Frt		0.972			0.997			0.947			0.992	
Flt Protected		0.999			0.995			0.981			0.991	
Satd. Flow (prot)	0	1676	0	0	1771	0	0	1235	0	0	1718	0
Flt Permitted		0.992			0.919			0.874			0.924	
Satd. Flow (perm)	0	1665	0	0	1636	0	0	1100	0	0	1602	0
Satd. Flow (RTOR)		24			2			16			4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	9%	9%	0%	6%	0%	50%	0%	56%	26%	1%	33%
Adj. Flow (vph)	8	340	91	48	382	9	16	9	16	20	80	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	439	0	0	439	0	0	41	0	0	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	47.4	47.4		47.4	47.4		31.4	31.4		31.4	31.4	
Total Split (%)	60.2%	60.2%		60.2%	60.2%		39.8%	39.8%		39.8%	39.8%	
Yellow Time (s)	5.4	5.4		5.4	5.4		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.4			7.4			6.4			6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		47.7			47.7			9.9			9.9	
Actuated g/C Ratio		0.71			0.71			0.15			0.15	
v/c Ratio		0.37			0.38			0.23			0.44	
Control Delay		6.4			6.9			20.1			30.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.4			6.9			20.1			30.5	
LOS		A			A			C			C	
Approach Delay		6.4			6.9			20.1			30.5	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		21.1			22.7			2.8			12.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		43.7			46.1			10.4			24.7	
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)												
Base Capacity (vph)		1196			1169			423			604	
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			0.38			0.10			0.18	

Intersection Summary	
Cycle Length: 78.8	
Actuated Cycle Length: 66.8	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Humber Station Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	330	88	47	371	9	16	9	16	19	78	6
Future Volume (veh/h)	8	330	88	47	371	9	16	9	16	19	78	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	8	340	91	48	382	9	16	9	16	20	80	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Cap, veh/h	65	874	230	139	1013	23	130	73	77	95	178	12
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	8	1336	352	113	1549	35	397	609	644	207	1486	102
Grp Volume(v), veh/h	439	0	0	439	0	0	41	0	0	106	0	0
Grp Sat Flow(s),veh/h/ln	1696	0	0	1697	0	0	1651	0	0	1795	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	0.0	6.8	0.0	0.0	1.3	0.0	0.0	3.3	0.0	0.0
Prop In Lane	0.02		0.21	0.11		0.02	0.39		0.39	0.19		0.06
Lane Grp Cap(c), veh/h	1170	0	0	1175	0	0	280	0	0	285	0	0
V/C Ratio(X)	0.38	0.00	0.00	0.37	0.00	0.00	0.15	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1170	0	0	1175	0	0	724	0	0	791	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	0.0	0.0	4.8	0.0	0.0	24.2	0.0	0.0	25.1	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.9	0.0	0.0	0.2	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	0.0	0.0	5.7	0.0	0.0	24.5	0.0	0.0	25.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		439			439			41			106	
Approach Delay, s/veh		5.8			5.7			24.5			25.9	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.4		13.7		47.4		13.7				
Change Period (Y+Rc), s		7.4		6.4		7.4		6.4				
Max Green Setting (Gmax), s		40.0		25.0		40.0		25.0				
Max Q Clear Time (g_c+I1), s		9.3		3.3		8.8		5.3				
Green Ext Time (p_c), s		3.7		0.2		3.8		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	330	88	47	371	9	16	9	16	19	78	6
Future Volume (veh/h)	8	330	88	47	371	9	16	9	16	19	78	6
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	8	340	91	48	382	9	16	9	16	20	80	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	65	874	230	139	1013	23	130	73	77	95	178	12
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.12	0.12	0.12	0.12	0.12	0.12
Unsig. Movement Delay												
Ln Grp Delay, s/veh	5.8	0.0	0.0	5.7	0.0	0.0	24.5	0.0	0.0	25.9	0.0	0.0
Ln Grp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		439			439			41			106	
Approach Delay, s/veh		5.8			5.7			24.5			25.9	
Approach LOS		A			A			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		8.0		8.0		8.0		8.0
Phs Duration (G+Y+Rc), s		47.4		13.7		47.4		13.7
Change Period (Y+Rc), s		7.4		6.4		7.4		6.4
Max Green (Gmax), s		40.0		25.0		40.0		25.0
Max Allow Headway (MAH), s		5.8		5.9		5.8		5.7
Max Q Clear (g_c+I1), s		9.3		3.3		8.8		5.3
Green Ext Time (g_e), s		3.7		0.2		3.8		0.5
Prob of Phs Call (p_c)		1.00		0.92		1.00		0.92
Prob of Max Out (p_x)		0.00		0.00		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		8		397		113		207

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1336		609		1549		1486

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		352		644		35		102

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L+T+R		L+T+R		L+T+R		L+T+R

Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	439	0	41	0	439	0	106
Grp Sat Flow (s), veh/h/ln	0	1696	0	1651	0	1697	0	1795
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Cycle Q Clear Time (g_c), s	0.0	7.3	0.0	1.3	0.0	6.8	0.0	3.3
Perm LT Sat Flow (s_l), veh/h/ln	0	1009	0	1332	0	972	0	1408
Shared LT Sat Flow (s_sh), veh/h/ln	0	1765	0	1864	0	1801	0	1868
Perm LT Eff Green (g_p), s	0.0	40.0	0.0	7.3	0.0	40.0	0.0	7.3
Perm LT Serve Time (g_u), s	0.0	33.2	0.0	4.1	0.0	32.7	0.0	6.1
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Time to First Blk (g_f), s	0.0	29.3	0.0	2.6	0.0	14.7	0.0	2.7
Serve Time pre Blk (g_fs), s	0.0	7.3	0.0	1.3	0.0	6.8	0.0	2.7
Prop LT Inside Lane (P_L)	0.00	0.02	0.00	0.39	0.00	0.11	0.00	0.19
Lane Grp Cap (c), veh/h	0	1170	0	280	0	1175	0	285
V/C Ratio (X)	0.00	0.38	0.00	0.15	0.00	0.37	0.00	0.37
Avail Cap (c_a), veh/h	0	1170	0	724	0	1175	0	791
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	4.9	0.0	24.2	0.0	4.8	0.0	25.1
Incr Delay (d2), s/veh	0.0	0.9	0.0	0.2	0.0	0.9	0.0	0.8
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	5.8	0.0	24.5	0.0	5.7	0.0	25.9
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.25	0.00	0.03	0.00	0.45	0.00	0.05
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.21	0.00	0.39	0.00	0.02	0.00	0.06
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

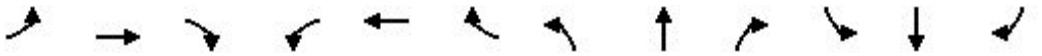
Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	387	21	17	491	44	73	114	69	12	24	10
Future Volume (vph)	10	387	21	17	491	44	73	114	69	12	24	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.989			0.964			0.971	
Flt Protected		0.999			0.998			0.986			0.987	
Satd. Flow (prot)	0	1789	0	0	1708	0	0	1721	0	0	1694	0
Flt Permitted		0.985			0.981			0.888			0.903	
Satd. Flow (perm)	0	1764	0	0	1679	0	0	1550	0	0	1550	0
Satd. Flow (RTOR)		5			8			25			10	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	10%	4%	5%	35%	6%	27%	6%	4%	1%	8%	4%	10%
Adj. Flow (vph)	10	399	22	18	506	45	75	118	71	12	25	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	431	0	0	569	0	0	264	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	47.4	47.4		47.4	47.4		31.4	31.4		31.4	31.4	
Total Split (%)	60.2%	60.2%		60.2%	60.2%		39.8%	39.8%		39.8%	39.8%	
Yellow Time (s)	5.4	5.4		5.4	5.4		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.4			7.4			6.4			6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		41.2			41.2			16.1			16.1	
Actuated g/C Ratio		0.58			0.58			0.23			0.23	
v/c Ratio		0.42			0.58			0.71			0.13	
Control Delay		10.9			13.7			33.7			17.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.9			13.7			33.7			17.9	
LOS		B			B			C			B	
Approach Delay		10.9			13.7			33.7			17.9	
Approach LOS		B			B			C			B	
Queue Length 50th (m)		29.5			44.4			30.2			4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		63.1			95.2			53.5			11.6	
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)												
Base Capacity (vph)		1023			975			562			553	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.42			0.58			0.47			0.08	

Intersection Summary	
Cycle Length: 78.8	
Actuated Cycle Length: 71.1	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Humber Station Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	10	387	21	17	491	44	73	114	69	12	24	10
Future Volume (veh/h)	10	387	21	17	491	44	73	114	69	12	24	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	10	399	22	18	506	45	75	118	71	12	25	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Cap, veh/h	62	1010	55	68	950	83	142	168	89	120	216	73
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	13	1704	92	22	1604	140	364	828	438	263	1064	359
Grp Volume(v), veh/h	431	0	0	569	0	0	264	0	0	47	0	0
Grp Sat Flow(s),veh/h/ln	1809	0	0	1765	0	0	1630	0	0	1686	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.5	0.0	0.0	12.9	0.0	0.0	10.3	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.02		0.05	0.03		0.08	0.28		0.27	0.26		0.21
Lane Grp Cap(c), veh/h	1127	0	0	1101	0	0	399	0	0	409	0	0
V/C Ratio(X)	0.38	0.00	0.00	0.52	0.00	0.00	0.66	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	1127	0	0	1101	0	0	667	0	0	670	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	0.0	0.0	8.2	0.0	0.0	25.5	0.0	0.0	22.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.7	0.0	0.0	1.9	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	0.0	0.0	9.9	0.0	0.0	27.3	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		431			569			264			47	
Approach Delay, s/veh		8.3			9.9			27.3			22.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.4		20.1		47.4		20.1				
Change Period (Y+Rc), s		7.4		6.4		7.4		6.4				
Max Green Setting (Gmax), s		40.0		25.0		40.0		25.0				
Max Q Clear Time (g_c+I1), s		10.5		12.3		14.9		3.5				
Green Ext Time (p_c), s		3.5		1.4		4.9		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	387	21	17	491	44	73	114	69	12	24	10
Future Volume (veh/h)	10	387	21	17	491	44	73	114	69	12	24	10
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	10	399	22	18	506	45	75	118	71	12	25	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	62	1010	55	68	950	83	142	168	89	120	216	73
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.20	0.20	0.20	0.20	0.20	0.20
Unsig. Movement Delay												
Ln Grp Delay, s/veh	8.3	0.0	0.0	9.9	0.0	0.0	27.3	0.0	0.0	22.2	0.0	0.0
Ln Grp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		431			569			264			47	
Approach Delay, s/veh		8.3			9.9			27.3			22.2	
Approach LOS		A			A			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		8.0		8.0		8.0		8.0
Phs Duration (G+Y+Rc), s		47.4		20.1		47.4		20.1
Change Period (Y+Rc), s		7.4		6.4		7.4		6.4
Max Green (Gmax), s		40.0		25.0		40.0		25.0
Max Allow Headway (MAH), s		5.7		5.8		5.8		5.9
Max Q Clear (g_c+I1), s		10.5		12.3		14.9		3.5
Green Ext Time (g_e), s		3.5		1.4		4.9		0.2
Prob of Phs Call (p_c)		1.00		1.00		1.00		1.00
Prob of Max Out (p_x)		0.00		0.09		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		13		364		22		263

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1704		828		1604		1064

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		92		438		140		359

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L+T+R		L+T+R		L+T+R		L+T+R

Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	431	0	264	0	569	0	47
Grp Sat Flow (s), veh/h/ln	0	1809	0	1630	0	1765	0	1686
Q Serve Time (g_s), s	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	8.5	0.0	10.3	0.0	12.9	0.0	1.5
Perm LT Sat Flow (s_l), veh/h/ln	0	870	0	1395	0	981	0	1213
Shared LT Sat Flow (s_sh), veh/h/ln	0	1839	0	1815	0	1808	0	1686
Perm LT Eff Green (g_p), s	0.0	40.0	0.0	13.7	0.0	40.0	0.0	13.7
Perm LT Serve Time (g_u), s	0.0	27.1	0.0	12.2	0.0	31.5	0.0	3.4
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	27.6	0.0	2.7	0.0	23.9	0.0	5.1
Serve Time pre Blk (g_fs), s	0.0	8.5	0.0	2.7	0.0	12.9	0.0	1.5
Prop LT Inside Lane (P_L)	0.00	0.02	0.00	0.28	0.00	0.03	0.00	0.26
Lane Grp Cap (c), veh/h	0	1127	0	399	0	1101	0	409
V/C Ratio (X)	0.00	0.38	0.00	0.66	0.00	0.52	0.00	0.11
Avail Cap (c_a), veh/h	0	1127	0	667	0	1101	0	670
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.3	0.0	25.5	0.0	8.2	0.0	22.0
Incr Delay (d2), s/veh	0.0	1.0	0.0	1.9	0.0	1.7	0.0	0.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.3	0.0	27.3	0.0	9.9	0.0	22.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.25	0.00	0.37	0.00	0.81	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.05	0.00	0.27	0.00	0.08	0.00	0.21
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	248	25	6	258	10	42	28	13	10	14	3
Future Volume (vph)	3	248	25	6	258	10	42	28	13	10	14	3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.995			0.978			0.986	
Flt Protected		0.999			0.999			0.975			0.981	
Satd. Flow (prot)	0	1803	0	0	1850	0	0	1669	0	0	1700	0
Flt Permitted		0.997			0.994			0.825			0.841	
Satd. Flow (perm)	0	1799	0	0	1841	0	0	1412	0	0	1457	0
Satd. Flow (RTOR)		9			4			13			3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	12%	0%	1%	0%	12%	0%	8%	0%	0%	67%
Adj. Flow (vph)	3	261	26	6	272	11	44	29	14	11	15	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	289	0	0	87	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	47.4	47.4		47.4	47.4		31.4	31.4		31.4	31.4	
Total Split (%)	60.2%	60.2%		60.2%	60.2%		39.8%	39.8%		39.8%	39.8%	
Yellow Time (s)	5.4	5.4		5.4	5.4		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.4	2.4		2.4	2.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.4			7.4			6.4			6.4	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		49.0			49.0			9.5			9.5	
Actuated g/C Ratio		0.72			0.72			0.14			0.14	
v/c Ratio		0.22			0.22			0.42			0.14	
Control Delay		5.2			5.2			29.0			23.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.2			5.2			29.0			23.9	
LOS		A			A			C			C	
Approach Delay		5.2			5.2			29.0			23.9	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		12.4			12.5			9.4			3.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		25.8			25.9			20.1			9.2	
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)												
Base Capacity (vph)		1305			1335			533			543	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.22			0.22			0.16			0.05	

Intersection Summary	
Cycle Length: 78.8	
Actuated Cycle Length: 67.6	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 36.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Humber Station Rd & King St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	248	25	6	258	10	42	28	13	10	14	3
Future Volume (veh/h)	3	248	25	6	258	10	42	28	13	10	14	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	3	261	26	6	272	11	44	29	14	11	15	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Cap, veh/h	62	1101	109	66	1178	47	162	83	30	126	132	20
Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	3	1670	165	9	1786	71	640	731	263	386	1168	179
Grp Volume(v), veh/h	290	0	0	289	0	0	87	0	0	29	0	0
Grp Sat Flow(s),veh/h/ln	1838	0	0	1866	0	0	1634	0	0	1734	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	3.8	0.0	0.0	2.9	0.0	0.0	0.8	0.0	0.0
Prop In Lane	0.01		0.09	0.02		0.04	0.51		0.16	0.38		0.10
Lane Grp Cap(c), veh/h	1272	0	0	1291	0	0	274	0	0	278	0	0
V/C Ratio(X)	0.23	0.00	0.00	0.22	0.00	0.00	0.32	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1272	0	0	1291	0	0	747	0	0	768	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.2	0.0	0.0	4.2	0.0	0.0	25.1	0.0	0.0	24.2	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.6	0.0	0.0	4.6	0.0	0.0	25.7	0.0	0.0	24.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		290			289			87			29	
Approach Delay, s/veh		4.6			4.6			25.7			24.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.4		13.3		47.4		13.3				
Change Period (Y+Rc), s		7.4		6.4		7.4		6.4				
Max Green Setting (Gmax), s		40.0		25.0		40.0		25.0				
Max Q Clear Time (g_c+I1), s		5.9		4.9		5.8		2.8				
Green Ext Time (p_c), s		2.2		0.4		2.2		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			8.1									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	248	25	6	258	10	42	28	13	10	14	3
Future Volume (veh/h)	3	248	25	6	258	10	42	28	13	10	14	3
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	3	261	26	6	272	11	44	29	14	11	15	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	62	1101	109	66	1178	47	162	83	30	126	132	20
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.66	0.66	0.66	0.66	0.66	0.66	0.11	0.11	0.11	0.11	0.11	0.11
Unsig. Movement Delay												
Ln Grp Delay, s/veh	4.6	0.0	0.0	4.6	0.0	0.0	25.7	0.0	0.0	24.4	0.0	0.0
Ln Grp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		290			289			87			29	
Approach Delay, s/veh		4.6			4.6			25.7			24.4	
Approach LOS		A			A			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Case No		8.0		8.0		8.0		8.0
Phs Duration (G+Y+Rc), s		47.4		13.3		47.4		13.3
Change Period (Y+Rc), s		7.4		6.4		7.4		6.4
Max Green (Gmax), s		40.0		25.0		40.0		25.0
Max Allow Headway (MAH), s		5.7		5.7		5.7		5.7
Max Q Clear (g_c+I1), s		5.9		4.9		5.8		2.8
Green Ext Time (g_e), s		2.2		0.4		2.2		0.1
Prob of Phs Call (p_c)		1.00		0.86		1.00		0.86
Prob of Max Out (p_x)		0.00		0.00		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5		7		1		3
Mvmt Sat Flow, veh/h		3		640		9		386

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1670		731		1786		1168

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		165		263		71		179

Left Lane Group Data								
Assigned Mvmt	0	5	0	7	0	1	0	3
Lane Assignment		L+T+R		L+T+R		L+T+R		L+T+R

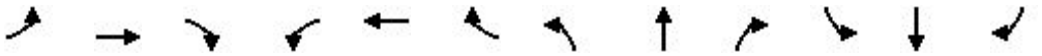
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	290	0	87	0	289	0	29
Grp Sat Flow (s), veh/h/ln	0	1838	0	1634	0	1866	0	1734
Q Serve Time (g_s), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	3.9	0.0	2.9	0.0	3.8	0.0	0.8
Perm LT Sat Flow (s_l), veh/h/ln	0	1114	0	1417	0	1109	0	1385
Shared LT Sat Flow (s_sh), veh/h/ln	0	1869	0	1853	0	1883	0	1865
Perm LT Eff Green (g_p), s	0.0	40.0	0.0	6.9	0.0	40.0	0.0	6.9
Perm LT Serve Time (g_u), s	0.0	36.2	0.0	6.0	0.0	36.1	0.0	4.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	33.1	0.0	1.4	0.0	30.6	0.0	2.6
Serve Time pre Blk (g_fs), s	0.0	3.9	0.0	1.4	0.0	3.8	0.0	0.8
Prop LT Inside Lane (P_L)	0.00	0.01	0.00	0.51	0.00	0.02	0.00	0.38
Lane Grp Cap (c), veh/h	0	1272	0	274	0	1291	0	278
V/C Ratio (X)	0.00	0.23	0.00	0.32	0.00	0.22	0.00	0.10
Avail Cap (c_a), veh/h	0	1272	0	747	0	1291	0	768
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	4.2	0.0	25.1	0.0	4.2	0.0	24.2
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.7	0.0	0.4	0.0	0.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.6	0.0	25.7	0.0	4.6	0.0	24.4
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.12	0.00	0.09	0.00	0.21	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes in Grp	0	0	0	0	0	0	0	0
Grp Vol (v), veh/h	0	0	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.09	0.00	0.16	0.00	0.04	0.00	0.10
Lane Grp Cap (c), veh/h	0	0	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	0	0	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A



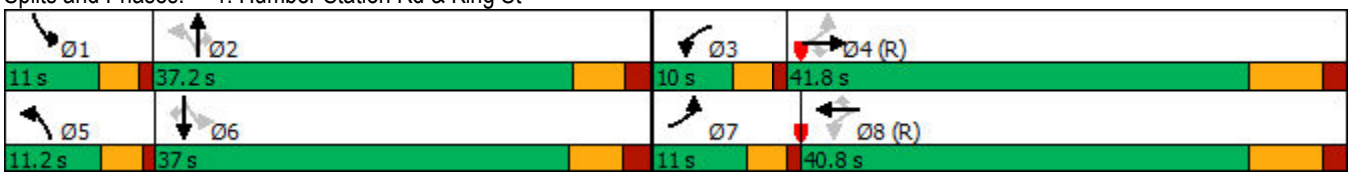
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	468	346	69	443	74	69	181	19	123	351	167
Future Volume (vph)	81	468	346	69	443	74	69	181	19	123	351	167
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1724	1465	1785	1773	1597	1190	1879	1024	1417	1860	1201
Flt Permitted	0.337			0.323			0.300			0.544		
Satd. Flow (perm)	633	1724	1465	607	1773	1597	376	1879	1024	811	1860	1201
Satd. Flow (RTOR)			168			122			135			172
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	9%	9%	0%	6%	0%	50%	0%	56%	26%	1%	33%
Adj. Flow (vph)	84	482	357	71	457	76	71	187	20	127	362	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	482	357	71	457	76	71	187	20	127	362	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.0	21.0	9.0	21.2	21.2
Total Split (s)	11.0	41.8	41.8	10.0	40.8	40.8	11.2	37.2	37.2	11.0	37.0	37.0
Total Split (%)	11.0%	41.8%	41.8%	10.0%	40.8%	40.8%	11.2%	37.2%	37.2%	11.0%	37.0%	37.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	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	2.0	1.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0	6.0	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	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	C-Min	None	C-Max	C-Max	None	Min	Min	None	Min	Min
Act Effct Green (s)	52.0	42.6	42.6	51.2	42.2	42.2	33.1	24.2	24.2	33.8	26.0	26.0
Actuated g/C Ratio	0.52	0.43	0.43	0.51	0.42	0.42	0.33	0.24	0.24	0.34	0.26	0.26
v/c Ratio	0.20	0.66	0.50	0.18	0.61	0.10	0.39	0.41	0.06	0.40	0.75	0.39
Control Delay	13.8	31.1	15.3	13.8	29.8	1.5	25.6	33.4	0.3	24.7	44.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	31.1	15.3	13.8	29.8	1.5	25.6	33.4	0.3	24.7	44.2	7.0
LOS	B	C	B	B	C	A	C	C	A	C	D	A
Approach Delay		23.4			24.4			29.0			30.8	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	7.9	81.7	27.5	6.6	75.5	0.0	9.4	31.8	0.0	17.3	69.2	0.0

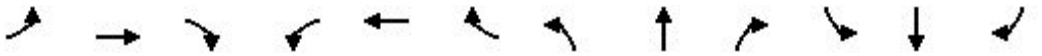
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	17.7	#141.9	60.4	15.5	#125.3	3.3	17.4	47.9	0.0	27.9	94.8	15.2
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Base Capacity (vph)	416	734	720	391	747	743	184	586	412	316	572	488
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	0.20	0.66	0.50	0.18	0.61	0.10	0.39	0.32	0.05	0.40	0.63	0.35

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 78.8 (79%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 26.3	Intersection LOS: C
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 1: Humber Station Rd & King St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	468	346	69	443	74	69	181	19	123	351	167
Future Volume (veh/h)	81	468	346	69	443	74	69	181	19	123	351	167
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	84	482	357	71	457	76	71	187	20	127	362	172
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Cap, veh/h	388	799	677	314	815	725	163	416	198	300	431	274
Arrive On Green	0.05	0.45	0.45	0.04	0.45	0.45	0.06	0.22	0.22	0.07	0.23	0.23
Sat Flow, veh/h	1810	1767	1497	1810	1811	1610	1104	1900	907	1443	1885	1196
Grp Volume(v), veh/h	84	482	357	71	457	76	71	187	20	127	362	172
Grp Sat Flow(s),veh/h/ln	1810	1767	1497	1810	1811	1610	1104	1900	907	1443	1885	1196
Q Serve(g_s), s	2.5	20.6	17.2	2.1	18.6	2.7	5.0	8.5	1.8	6.9	18.3	13.0
Cycle Q Clear(g_c), s	2.5	20.6	17.2	2.1	18.6	2.7	5.0	8.5	1.8	6.9	18.3	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	388	799	677	314	815	725	163	416	198	300	431	274
V/C Ratio(X)	0.22	0.60	0.53	0.23	0.56	0.10	0.44	0.45	0.10	0.42	0.84	0.63
Avail Cap(c_a), veh/h	433	799	677	345	815	725	176	593	283	300	581	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	20.6	19.7	15.7	20.2	15.9	29.5	33.8	31.2	28.2	36.8	34.7
Incr Delay (d2), s/veh	0.3	3.4	2.9	0.4	2.8	0.3	1.8	0.8	0.2	0.9	8.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.6	0.0	0.6	0.1	0.1	0.1	0.0	0.1	1.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	24.0	22.6	16.0	23.0	16.2	31.4	34.6	31.4	29.1	44.8	37.1
LnGrp LOS	B	C	C	B	C	B	C	C	C	C	D	D
Approach Vol, veh/h		923			604			278			661	
Approach Delay, s/veh		22.7			21.3			33.6			39.8	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	28.1	8.3	52.6	10.0	29.1	8.5	52.4
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	7.0	* 31	6.0	34.4	7.2	* 31	7.0	33.4
Max Q Clear Time (g_c+I1), s	8.9	10.5	4.1	22.6	7.0	20.3	4.5	20.6
Green Ext Time (p_c), s	0.0	1.2	0.0	4.4	0.0	2.6	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	468	346	69	443	74	69	181	19	123	351	167
Future Volume (veh/h)	81	468	346	69	443	74	69	181	19	123	351	167
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	84	482	357	71	457	76	71	187	20	127	362	172
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	388	799	677	314	815	725	163	416	198	300	431	274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.45	0.45	0.04	0.45	0.45	0.06	0.22	0.22	0.07	0.23	0.23
Unsig. Movement Delay												
Ln Grp Delay, s/veh	15.5	24.0	22.6	16.0	23.0	16.2	31.4	34.6	31.4	29.1	44.8	37.1
Ln Grp LOS	B	C	C	B	C	B	C	C	C	C	D	D
Approach Vol, veh/h		923			604			278			661	
Approach Delay, s/veh		22.7			21.3			33.6			39.8	
Approach LOS		C			C			C			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	11.0	28.1	8.3	52.6	10.0	29.1	8.5	52.4
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	7.0	* 31	6.0	34.4	7.2	* 31	7.0	33.4
Max Allow Headway (MAH), s	4.8	5.6	4.6	5.4	5.0	5.5	4.6	5.6
Max Q Clear (g_c+I1), s	8.9	10.5	4.1	22.6	7.0	20.3	4.5	20.6
Green Ext Time (g_e), s	0.0	1.2	0.0	4.4	0.0	2.6	0.0	3.0
Prob of Phs Call (p_c)	0.97	1.00	0.86	1.00	0.86	1.00	0.90	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.42	1.00	0.33	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1443		1810		1104		1810	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1900		1767		1885		1811

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		907		1497		1196		1610

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	127	0	71	0	71	0	84	0
Grp Sat Flow (s), veh/h/ln	1443	0	1810	0	1104	0	1810	0
Q Serve Time (g_s), s	6.9	0.0	2.1	0.0	5.0	0.0	2.5	0.0
Cycle Q Clear Time (g_c), s	6.9	0.0	2.1	0.0	5.0	0.0	2.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	951	0	666	0	539	0	885	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	21.9	0.0	45.0	0.0	21.9	0.0	45.0	0.0
Perm LT Serve Time (g_u), s	13.3	0.0	24.7	0.0	4.6	0.0	26.5	0.0
Perm LT Q Serve Time (g_ps), s	1.3	0.0	2.4	0.0	2.6	0.0	1.9	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	300	0	314	0	163	0	388	0
V/C Ratio (X)	0.42	0.00	0.23	0.00	0.44	0.00	0.22	0.00
Avail Cap (c_a), veh/h	300	0	345	0	176	0	433	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	28.2	0.0	15.7	0.0	29.5	0.0	15.3	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.4	0.0	1.8	0.0	0.3	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	29.1	0.0	16.0	0.0	31.4	0.0	15.5	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.45	0.00	0.15	0.00	0.55	0.00	0.14	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	187	0	482	0	362	0	457
Grp Sat Flow (s), veh/h/ln	0	1900	0	1767	0	1885	0	1811
Q Serve Time (g_s), s	0.0	8.5	0.0	20.6	0.0	18.3	0.0	18.6
Cycle Q Clear Time (g_c), s	0.0	8.5	0.0	20.6	0.0	18.3	0.0	18.6
Lane Grp Cap (c), veh/h	0	416	0	799	0	431	0	815
V/C Ratio (X)	0.00	0.45	0.00	0.60	0.00	0.84	0.00	0.56
Avail Cap (c_a), veh/h	0	593	0	799	0	581	0	815
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	33.8	0.0	20.6	0.0	36.8	0.0	20.2
Incr Delay (d2), s/veh	0.0	0.8	0.0	3.4	0.0	8.0	0.0	2.8
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	34.6	0.0	24.0	0.0	44.8	0.0	23.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.7	0.0	1.0	0.0	0.6

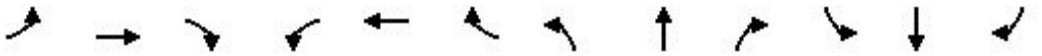
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.7	0.0	1.0	0.0	0.6
%ile Storage Ratio (RQ%)	0.00	0.16	0.00	0.63	0.00	0.79	0.00	1.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	20	0	357	0	172	0	76
Grp Sat Flow (s), veh/h/ln	0	907	0	1497	0	1196	0	1610
Q Serve Time (g_s), s	0.0	1.8	0.0	17.2	0.0	13.0	0.0	2.7
Cycle Q Clear Time (g_c), s	0.0	1.8	0.0	17.2	0.0	13.0	0.0	2.7
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	198	0	677	0	274	0	725
V/C Ratio (X)	0.00	0.10	0.00	0.53	0.00	0.63	0.00	0.10
Avail Cap (c_a), veh/h	0	283	0	677	0	368	0	725
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	31.2	0.0	19.7	0.0	34.7	0.0	15.9
Incr Delay (d2), s/veh	0.0	0.2	0.0	2.9	0.0	2.4	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	31.4	0.0	22.6	0.0	37.1	0.0	16.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.6	0.0	0.2	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.6	0.0	0.2	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.16	0.00	5.24	0.00	0.19	0.00	0.52
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	509	179	22	645	169	253	496	88	64	243	133
Future Volume (vph)	156	509	179	22	645	169	253	496	88	64	243	133
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1807	1521	1322	1773	1258	1684	1807	1581	1653	1807	1452
Flt Permitted	0.094			0.340			0.363			0.143		
Satd. Flow (perm)	161	1807	1521	473	1773	1258	643	1807	1581	249	1807	1452
Satd. Flow (RTOR)			138			175			149			185
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	10%	4%	5%	35%	6%	27%	6%	4%	1%	8%	4%	10%
Adj. Flow (vph)	161	525	185	23	665	174	261	511	91	66	251	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	525	185	23	665	174	261	511	91	66	251	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.2	21.2	9.0	21.2	21.2
Total Split (s)	15.0	57.0	57.0	10.0	52.0	52.0	17.0	42.0	42.0	11.0	36.0	36.0
Total Split (%)	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	14.2%	35.0%	35.0%	9.2%	30.0%	30.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	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	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	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	6.2	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	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	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	65.7	56.3	56.3	57.1	47.9	47.9	46.3	35.3	35.3	36.0	27.1	27.1
Actuated g/C Ratio	0.55	0.47	0.47	0.48	0.40	0.40	0.39	0.29	0.29	0.30	0.23	0.23
v/c Ratio	0.75	0.62	0.24	0.09	0.94	0.29	0.72	0.96	0.16	0.43	0.62	0.29
Control Delay	42.0	29.9	7.5	15.0	58.7	5.0	39.4	73.0	1.2	31.7	48.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	29.9	7.5	15.0	72.8	5.0	39.4	73.0	1.2	31.7	48.2	3.3
LOS	D	C	A	B	E	A	D	E	A	C	D	A
Approach Delay		27.4			57.6			55.3			32.3	
Approach LOS		C			E			E			C	
Queue Length 50th (m)	20.3	106.0	7.0	2.7	~166.7	0.0	44.6	123.8	0.0	9.9	54.6	0.0

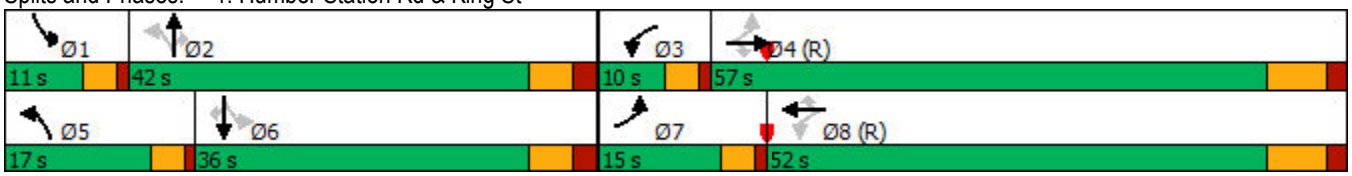
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#53.2	148.2	22.1	7.0	#246.3	14.8	67.6	#193.2	1.8	19.6	82.7	6.3
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Base Capacity (vph)	222	848	787	268	707	607	360	539	576	156	448	499
Starvation Cap Reductn	0	0	0	0	52	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	0.73	0.62	0.24	0.09	1.02	0.29	0.72	0.95	0.16	0.42	0.56	0.27

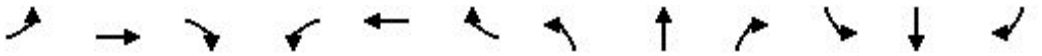
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 78.8 (66%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Humber Station Rd & King St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	509	179	22	645	169	253	496	88	64	243	133
Future Volume (veh/h)	156	509	179	22	645	169	253	496	88	64	243	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	161	525	185	23	665	174	261	511	91	66	251	137
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Cap, veh/h	211	853	717	226	752	528	347	539	468	146	415	335
Arrive On Green	0.07	0.46	0.46	0.01	0.14	0.14	0.11	0.29	0.29	0.04	0.23	0.23
Sat Flow, veh/h	1668	1841	1547	1316	1811	1271	1725	1841	1598	1697	1841	1485
Grp Volume(v), veh/h	161	525	185	23	665	174	261	511	91	66	251	137
Grp Sat Flow(s),veh/h/ln	1668	1841	1547	1316	1811	1271	1725	1841	1598	1697	1841	1485
Q Serve(g_s), s	6.4	25.7	8.7	1.2	43.3	14.8	13.0	32.6	5.1	3.6	14.7	9.4
Cycle Q Clear(g_c), s	6.4	25.7	8.7	1.2	43.3	14.8	13.0	32.6	5.1	3.6	14.7	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	853	717	226	752	528	347	539	468	146	415	335
V/C Ratio(X)	0.76	0.62	0.26	0.10	0.88	0.33	0.75	0.95	0.19	0.45	0.60	0.41
Avail Cap(c_a), veh/h	247	853	717	262	752	528	347	549	477	175	457	369
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	24.1	19.6	21.4	48.9	36.7	32.4	41.6	31.8	36.3	41.7	39.6
Incr Delay (d2), s/veh	11.2	3.3	0.9	0.2	14.3	1.7	9.0	25.9	0.2	2.2	1.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.2	0.0	3.0	0.2	0.9	3.9	0.0	0.1	0.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	27.5	20.5	21.6	63.3	38.3	41.3	67.4	32.0	38.4	43.6	40.4
LnGrp LOS	D	C	C	C	E	D	D	E	C	D	D	D
Approach Vol, veh/h		871			862			863			454	
Approach Delay, s/veh		27.9			57.1			55.8			41.9	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	41.3	6.7	63.0	17.0	33.3	12.5	57.2
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Q Clear Time (g_c+I1), s	5.6	34.6	3.2	27.7	15.0	16.7	8.4	45.3
Green Ext Time (p_c), s	0.0	0.5	0.0	5.1	0.0	1.9	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	509	179	22	645	169	253	496	88	64	243	133
Future Volume (veh/h)	156	509	179	22	645	169	253	496	88	64	243	133
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	161	525	185	23	665	174	261	511	91	66	251	137
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	211	853	717	226	752	528	347	539	468	146	415	335
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.46	0.46	0.01	0.14	0.14	0.11	0.29	0.29	0.04	0.23	0.23
Unsig. Movement Delay												
Ln Grp Delay, s/veh	38.1	27.5	20.5	21.6	63.3	38.3	41.3	67.4	32.0	38.4	43.6	40.4
Ln Grp LOS	D	C	C	C	E	D	D	E	C	D	D	D
Approach Vol, veh/h		871			862			863			454	
Approach Delay, s/veh		27.9			57.1			55.8			41.9	
Approach LOS		C			E			E			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	9.0	41.3	6.7	63.0	17.0	33.3	12.5	57.2
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Allow Headway (MAH), s	4.6	5.6	4.9	5.5	4.6	5.4	4.7	5.6
Max Q Clear (g_c+I1), s	5.6	34.6	3.2	27.7	15.0	16.7	8.4	45.3
Green Ext Time (g_e), s	0.0	0.5	0.0	5.1	0.0	1.9	0.1	0.0
Prob of Phs Call (p_c)	0.89	1.00	0.54	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	1.00	1.00	0.08	1.00	0.10	1.00	1.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1697		1316		1725		1668	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1841		1841		1841		1811

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1598		1547		1485		1271

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	66	0	23	0	261	0	161	0
Grp Sat Flow (s), veh/h/ln	1697	0	1316	0	1725	0	1668	0
Q Serve Time (g_s), s	3.6	0.0	1.2	0.0	13.0	0.0	6.4	0.0
Cycle Q Clear Time (g_c), s	3.6	0.0	1.2	0.0	13.0	0.0	6.4	0.0
Perm LT Sat Flow (s_l), veh/h/ln	778	0	546	0	964	0	614	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	27.1	0.0	49.8	0.0	29.1	0.0	51.8	0.0
Perm LT Serve Time (g_u), s	2.5	0.0	30.0	0.0	12.4	0.0	6.6	0.0
Perm LT Q Serve Time (g_ps), s	2.3	0.0	0.9	0.0	8.0	0.0	6.6	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	146	0	226	0	347	0	211	0
V/C Ratio (X)	0.45	0.00	0.10	0.00	0.75	0.00	0.76	0.00
Avail Cap (c_a), veh/h	175	0	262	0	347	0	247	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	36.3	0.0	21.4	0.0	32.4	0.0	26.9	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.2	0.0	9.0	0.0	11.2	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	38.4	0.0	21.6	0.0	41.3	0.0	38.1	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.9	0.0	0.7	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.0	0.9	0.0	0.7	0.0
%ile Storage Ratio (RQ%)	0.44	0.00	0.07	0.00	4.26	0.00	3.35	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	511	0	525	0	251	0	665
Grp Sat Flow (s), veh/h/ln	0	1841	0	1841	0	1841	0	1811
Q Serve Time (g_s), s	0.0	32.6	0.0	25.7	0.0	14.7	0.0	43.3
Cycle Q Clear Time (g_c), s	0.0	32.6	0.0	25.7	0.0	14.7	0.0	43.3
Lane Grp Cap (c), veh/h	0	539	0	853	0	415	0	752
V/C Ratio (X)	0.00	0.95	0.00	0.62	0.00	0.60	0.00	0.88
Avail Cap (c_a), veh/h	0	549	0	853	0	457	0	752
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	41.6	0.0	24.1	0.0	41.7	0.0	48.9
Incr Delay (d2), s/veh	0.0	25.9	0.0	3.3	0.0	1.9	0.0	14.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	67.4	0.0	27.5	0.0	43.6	0.0	63.3
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	3.9	0.0	0.8	0.0	0.2	0.0	3.0

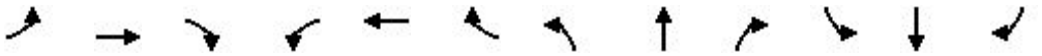
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	3.9	0.0	0.8	0.0	0.2	0.0	3.0
%ile Storage Ratio (RQ%)	0.00	7.11	0.00	0.63	0.00	0.19	0.00	4.92
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	91	0	185	0	137	0	174
Grp Sat Flow (s), veh/h/ln	0	1598	0	1547	0	1485	0	1271
Q Serve Time (g_s), s	0.0	5.1	0.0	8.7	0.0	9.4	0.0	14.8
Cycle Q Clear Time (g_c), s	0.0	5.1	0.0	8.7	0.0	9.4	0.0	14.8
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	468	0	717	0	335	0	528
V/C Ratio (X)	0.00	0.19	0.00	0.26	0.00	0.41	0.00	0.33
Avail Cap (c_a), veh/h	0	477	0	717	0	369	0	528
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	31.8	0.0	19.6	0.0	39.6	0.0	36.7
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.9	0.0	0.8	0.0	1.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	32.0	0.0	20.5	0.0	40.4	0.0	38.3
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.23	0.00	1.60	0.00	0.07	0.00	2.64
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

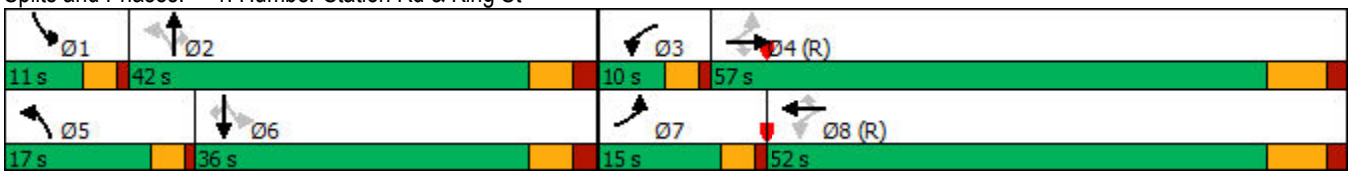


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	354	179	6	385	135	207	399	13	62	232	126
Future Volume (vph)	149	354	179	6	385	135	207	399	13	62	232	126
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1842	1426	1785	1860	1597	1594	1879	1479	1785	1879	956
Flt Permitted	0.349			0.540			0.322			0.268		
Satd. Flow (perm)	656	1842	1426	1015	1860	1597	540	1879	1479	504	1879	956
Satd. Flow (RTOR)			138			175			149			185
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	12%	0%	1%	0%	12%	0%	8%	0%	0%	67%
Adj. Flow (vph)	157	373	188	6	405	142	218	420	14	65	244	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	373	188	6	405	142	218	420	14	65	244	133
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.2	21.2	9.0	21.2	21.2
Total Split (s)	15.0	57.0	57.0	10.0	52.0	52.0	17.0	42.0	42.0	11.0	36.0	36.0
Total Split (%)	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	14.2%	35.0%	35.0%	9.2%	30.0%	30.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	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	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	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	6.2	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	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	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	67.0	61.6	61.6	58.1	49.0	49.0	45.0	32.6	32.6	33.2	22.8	22.8
Actuated g/C Ratio	0.56	0.51	0.51	0.48	0.41	0.41	0.38	0.27	0.27	0.28	0.19	0.19
v/c Ratio	0.34	0.39	0.24	0.01	0.53	0.19	0.64	0.82	0.03	0.29	0.69	0.40
Control Delay	16.5	21.8	7.2	15.2	32.3	2.5	34.8	55.3	0.1	26.0	54.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	21.8	7.2	15.2	32.7	2.5	34.8	55.3	0.1	26.0	54.7	5.1
LOS	B	C	A	B	C	A	C	E	A	C	D	A
Approach Delay		16.8			24.8			47.2			35.6	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	18.6	54.0	6.0	0.7	77.2	0.0	37.9	98.6	0.0	10.1	56.6	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	34.1	101.1	24.6	3.1	118.9	8.2	54.0	133.4	0.0	18.3	79.6	5.4
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Base Capacity (vph)	475	955	806	532	784	775	343	560	545	230	466	376
Starvation Cap Reductn	0	0	0	0	98	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	0.33	0.39	0.23	0.01	0.59	0.18	0.64	0.75	0.03	0.28	0.52	0.35

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 78.8 (66%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 71.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Humber Station Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	354	179	6	385	135	207	399	13	62	232	126
Future Volume (veh/h)	149	354	179	6	385	135	207	399	13	62	232	126
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	157	373	188	6	405	142	218	420	14	65	244	133
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Cap, veh/h	396	949	741	406	853	729	310	503	400	187	374	151
Arrive On Green	0.06	0.51	0.51	0.00	0.15	0.15	0.11	0.26	0.26	0.04	0.20	0.20
Sat Flow, veh/h	1810	1870	1459	1810	1885	1610	1640	1900	1510	1810	1900	769
Grp Volume(v), veh/h	157	373	188	6	405	142	218	420	14	65	244	133
Grp Sat Flow(s),veh/h/ln	1810	1870	1459	1810	1885	1610	1640	1900	1510	1810	1900	769
Q Serve(g_s), s	5.3	14.7	8.7	0.2	23.6	9.3	12.5	25.0	0.8	3.4	14.2	20.2
Cycle Q Clear(g_c), s	5.3	14.7	8.7	0.2	23.6	9.3	12.5	25.0	0.8	3.4	14.2	20.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	396	949	741	406	853	729	310	503	400	187	374	151
V/C Ratio(X)	0.40	0.39	0.25	0.01	0.47	0.19	0.70	0.83	0.04	0.35	0.65	0.88
Avail Cap(c_a), veh/h	450	949	741	482	853	729	310	567	450	220	472	191
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	18.2	16.7	17.9	38.0	31.9	33.3	41.6	32.7	37.5	44.4	46.8
Incr Delay (d2), s/veh	0.6	1.2	0.8	0.0	1.9	0.6	7.0	9.5	0.0	1.1	2.2	29.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.2	0.0	0.4	0.1	0.6	1.3	0.0	0.1	0.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	19.4	17.5	17.9	39.9	32.5	40.3	51.1	32.8	38.6	46.6	76.4
LnGrp LOS	B	B	B	B	D	C	D	D	C	D	D	E
Approach Vol, veh/h		718			553			652			442	
Approach Delay, s/veh		18.7			37.7			47.1			54.4	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	38.0	4.9	68.3	17.0	29.8	11.5	61.7
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Q Clear Time (g_c+I1), s	5.4	27.0	2.2	16.7	14.5	22.2	7.3	25.6
Green Ext Time (p_c), s	0.0	2.0	0.0	4.0	0.0	1.4	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	354	179	6	385	135	207	399	13	62	232	126
Future Volume (veh/h)	149	354	179	6	385	135	207	399	13	62	232	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	157	373	188	6	405	142	218	420	14	65	244	133
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	396	949	741	406	853	729	310	503	400	187	374	151
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.51	0.51	0.00	0.15	0.15	0.11	0.26	0.26	0.04	0.20	0.20
Unsig. Movement Delay												
Ln Grp Delay, s/veh	18.4	19.4	17.5	17.9	39.9	32.5	40.3	51.1	32.8	38.6	46.6	76.4
Ln Grp LOS	B	B	B	B	D	C	D	D	C	D	D	E
Approach Vol, veh/h		718			553			652			442	
Approach Delay, s/veh		18.7			37.7			47.1			54.4	
Approach LOS		B			D			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	8.8	38.0	4.9	68.3	17.0	29.8	11.5	61.7
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Allow Headway (MAH), s	4.6	5.6	4.6	5.4	4.7	5.6	4.6	5.4
Max Q Clear (g_c+I1), s	5.4	27.0	2.2	16.7	14.5	22.2	7.3	25.6
Green Ext Time (g_e), s	0.0	2.0	0.0	4.0	0.0	1.4	0.2	3.5
Prob of Phs Call (p_c)	0.89	1.00	0.18	1.00	1.00	1.00	0.99	1.00
Prob of Max Out (p_x)	1.00	0.46	1.00	0.00	1.00	0.54	1.00	0.05

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1810		1810		1640		1810	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1900		1870		1900		1885

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1510		1459		769		1610

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	65	0	6	0	218	0	157	0
Grp Sat Flow (s), veh/h/ln	1810	0	1810	0	1640	0	1810	0
Q Serve Time (g_s), s	3.4	0.0	0.2	0.0	12.5	0.0	5.3	0.0
Cycle Q Clear Time (g_c), s	3.4	0.0	0.2	0.0	12.5	0.0	5.3	0.0
Perm LT Sat Flow (s_l), veh/h/ln	970	0	862	0	926	0	874	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	23.6	0.0	54.3	0.0	25.6	0.0	56.3	0.0
Perm LT Serve Time (g_u), s	6.7	0.0	46.2	0.0	9.4	0.0	30.7	0.0
Perm LT Q Serve Time (g_ps), s	1.2	0.0	0.1	0.0	5.0	0.0	5.6	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	187	0	406	0	310	0	396	0
V/C Ratio (X)	0.35	0.00	0.01	0.00	0.70	0.00	0.40	0.00
Avail Cap (c_a), veh/h	220	0	482	0	310	0	450	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	37.5	0.0	17.9	0.0	33.3	0.0	17.7	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.0	7.0	0.0	0.6	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	38.6	0.0	17.9	0.0	40.3	0.0	18.4	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.6	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.0	0.6	0.0	0.1	0.0
%ile Storage Ratio (RQ%)	0.27	0.00	0.01	0.00	3.10	0.00	0.33	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	420	0	373	0	244	0	405
Grp Sat Flow (s), veh/h/ln	0	1900	0	1870	0	1900	0	1885
Q Serve Time (g_s), s	0.0	25.0	0.0	14.7	0.0	14.2	0.0	23.6
Cycle Q Clear Time (g_c), s	0.0	25.0	0.0	14.7	0.0	14.2	0.0	23.6
Lane Grp Cap (c), veh/h	0	503	0	949	0	374	0	853
V/C Ratio (X)	0.00	0.83	0.00	0.39	0.00	0.65	0.00	0.47
Avail Cap (c_a), veh/h	0	567	0	949	0	472	0	853
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	41.6	0.0	18.2	0.0	44.4	0.0	38.0
Incr Delay (d2), s/veh	0.0	9.5	0.0	1.2	0.0	2.2	0.0	1.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	51.1	0.0	19.4	0.0	46.6	0.0	39.9
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.3	0.0	0.3	0.0	0.2	0.0	0.4

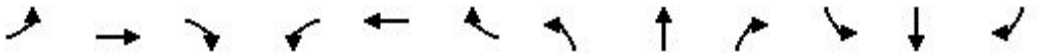
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.3	0.0	0.3	0.0	0.2	0.0	0.4
%ile Storage Ratio (RQ%)	0.00	2.36	0.00	0.26	0.00	0.18	0.00	0.71
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	14	0	188	0	133	0	142
Grp Sat Flow (s), veh/h/ln	0	1510	0	1459	0	769	0	1610
Q Serve Time (g_s), s	0.0	0.8	0.0	8.7	0.0	20.2	0.0	9.3
Cycle Q Clear Time (g_c), s	0.0	0.8	0.0	8.7	0.0	20.2	0.0	9.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	400	0	741	0	151	0	729
V/C Ratio (X)	0.00	0.04	0.00	0.25	0.00	0.88	0.00	0.19
Avail Cap (c_a), veh/h	0	450	0	741	0	191	0	729
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	32.7	0.0	16.7	0.0	46.8	0.0	31.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	29.6	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	32.8	0.0	17.5	0.0	76.4	0.0	32.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	1.2	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	1.2	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.04	0.00	1.65	0.00	1.56	0.00	1.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.



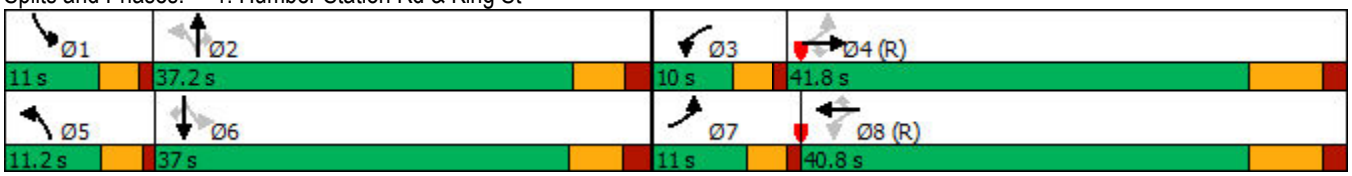
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	468	346	69	443	135	69	187	19	214	364	193
Future Volume (vph)	113	468	346	69	443	135	69	187	19	214	364	193
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1724	1465	1785	1773	1597	1190	1879	1024	1417	1860	1201
Flt Permitted	0.308			0.331			0.285			0.536		
Satd. Flow (perm)	579	1724	1465	622	1773	1597	357	1879	1024	799	1860	1201
Satd. Flow (RTOR)			168			122			135			199
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	9%	9%	0%	6%	0%	50%	0%	56%	26%	1%	33%
Adj. Flow (vph)	116	482	357	71	457	139	71	193	20	221	375	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	482	357	71	457	139	71	193	20	221	375	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.0	21.0	9.0	21.2	21.2
Total Split (s)	11.0	41.8	41.8	10.0	40.8	40.8	11.2	37.2	37.2	11.0	37.0	37.0
Total Split (%)	11.0%	41.8%	41.8%	10.0%	40.8%	40.8%	11.2%	37.2%	37.2%	11.0%	37.0%	37.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	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	2.0	1.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0	6.0	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	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	C-Min	None	C-Max	C-Max	None	Min	Min	None	Min	Min
Act Effct Green (s)	52.1	42.2	42.2	49.5	39.3	39.3	33.5	24.6	24.6	34.2	26.4	26.4
Actuated g/C Ratio	0.52	0.42	0.42	0.50	0.39	0.39	0.34	0.25	0.25	0.34	0.26	0.26
v/c Ratio	0.29	0.66	0.50	0.18	0.66	0.20	0.40	0.42	0.06	0.70	0.77	0.43
Control Delay	14.8	31.6	15.5	14.1	32.3	6.6	25.7	33.2	0.3	37.1	44.8	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	31.6	15.5	14.1	32.3	6.6	25.7	33.2	0.3	37.1	44.8	7.0
LOS	B	C	B	B	C	A	C	C	A	D	D	A
Approach Delay		23.6			25.0			29.0			33.2	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	11.3	82.8	28.0	6.7	77.9	2.2	9.3	32.6	0.0	32.2	71.6	0.0

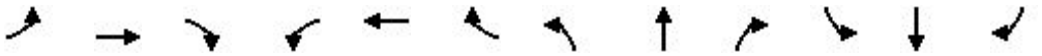
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	23.1	#141.9	60.4	15.5	#125.3	15.6	17.4	49.3	0.0	47.9	98.5	16.3
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Base Capacity (vph)	397	727	715	388	696	701	180	586	412	316	572	507
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	0.29	0.66	0.50	0.18	0.66	0.20	0.39	0.33	0.05	0.70	0.66	0.39

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 78.8 (79%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 27.3	Intersection LOS: C
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 1: Humber Station Rd & King St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Future Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	116	482	357	71	457	139	71	193	20	221	375	199
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Cap, veh/h	372	787	667	308	788	700	162	429	205	304	445	282
Arrive On Green	0.05	0.45	0.45	0.04	0.43	0.43	0.06	0.23	0.23	0.07	0.24	0.24
Sat Flow, veh/h	1810	1767	1497	1810	1811	1610	1104	1900	907	1443	1885	1196
Grp Volume(v), veh/h	116	482	357	71	457	139	71	193	20	221	375	199
Grp Sat Flow(s),veh/h/ln	1810	1767	1497	1810	1811	1610	1104	1900	907	1443	1885	1196
Q Serve(g_s), s	3.5	20.8	17.4	2.1	19.1	5.3	4.9	8.8	1.7	7.0	19.0	15.3
Cycle Q Clear(g_c), s	3.5	20.8	17.4	2.1	19.1	5.3	4.9	8.8	1.7	7.0	19.0	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	787	667	308	788	700	162	429	205	304	445	282
V/C Ratio(X)	0.31	0.61	0.54	0.23	0.58	0.20	0.44	0.45	0.10	0.73	0.84	0.70
Avail Cap(c_a), veh/h	403	787	667	338	788	700	176	593	283	304	581	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	21.2	20.2	16.4	21.4	17.5	29.2	33.4	30.6	34.0	36.4	35.0
Incr Delay (d2), s/veh	0.5	3.5	3.1	0.4	3.1	0.6	1.9	0.7	0.2	8.5	8.6	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.6	0.0	0.7	0.1	0.1	0.1	0.0	0.7	1.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	24.7	23.3	16.8	24.5	18.1	31.0	34.1	30.9	42.5	45.0	39.1
LnGrp LOS	B	C	C	B	C	B	C	C	C	D	D	D
Approach Vol, veh/h		955			667			284			795	
Approach Delay, s/veh		23.2			22.3			33.1			42.8	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	28.8	8.3	51.9	10.0	29.8	9.3	50.9
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	7.0	* 31	6.0	34.4	7.2	* 31	7.0	33.4
Max Q Clear Time (g_c+I1), s	9.0	10.8	4.1	22.8	6.9	21.0	5.5	21.1
Green Ext Time (p_c), s	0.0	1.3	0.0	4.3	0.0	2.7	0.1	3.2

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Future Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	116	482	357	71	457	139	71	193	20	221	375	199
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	372	787	667	308	788	700	162	429	205	304	445	282
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.45	0.45	0.04	0.43	0.43	0.06	0.23	0.23	0.07	0.24	0.24
Unsig. Movement Delay												
Ln Grp Delay, s/veh	16.6	24.7	23.3	16.8	24.5	18.1	31.0	34.1	30.9	42.5	45.0	39.1
Ln Grp LOS	B	C	C	B	C	B	C	C	C	D	D	D
Approach Vol, veh/h		955			667			284			795	
Approach Delay, s/veh		23.2			22.3			33.1			42.8	
Approach LOS		C			C			C			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	11.0	28.8	8.3	51.9	10.0	29.8	9.3	50.9
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	7.0	* 31	6.0	34.4	7.2	* 31	7.0	33.4
Max Allow Headway (MAH), s	4.8	5.6	4.6	5.4	5.0	5.5	4.6	5.5
Max Q Clear (g_c+I1), s	9.0	10.8	4.1	22.8	6.9	21.0	5.5	21.1
Green Ext Time (g_e), s	0.0	1.3	0.0	4.3	0.0	2.7	0.1	3.2
Prob of Phs Call (p_c)	1.00	1.00	0.86	1.00	0.86	1.00	0.96	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.44	1.00	0.41	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1443		1810		1104		1810	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1900		1767		1885		1811

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		907		1497		1196		1610

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	221	0	71	0	71	0	116	0
Grp Sat Flow (s), veh/h/ln	1443	0	1810	0	1104	0	1810	0
Q Serve Time (g_s), s	7.0	0.0	2.1	0.0	4.9	0.0	3.5	0.0
Cycle Q Clear Time (g_c), s	7.0	0.0	2.1	0.0	4.9	0.0	3.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	946	0	666	0	520	0	835	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	22.6	0.0	43.5	0.0	22.6	0.0	43.5	0.0
Perm LT Serve Time (g_u), s	13.8	0.0	23.7	0.0	4.7	0.0	24.4	0.0
Perm LT Q Serve Time (g_ps), s	12.3	0.0	2.4	0.0	2.8	0.0	3.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	304	0	308	0	162	0	372	0
V/C Ratio (X)	0.73	0.00	0.23	0.00	0.44	0.00	0.31	0.00
Avail Cap (c_a), veh/h	304	0	338	0	176	0	403	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	34.0	0.0	16.4	0.0	29.2	0.0	16.1	0.0
Incr Delay (d2), s/veh	8.5	0.0	0.4	0.0	1.9	0.0	0.5	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	42.5	0.0	16.8	0.0	31.0	0.0	16.6	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	4.07	0.00	0.15	0.00	0.55	0.00	0.23	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	193	0	482	0	375	0	457
Grp Sat Flow (s), veh/h/ln	0	1900	0	1767	0	1885	0	1811
Q Serve Time (g_s), s	0.0	8.8	0.0	20.8	0.0	19.0	0.0	19.1
Cycle Q Clear Time (g_c), s	0.0	8.8	0.0	20.8	0.0	19.0	0.0	19.1
Lane Grp Cap (c), veh/h	0	429	0	787	0	445	0	788
V/C Ratio (X)	0.00	0.45	0.00	0.61	0.00	0.84	0.00	0.58
Avail Cap (c_a), veh/h	0	593	0	787	0	581	0	788
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	33.4	0.0	21.2	0.0	36.4	0.0	21.4
Incr Delay (d2), s/veh	0.0	0.7	0.0	3.5	0.0	8.6	0.0	3.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	34.1	0.0	24.7	0.0	45.0	0.0	24.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.8	0.0	1.1	0.0	0.7

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.8	0.0	1.1	0.0	0.7
%ile Storage Ratio (RQ%)	0.00	0.16	0.00	0.65	0.00	0.87	0.00	1.12
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	20	0	357	0	199	0	139
Grp Sat Flow (s), veh/h/ln	0	907	0	1497	0	1196	0	1610
Q Serve Time (g_s), s	0.0	1.7	0.0	17.4	0.0	15.3	0.0	5.3
Cycle Q Clear Time (g_c), s	0.0	1.7	0.0	17.4	0.0	15.3	0.0	5.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	205	0	667	0	282	0	700
V/C Ratio (X)	0.00	0.10	0.00	0.54	0.00	0.70	0.00	0.20
Avail Cap (c_a), veh/h	0	283	0	667	0	368	0	700
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	30.6	0.0	20.2	0.0	35.0	0.0	17.5
Incr Delay (d2), s/veh	0.0	0.2	0.0	3.1	0.0	4.1	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	30.9	0.0	23.3	0.0	39.1	0.0	18.1
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.6	0.0	0.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.6	0.0	0.3	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	5.41	0.00	0.33	0.00	1.10
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	7	363	99	14	636
Future Vol, veh/h	130	7	363	99	14	636
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	7
Mvmt Flow	144	8	403	110	16	707

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	844	257	0	0	513	0
Stage 1	458	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	306	748	-	-	1063	-
Stage 1	609	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	298	748	-	-	1063	-
Mov Cap-2 Maneuver	298	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.7	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	307	1063	-
HCM Lane V/C Ratio	-	-	0.496	0.015	-
HCM Control Delay (s)	-	-	27.7	8.4	0.1
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	2.6	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	89	12	0	123	0	7	0	0	0	0	7
Future Vol, veh/h	12	89	12	0	123	0	7	0	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	97	13	0	134	0	8	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	134	0	0	110	0	0	268	264	104	264	270	134
Stage 1	-	-	-	-	-	-	130	130	-	134	134	-
Stage 2	-	-	-	-	-	-	138	134	-	130	136	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	-	1493	-	-	689	645	956	693	640	920
Stage 1	-	-	-	-	-	-	878	792	-	874	789	-
Stage 2	-	-	-	-	-	-	870	789	-	878	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1493	-	-	679	639	956	688	634	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	639	-	688	634	-
Stage 1	-	-	-	-	-	-	870	785	-	866	789	-
Stage 2	-	-	-	-	-	-	863	789	-	870	781	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	10.4	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1463	-	-	1493	-	-	920
HCM Lane V/C Ratio	0.011	0.009	-	-	-	-	-	0.008
HCM Control Delay (s)	10.4	7.5	0	-	0	-	-	8.9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	66	12	0	108	0	8	0	0	0	0	7
Future Vol, veh/h	11	66	12	0	108	0	8	0	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	72	13	0	117	0	9	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	117	0	0	85	0	0	224	220	79	220	226	117
Stage 1	-	-	-	-	-	-	103	103	-	117	117	-
Stage 2	-	-	-	-	-	-	121	117	-	103	109	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1484	-	-	1524	-	-	736	682	987	740	677	941
Stage 1	-	-	-	-	-	-	908	814	-	892	803	-
Stage 2	-	-	-	-	-	-	888	803	-	908	809	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1484	-	-	1524	-	-	726	677	987	736	672	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	726	677	-	736	672	-
Stage 1	-	-	-	-	-	-	901	807	-	885	803	-
Stage 2	-	-	-	-	-	-	881	803	-	901	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	10	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	726	1484	-	-	1524	-	-	941
HCM Lane V/C Ratio	0.012	0.008	-	-	-	-	-	0.008
HCM Control Delay (s)	10	7.4	0	-	0	-	-	8.9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	0	0	21	0	0
Future Vol, veh/h	40	0	0	21	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	43	0	0	23	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	13	12	0	0	23	0
Stage 1	12	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1011	1074	-	-	1605	-
Stage 1	1016	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1011	1074	-	-	1605	-
Mov Cap-2 Maneuver	1011	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1028	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1011	1605	-
HCM Lane V/C Ratio	-	-	0.043	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	24	21	0	29	0	39	0	0	0	0	40
Future Vol, veh/h	21	24	21	0	29	0	39	0	0	0	0	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	26	23	0	32	0	42	0	0	0	0	43
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.3	7.6	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	32%	0%	0%
Vol Thru, %	0%	36%	100%	0%
Vol Right, %	0%	32%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	66	29	40
LT Vol	39	21	0	0
Through Vol	0	24	29	0
RT Vol	0	21	0	40
Lane Flow Rate	42	72	32	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.051	0.079	0.036	0.042
Departure Headway (Hd)	4.314	3.947	4.105	3.511
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	826	905	868	1010
Service Time	2.361	1.985	2.15	1.567
HCM Lane V/C Ratio	0.051	0.08	0.037	0.043
HCM Control Delay	7.6	7.3	7.3	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.1	0.1

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	0	0	21	0
Future Vol, veh/h	0	39	0	0	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	42	0	0	23	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	46	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	969	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	969	-	-	-	-	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	
HCM LOS	-		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	509	179	22	645	303	253	527	88	168	254	202
Future Volume (vph)	209	509	179	22	645	303	253	527	88	168	254	202
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1807	1521	1322	1773	1258	1684	1807	1581	1653	1807	1452
Flt Permitted	0.082			0.328			0.366			0.134		
Satd. Flow (perm)	140	1807	1521	457	1773	1258	649	1807	1581	233	1807	1452
Satd. Flow (RTOR)			138			175			149			208
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	10%	4%	5%	35%	6%	27%	6%	4%	1%	8%	4%	10%
Adj. Flow (vph)	215	525	185	23	665	312	261	543	91	173	262	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	525	185	23	665	312	261	543	91	173	262	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.2	21.2	9.0	21.2	21.2
Total Split (s)	15.0	57.0	57.0	10.0	52.0	52.0	17.0	42.0	42.0	11.0	36.0	36.0
Total Split (%)	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	14.2%	35.0%	35.0%	9.2%	30.0%	30.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	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	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	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	6.2	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	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	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	63.0	53.6	53.6	54.1	44.9	44.9	49.0	35.8	35.8	39.1	29.9	29.9
Actuated g/C Ratio	0.52	0.45	0.45	0.45	0.37	0.37	0.41	0.30	0.30	0.33	0.25	0.25
v/c Ratio	1.04	0.65	0.25	0.09	1.00	0.54	0.69	1.01	0.16	1.09	0.58	0.40
Control Delay	104.7	31.7	7.6	15.1	74.1	16.2	36.4	83.0	1.2	128.2	45.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	29.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.7	31.7	7.6	15.1	103.3	16.2	36.4	83.0	1.2	128.2	45.7	7.3
LOS	F	C	A	B	F	B	D	F	A	F	D	A
Approach Delay		43.8			74.1			61.1			55.5	
Approach LOS		D			E			E			E	
Queue Length 50th (m)	~40.8	106.0	7.0	2.7	~166.7	25.1	44.6	~136.4	0.0	~31.7	57.3	0.0

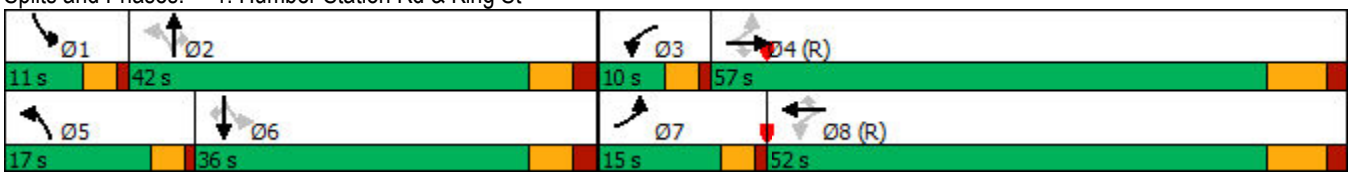
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#91.6	148.2	22.1	7.0	#246.3	54.5	67.6	#210.7	1.8	#79.1	86.2	19.2
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Base Capacity (vph)	209	806	755	249	662	579	377	539	576	158	450	518
Starvation Cap Reductn	0	0	0	0	52	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.65	0.25	0.09	1.09	0.54	0.69	1.01	0.16	1.09	0.58	0.40

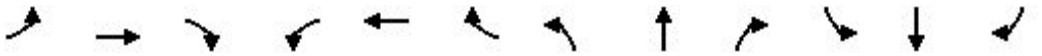
Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 78.8 (66%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 59.2	Intersection LOS: E
Intersection Capacity Utilization 100.6%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Humber Station Rd & King St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Future Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	215	525	185	23	665	312	261	543	91	173	262	208
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Cap, veh/h	216	812	682	208	673	472	357	549	477	163	457	369
Arrive On Green	0.09	0.44	0.44	0.01	0.12	0.12	0.11	0.30	0.30	0.06	0.25	0.25
Sat Flow, veh/h	1668	1841	1547	1316	1811	1271	1725	1841	1598	1697	1841	1485
Grp Volume(v), veh/h	215	525	185	23	665	312	261	543	91	173	262	208
Grp Sat Flow(s),veh/h/ln	1668	1841	1547	1316	1811	1271	1725	1841	1598	1697	1841	1485
Q Serve(g_s), s	10.9	26.8	9.1	1.3	44.0	28.1	13.0	35.2	5.1	7.0	15.0	14.7
Cycle Q Clear(g_c), s	10.9	26.8	9.1	1.3	44.0	28.1	13.0	35.2	5.1	7.0	15.0	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	812	682	208	673	472	357	549	477	163	457	369
V/C Ratio(X)	1.00	0.65	0.27	0.11	0.99	0.66	0.73	0.99	0.19	1.06	0.57	0.56
Avail Cap(c_a), veh/h	216	812	682	245	673	472	357	549	477	163	457	369
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	26.2	21.3	24.3	52.4	45.4	29.9	41.9	31.3	39.7	39.5	39.4
Incr Delay (d2), s/veh	60.3	4.0	1.0	0.2	31.9	7.1	7.4	35.4	0.2	88.7	1.7	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.9	0.2	0.0	6.0	0.9	0.7	5.4	0.0	4.0	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.0	30.2	22.3	24.5	84.2	52.5	37.3	77.3	31.5	128.4	41.3	41.4
LnGrp LOS	F	C	C	C	F	D	D	E	C	F	D	D
Approach Vol, veh/h		925			1000			895			643	
Approach Delay, s/veh		43.7			73.0			61.0			64.8	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	42.0	6.7	60.3	17.0	36.0	15.0	52.0
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Q Clear Time (g_c+I1), s	9.0	37.2	3.3	28.8	15.0	17.0	12.9	46.0
Green Ext Time (p_c), s	0.0	0.0	0.0	5.0	0.0	2.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Future Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	215	525	185	23	665	312	261	543	91	173	262	208
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	216	812	682	208	673	472	357	549	477	163	457	369
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.44	0.44	0.01	0.12	0.12	0.11	0.30	0.30	0.06	0.25	0.25
Unsig. Movement Delay												
Ln Grp Delay, s/veh	95.0	30.2	22.3	24.5	84.2	52.5	37.3	77.3	31.5	128.4	41.3	41.4
Ln Grp LOS	F	C	C	C	F	D	D	E	C	F	D	D
Approach Vol, veh/h		925			1000			895			643	
Approach Delay, s/veh		43.7			73.0			61.0			64.8	
Approach LOS		D			E			E			E	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	11.0	42.0	6.7	60.3	17.0	36.0	15.0	52.0
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Allow Headway (MAH), s	4.6	5.6	4.9	5.5	4.6	5.3	4.7	5.5
Max Q Clear (g_c+I1), s	9.0	37.2	3.3	28.8	15.0	17.0	12.9	46.0
Green Ext Time (g_e), s	0.0	0.0	0.0	5.0	0.0	2.3	0.0	0.0
Prob of Phs Call (p_c)	1.00	1.00	0.54	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	1.00	1.00	0.09	1.00	0.14	1.00	1.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1697		1316		1725		1668	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1841		1841		1841		1811

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1598		1547		1485		1271

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	173	0	23	0	261	0	215	0
Grp Sat Flow (s), veh/h/ln	1697	0	1316	0	1725	0	1668	0
Q Serve Time (g_s), s	7.0	0.0	1.3	0.0	13.0	0.0	10.9	0.0
Cycle Q Clear Time (g_c), s	7.0	0.0	1.3	0.0	13.0	0.0	10.9	0.0
Perm LT Sat Flow (s_l), veh/h/ln	756	0	546	0	894	0	539	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	29.8	0.0	44.6	0.0	31.8	0.0	46.6	0.0
Perm LT Serve Time (g_u), s	0.6	0.0	26.2	0.0	14.8	0.0	0.6	0.0
Perm LT Q Serve Time (g_ps), s	0.6	0.0	0.8	0.0	7.9	0.0	0.6	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	163	0	208	0	357	0	216	0
V/C Ratio (X)	1.06	0.00	0.11	0.00	0.73	0.00	1.00	0.00
Avail Cap (c_a), veh/h	163	0	245	0	357	0	216	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	39.7	0.0	24.3	0.0	29.9	0.0	34.7	0.0
Incr Delay (d2), s/veh	88.7	0.0	0.2	0.0	7.4	0.0	60.3	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	128.4	0.0	24.5	0.0	37.3	0.0	95.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	4.0	0.0	0.0	0.0	0.7	0.0	3.6	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	4.0	0.0	0.0	0.0	0.7	0.0	3.6	0.0
%ile Storage Ratio (RQ%)	20.06	0.00	0.08	0.00	3.63	0.00	18.37	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	543	0	525	0	262	0	665
Grp Sat Flow (s), veh/h/ln	0	1841	0	1841	0	1841	0	1811
Q Serve Time (g_s), s	0.0	35.2	0.0	26.8	0.0	15.0	0.0	44.0
Cycle Q Clear Time (g_c), s	0.0	35.2	0.0	26.8	0.0	15.0	0.0	44.0
Lane Grp Cap (c), veh/h	0	549	0	812	0	457	0	673
V/C Ratio (X)	0.00	0.99	0.00	0.65	0.00	0.57	0.00	0.99
Avail Cap (c_a), veh/h	0	549	0	812	0	457	0	673
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	41.9	0.0	26.2	0.0	39.5	0.0	52.4
Incr Delay (d2), s/veh	0.0	35.4	0.0	4.0	0.0	1.7	0.0	31.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	77.3	0.0	30.2	0.0	41.3	0.0	84.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	5.4	0.0	0.9	0.0	0.2	0.0	6.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.4	0.0	0.9	0.0	0.2	0.0	6.0
%ile Storage Ratio (RQ%)	0.00	9.91	0.00	0.72	0.00	0.19	0.00	9.80
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	91	0	185	0	208	0	312
Grp Sat Flow (s), veh/h/ln	0	1598	0	1547	0	1485	0	1271
Q Serve Time (g_s), s	0.0	5.1	0.0	9.1	0.0	14.7	0.0	28.1
Cycle Q Clear Time (g_c), s	0.0	5.1	0.0	9.1	0.0	14.7	0.0	28.1
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	477	0	682	0	369	0	472
V/C Ratio (X)	0.00	0.19	0.00	0.27	0.00	0.56	0.00	0.66
Avail Cap (c_a), veh/h	0	477	0	682	0	369	0	472
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	31.3	0.0	21.3	0.0	39.4	0.0	45.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	1.0	0.0	2.0	0.0	7.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	31.5	0.0	22.3	0.0	41.4	0.0	52.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.9
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.9
%ile Storage Ratio (RQ%)	0.00	0.23	0.00	1.71	0.00	0.18	0.00	10.04
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.5
HCM 6th LOS	E

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	38

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	194	65	776	253	21	424
Future Vol, veh/h	194	65	776	253	21	424
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	0	10	0	0	6
Mvmt Flow	206	69	826	269	22	451

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1231	548	0	0	1095	0
Stage 1	961	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 172	485	-	-	645	-
Stage 1	337	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 164	485	-	-	645	-
Mov Cap-2 Maneuver	~ 164	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	252.8	0	0.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	197	645	-
HCM Lane V/C Ratio	-	-	1.399	0.035	-
HCM Control Delay (s)	-	-	252.8	10.8	0.2
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	16.2	0.1	-

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

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	38	197	39	0	178	0	40	0	0	0	0	41
Future Vol, veh/h	38	197	39	0	178	0	40	0	0	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	214	42	0	193	0	43	0	0	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	193	0	0	256	0	0	533	510	235	510	531	193
Stage 1	-	-	-	-	-	-	317	317	-	193	193	-
Stage 2	-	-	-	-	-	-	216	193	-	317	338	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1392	-	-	1321	-	-	461	469	809	477	457	854
Stage 1	-	-	-	-	-	-	698	658	-	813	745	-
Stage 2	-	-	-	-	-	-	791	745	-	698	644	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1321	-	-	425	453	809	464	441	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	425	453	-	464	441	-
Stage 1	-	-	-	-	-	-	674	635	-	785	745	-
Stage 2	-	-	-	-	-	-	750	745	-	674	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	14.4	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	1392	-	-	1321	-	-	854
HCM Lane V/C Ratio	0.102	0.03	-	-	-	-	-	0.052
HCM Control Delay (s)	14.4	7.7	0	-	0	-	-	9.4
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	118	40	0	97	0	40	0	0	0	0	41
Future Vol, veh/h	39	118	40	0	97	0	40	0	0	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	42	128	43	0	105	0	43	0	0	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	171	0	0	362	339	150	339	360	105
Stage 1	-	-	-	-	-	-	234	234	-	105	105	-
Stage 2	-	-	-	-	-	-	128	105	-	234	255	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1499	-	-	1418	-	-	598	586	902	619	570	955
Stage 1	-	-	-	-	-	-	774	715	-	906	812	-
Stage 2	-	-	-	-	-	-	881	812	-	774	700	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1418	-	-	557	568	902	604	552	955
Mov Cap-2 Maneuver	-	-	-	-	-	-	557	568	-	604	552	-
Stage 1	-	-	-	-	-	-	750	693	-	878	812	-
Stage 2	-	-	-	-	-	-	840	812	-	750	678	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	12	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	557	1499	-	-	1418	-	-	955
HCM Lane V/C Ratio	0.078	0.028	-	-	-	-	-	0.047
HCM Control Delay (s)	12	7.5	0	-	0	-	-	9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	0	0	40	0	0
Future Vol, veh/h	32	0	0	40	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	35	0	0	43	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	23	22	0	0	43	0
Stage 1	22	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	998	1061	-	-	1579	-
Stage 1	1006	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	998	1061	-	-	1579	-
Mov Cap-2 Maneuver	998	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1028	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	998	1579	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	38	40	0	34	0	31	0	0	0	0	32
Future Vol, veh/h	40	38	40	0	34	0	31	0	0	0	0	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	43	41	43	0	37	0	34	0	0	0	0	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.4	7.7	6.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	34%	0%	0%
Vol Thru, %	0%	32%	100%	0%
Vol Right, %	0%	34%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	118	34	32
LT Vol	31	40	0	0
Through Vol	0	38	34	0
RT Vol	0	40	0	32
Lane Flow Rate	34	128	37	35
Geometry Grp	1	1	1	1
Degree of Util (X)	0.041	0.139	0.042	0.035
Departure Headway (Hd)	4.414	3.912	4.117	3.611
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	804	913	864	977
Service Time	2.483	1.949	2.168	1.686
HCM Lane V/C Ratio	0.042	0.14	0.043	0.036
HCM Control Delay	7.7	7.6	7.4	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.1	0.1

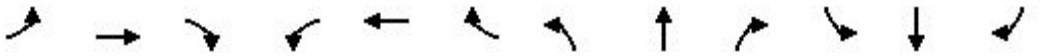
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	31	0	0	40	0
Future Vol, veh/h	0	31	0	0	40	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	34	0	0	43	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	86	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	920	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	920	-	-	-	-	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	
HCM LOS	-		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-



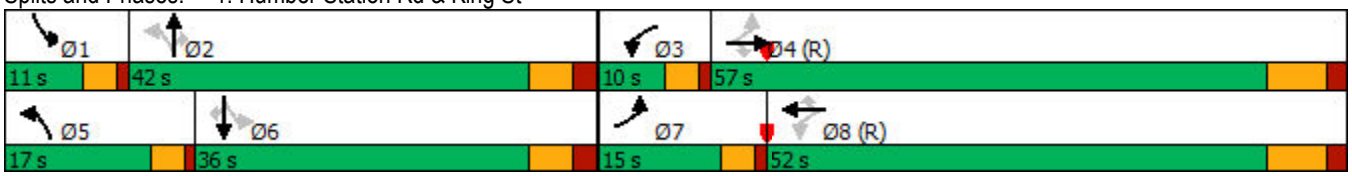
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	354	179	6	385	291	207	425	13	182	246	204
Future Volume (vph)	228	354	179	6	385	291	207	425	13	182	246	204
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1842	1426	1785	1860	1597	1594	1879	1479	1785	1879	956
Flt Permitted	0.296			0.540			0.405			0.155		
Satd. Flow (perm)	556	1842	1426	1015	1860	1597	679	1879	1479	291	1879	956
Satd. Flow (RTOR)			138			175			149			215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	12%	0%	1%	0%	12%	0%	8%	0%	0%	67%
Adj. Flow (vph)	240	373	188	6	405	306	218	447	14	192	259	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	373	188	6	405	306	218	447	14	192	259	215
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.2	21.2	9.0	21.2	21.2
Total Split (s)	15.0	57.0	57.0	10.0	52.0	52.0	17.0	42.0	42.0	11.0	36.0	36.0
Total Split (%)	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	14.2%	35.0%	35.0%	9.2%	30.0%	30.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	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	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	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	6.2	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	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	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	60.2	54.8	54.8	50.0	40.9	40.9	49.1	32.2	32.2	46.1	30.5	30.5
Actuated g/C Ratio	0.50	0.46	0.46	0.42	0.34	0.34	0.41	0.27	0.27	0.38	0.25	0.25
v/c Ratio	0.60	0.44	0.26	0.01	0.64	0.46	0.56	0.89	0.03	0.69	0.54	0.53
Control Delay	25.2	25.9	8.1	16.8	39.9	16.0	27.8	62.1	0.1	37.6	43.2	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	25.9	8.1	16.8	40.0	16.0	27.8	62.1	0.1	37.6	43.2	10.0
LOS	C	C	A	B	D	B	C	E	A	D	D	B
Approach Delay		21.5			29.6			49.8			30.9	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	35.7	63.6	7.1	0.8	92.9	26.1	32.7	104.2	0.0	27.9	53.4	0.0

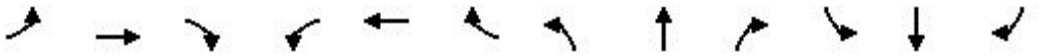
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	51.2	101.1	24.6	3.1	118.9	50.1	54.0	#151.0	0.0	#65.8	84.5	22.7
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Base Capacity (vph)	404	852	733	464	715	721	396	560	545	278	492	409
Starvation Cap Reductn	0	0	0	0	16	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.44	0.26	0.01	0.58	0.42	0.55	0.80	0.03	0.69	0.53	0.53

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 78.8 (66%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 32.4 Intersection LOS: C
Intersection Capacity Utilization 83.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Humber Station Rd & King St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Future Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	240	373	188	6	405	306	218	447	14	192	259	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Cap, veh/h	353	852	665	350	701	598	348	567	450	244	472	191
Arrive On Green	0.09	0.46	0.46	0.00	0.12	0.12	0.11	0.30	0.30	0.06	0.25	0.25
Sat Flow, veh/h	1810	1870	1459	1810	1885	1610	1640	1900	1510	1810	1900	769
Grp Volume(v), veh/h	240	373	188	6	405	306	218	447	14	192	259	215
Grp Sat Flow(s),veh/h/ln	1810	1870	1459	1810	1885	1610	1640	1900	1510	1810	1900	769
Q Serve(g_s), s	9.5	16.3	9.7	0.2	24.3	21.3	11.5	25.9	0.8	7.0	14.2	29.8
Cycle Q Clear(g_c), s	9.5	16.3	9.7	0.2	24.3	21.3	11.5	25.9	0.8	7.0	14.2	29.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	353	852	665	350	701	598	348	567	450	244	472	191
V/C Ratio(X)	0.68	0.44	0.28	0.02	0.58	0.51	0.63	0.79	0.03	0.79	0.55	1.13
Avail Cap(c_a), veh/h	353	852	665	427	701	598	348	567	450	244	472	191
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	22.2	20.4	23.5	43.8	42.4	28.7	38.6	29.8	39.7	39.3	45.1
Incr Delay (d2), s/veh	5.2	1.6	1.1	0.0	3.5	3.1	3.5	7.4	0.0	15.8	1.4	103.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.4	0.2	0.0	0.7	0.5	0.3	1.2	0.0	1.1	0.2	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	23.8	21.5	23.5	47.2	45.5	32.2	46.0	29.8	55.5	40.6	148.3
LnGrp LOS	C	C	C	C	D	D	C	D	C	E	D	F
Approach Vol, veh/h		801			717			679			666	
Approach Delay, s/veh		24.6			46.3			41.2			79.6	
Approach LOS		C			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	42.0	4.9	62.1	17.0	36.0	15.0	52.0
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Q Clear Time (g_c+I1), s	9.0	27.9	2.2	18.3	13.5	31.8	11.5	26.3
Green Ext Time (p_c), s	0.0	2.0	0.0	4.0	0.0	0.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	46.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Future Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	240	373	188	6	405	306	218	447	14	192	259	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	353	852	665	350	701	598	348	567	450	244	472	191
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.09	0.46	0.46	0.00	0.12	0.12	0.11	0.30	0.30	0.06	0.25	0.25
Unsig. Movement Delay												
Ln Grp Delay, s/veh	28.2	23.8	21.5	23.5	47.2	45.5	32.2	46.0	29.8	55.5	40.6	148.3
Ln Grp LOS	C	C	C	C	D	D	C	D	C	E	D	F
Approach Vol, veh/h		801			717			679			666	
Approach Delay, s/veh		24.6			46.3			41.2			79.6	
Approach LOS		C			D			D			E	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	11.0	42.0	4.9	62.1	17.0	36.0	15.0	52.0
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	7.0	* 36	6.0	49.6	13.0	* 30	11.0	44.6
Max Allow Headway (MAH), s	4.6	5.6	4.6	5.4	4.7	5.5	4.6	5.3
Max Q Clear (g_c+I1), s	9.0	27.9	2.2	18.3	13.5	31.8	11.5	26.3
Green Ext Time (g_e), s	0.0	2.0	0.0	4.0	0.0	0.0	0.0	4.3
Prob of Phs Call (p_c)	1.00	1.00	0.18	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.59	1.00	0.00	1.00	1.00	1.00	0.11

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1810		1810		1640		1810	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1900		1870		1900		1885

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1510		1459		769		1610

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	192	0	6	0	218	0	240	0
Grp Sat Flow (s), veh/h/ln	1810	0	1810	0	1640	0	1810	0
Q Serve Time (g_s), s	7.0	0.0	0.2	0.0	11.5	0.0	9.5	0.0
Cycle Q Clear Time (g_c), s	7.0	0.0	0.2	0.0	11.5	0.0	9.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	946	0	862	0	847	0	750	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	29.8	0.0	44.6	0.0	31.8	0.0	46.6	0.0
Perm LT Serve Time (g_u), s	9.9	0.0	38.4	0.0	15.6	0.0	20.3	0.0
Perm LT Q Serve Time (g_ps), s	9.9	0.0	0.0	0.0	5.6	0.0	12.4	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	244	0	350	0	348	0	353	0
V/C Ratio (X)	0.79	0.00	0.02	0.00	0.63	0.00	0.68	0.00
Avail Cap (c_a), veh/h	244	0	427	0	348	0	353	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	39.7	0.0	23.5	0.0	28.7	0.0	23.0	0.0
Incr Delay (d2), s/veh	15.8	0.0	0.0	0.0	3.5	0.0	5.2	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	55.5	0.0	23.5	0.0	32.2	0.0	28.2	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	1.1	0.0	0.0	0.0	0.3	0.0	0.5	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.1	0.0	0.0	0.0	0.3	0.0	0.5	0.0
%ile Storage Ratio (RQ%)	5.02	0.00	0.01	0.00	1.77	0.00	2.42	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	447	0	373	0	259	0	405
Grp Sat Flow (s), veh/h/ln	0	1900	0	1870	0	1900	0	1885
Q Serve Time (g_s), s	0.0	25.9	0.0	16.3	0.0	14.2	0.0	24.3
Cycle Q Clear Time (g_c), s	0.0	25.9	0.0	16.3	0.0	14.2	0.0	24.3
Lane Grp Cap (c), veh/h	0	567	0	852	0	472	0	701
V/C Ratio (X)	0.00	0.79	0.00	0.44	0.00	0.55	0.00	0.58
Avail Cap (c_a), veh/h	0	567	0	852	0	472	0	701
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	38.6	0.0	22.2	0.0	39.3	0.0	43.8
Incr Delay (d2), s/veh	0.0	7.4	0.0	1.6	0.0	1.4	0.0	3.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	46.0	0.0	23.8	0.0	40.6	0.0	47.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.2	0.0	0.4	0.0	0.2	0.0	0.7

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	1.2	0.0	0.4	0.0	0.2	0.0	0.7
%ile Storage Ratio (RQ%)	0.00	2.06	0.00	0.31	0.00	0.14	0.00	1.06
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	14	0	188	0	215	0	306
Grp Sat Flow (s), veh/h/ln	0	1510	0	1459	0	769	0	1610
Q Serve Time (g_s), s	0.0	0.8	0.0	9.7	0.0	29.8	0.0	21.3
Cycle Q Clear Time (g_c), s	0.0	0.8	0.0	9.7	0.0	29.8	0.0	21.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	450	0	665	0	191	0	598
V/C Ratio (X)	0.00	0.03	0.00	0.28	0.00	1.13	0.00	0.51
Avail Cap (c_a), veh/h	0	450	0	665	0	191	0	598
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	29.8	0.0	20.4	0.0	45.1	0.0	42.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	103.2	0.0	3.1
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.8	0.0	21.5	0.0	148.3	0.0	45.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	5.5	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	0.2	0.0	5.5	0.0	0.5
%ile Storage Ratio (RQ%)	0.00	0.03	0.00	1.91	0.00	6.86	0.00	4.59
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.8
HCM 6th LOS	D

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	33.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	229	46	642	288	31	396
Future Vol, veh/h	229	46	642	288	31	396
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	7
Mvmt Flow	239	48	669	300	32	413

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1090	485	0	0	969	0
Stage 1	819	-	-	-	-	-
Stage 2	271	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 213	533	-	-	719	-
Stage 1	399	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 201	533	-	-	719	-
Mov Cap-2 Maneuver	~ 201	-	-	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	198.6	0	1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	224	719	-
HCM Lane V/C Ratio	-	-	1.279	0.045	-
HCM Control Delay (s)	-	-	198.6	10.2	0.3
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	15	0.1	-

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

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	46	227	46	0	190	0	42	0	0	0	0	43
Future Vol, veh/h	46	227	46	0	190	0	42	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	247	50	0	207	0	46	0	0	0	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	297	0	0	603	579	272	579	604	207
Stage 1	-	-	-	-	-	-	372	372	-	207	207	-
Stage 2	-	-	-	-	-	-	231	207	-	372	397	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1376	-	-	1276	-	-	414	429	772	429	415	839
Stage 1	-	-	-	-	-	-	653	622	-	800	734	-
Stage 2	-	-	-	-	-	-	776	734	-	653	607	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1276	-	-	378	410	772	414	397	839
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	410	-	414	397	-
Stage 1	-	-	-	-	-	-	624	595	-	765	734	-
Stage 2	-	-	-	-	-	-	733	734	-	624	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	15.8	9.5
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	378	1376	-	-	1276	-	-	839
HCM Lane V/C Ratio	0.121	0.036	-	-	-	-	-	0.056
HCM Control Delay (s)	15.8	7.7	0	-	0	-	-	9.5
HCM Lane LOS	C	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	46	134	47	0	104	0	43	0	0	0	0	43
Future Vol, veh/h	46	134	47	0	104	0	43	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	146	51	0	113	0	47	0	0	0	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	197	0	0	409	385	172	385	410	113
Stage 1	-	-	-	-	-	-	272	272	-	113	113	-
Stage 2	-	-	-	-	-	-	137	113	-	272	297	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1489	-	-	1388	-	-	556	552	877	577	534	945
Stage 1	-	-	-	-	-	-	738	688	-	897	806	-
Stage 2	-	-	-	-	-	-	871	806	-	738	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1388	-	-	513	531	877	560	514	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	531	-	560	514	-
Stage 1	-	-	-	-	-	-	710	662	-	863	806	-
Stage 2	-	-	-	-	-	-	828	806	-	710	646	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	12.7	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	513	1489	-	-	1388	-	-	945
HCM Lane V/C Ratio	0.091	0.034	-	-	-	-	-	0.049
HCM Control Delay (s)	12.7	7.5	0	-	0	-	-	9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	0	0	46	0	0
Future Vol, veh/h	35	0	0	46	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	38	0	0	50	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	26	25	0	0	50	0
Stage 1	25	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	995	1057	-	-	1570	-
Stage 1	1003	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	995	1057	-	-	1570	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1028	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	995	1570	-
HCM Lane V/C Ratio	-	-	0.038	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	42	46	0	34	0	35	0	0	0	0	35
Future Vol, veh/h	46	42	46	0	34	0	35	0	0	0	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	46	50	0	37	0	38	0	0	0	0	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.4	7.8	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	34%	0%	0%
Vol Thru, %	0%	31%	100%	0%
Vol Right, %	0%	34%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	134	34	35
LT Vol	35	46	0	0
Through Vol	0	42	34	0
RT Vol	0	46	0	35
Lane Flow Rate	38	146	37	38
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.159	0.043	0.039
Departure Headway (Hd)	4.446	3.923	4.144	3.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	910	857	965
Service Time	2.528	1.967	2.206	1.732
HCM Lane V/C Ratio	0.048	0.16	0.043	0.039
HCM Control Delay	7.8	7.7	7.4	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.6	0.1	0.1

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	35	0	0	46	0
Future Vol, veh/h	0	35	0	0	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	38	0	0	50	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	100	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	904	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	904	-	-	-	-	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	
HCM LOS	-		

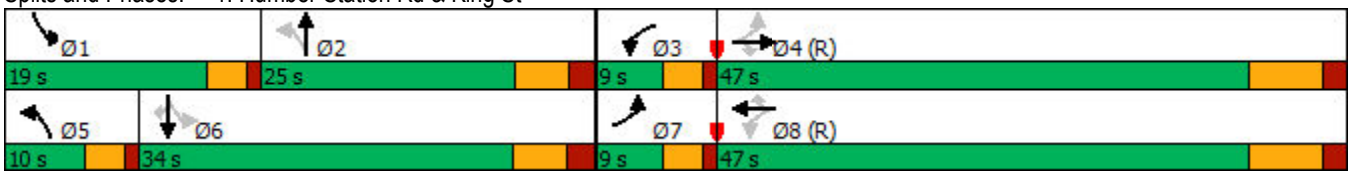
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	468	346	69	443	135	69	187	19	214	364	193
Future Volume (vph)	113	468	346	69	443	135	69	187	19	214	364	193
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.986				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1724	1465	1785	1773	1597	1190	3344	0	1417	1860	1201
Flt Permitted	0.332			0.341			0.424			0.502		
Satd. Flow (perm)	624	1724	1465	641	1773	1597	531	3344	0	749	1860	1201
Satd. Flow (RTOR)			182			166		10				199
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	9%	9%	0%	6%	0%	50%	0%	56%	26%	1%	33%
Adj. Flow (vph)	116	482	357	71	457	139	71	193	20	221	375	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	482	357	71	457	139	71	213	0	221	375	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4		5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.0		9.0	21.2	21.2
Total Split (s)	9.0	47.0	47.0	9.0	47.0	47.0	10.0	25.0		19.0	34.0	34.0
Total Split (%)	9.0%	47.0%	47.0%	9.0%	47.0%	47.0%	10.0%	25.0%		19.0%	34.0%	34.0%
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	Lead	Lag	Lag	Lead	Lag	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	C-Min	None	C-Max	C-Max	None	Min		None	Min	Min
Act Effct Green (s)	52.2	43.8	43.8	50.8	41.5	41.5	24.6	16.7		36.8	26.6	26.6
Actuated g/C Ratio	0.52	0.44	0.44	0.51	0.42	0.42	0.25	0.17		0.37	0.27	0.27
v/c Ratio	0.29	0.64	0.48	0.18	0.62	0.18	0.42	0.38		0.60	0.76	0.43
Control Delay	13.9	28.3	12.9	12.7	28.2	2.6	29.9	36.9		30.4	44.9	7.3
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	13.9	28.3	12.9	12.7	28.2	2.6	29.9	36.9		30.4	44.9	7.3
LOS	B	C	B	B	C	A	C	D		C	D	A
Approach Delay		20.8			21.2			35.1			31.5	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	10.9	80.6	24.7	6.5	74.4	0.0	9.5	19.5		32.9	71.7	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	21.0	119.7	52.0	14.1	110.0	8.1	18.9	30.1		51.8	103.2	17.2
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0			50.0		
Base Capacity (vph)	398	755	744	392	736	760	170	643		376	522	480
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.29	0.64	0.48	0.18	0.62	0.18	0.42	0.33		0.59	0.72	0.41

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 78.8 (79%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Humber Station Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Future Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	116	482	357	71	457	139	71	193	20	221	375	199
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Cap, veh/h	375	794	673	312	802	713	159	484	50	369	436	277
Arrive On Green	0.05	0.45	0.45	0.04	0.44	0.44	0.06	0.15	0.15	0.14	0.23	0.23
Sat Flow, veh/h	1810	1767	1497	1810	1811	1610	1104	3305	339	1443	1885	1196
Grp Volume(v), veh/h	116	482	357	71	457	139	71	104	109	221	375	199
Grp Sat Flow(s),veh/h/ln	1810	1767	1497	1810	1811	1610	1104	1805	1839	1443	1885	1196
Q Serve(g_s), s	3.5	20.7	17.2	2.1	18.8	5.3	5.5	5.2	5.4	12.5	19.1	15.3
Cycle Q Clear(g_c), s	3.5	20.7	17.2	2.1	18.8	5.3	5.5	5.2	5.4	12.5	19.1	15.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	375	794	673	312	802	713	159	265	270	369	436	277
V/C Ratio(X)	0.31	0.61	0.53	0.23	0.57	0.20	0.45	0.39	0.40	0.60	0.86	0.72
Avail Cap(c_a), veh/h	375	794	673	324	802	713	159	343	349	376	524	332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	20.8	19.9	16.0	20.8	17.0	34.3	38.7	38.7	28.4	36.9	35.4
Incr Delay (d2), s/veh	0.5	3.4	3.0	0.4	2.9	0.6	1.9	1.0	1.0	2.5	11.8	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.6	0.0	0.7	0.1	0.1	0.1	0.1	0.3	1.4	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	24.3	22.9	16.4	23.7	17.6	36.2	39.6	39.7	30.9	48.7	41.3
LnGrp LOS	B	C	C	B	C	B	D	D	D	C	D	D
Approach Vol, veh/h		955			667			284			795	
Approach Delay, s/veh		22.8			21.7			38.8			41.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	20.9	8.3	52.4	10.0	29.3	9.0	51.7
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	15.0	* 19	5.0	39.6	6.0	* 28	5.0	39.6
Max Q Clear Time (g_c+I1), s	14.5	7.4	4.1	22.7	7.5	21.1	5.5	20.8
Green Ext Time (p_c), s	0.1	1.0	0.0	5.3	0.0	2.1	0.0	3.9

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Future Volume (veh/h)	113	468	346	69	443	135	69	187	19	214	364	193
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1767	1767	1900	1811	1900	1159	1900	1070	1515	1885	1411
Adj Flow Rate, veh/h	116	482	357	71	457	139	71	193	20	221	375	199
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	9	9	0	6	0	50	0	56	26	1	33
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	375	794	673	312	802	713	159	484	50	369	436	277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.05	0.45	0.45	0.04	0.44	0.44	0.06	0.15	0.15	0.14	0.23	0.23
Unsig. Movement Delay												
Ln Grp Delay, s/veh	16.3	24.3	22.9	16.4	23.7	17.6	36.2	39.6	39.7	30.9	48.7	41.3
Ln Grp LOS	B	C	C	B	C	B	D	D	D	C	D	D
Approach Vol, veh/h		955			667			284			795	
Approach Delay, s/veh		22.8			21.7			38.8			41.9	
Approach LOS		C			C			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	18.5	20.9	8.3	52.4	10.0	29.3	9.0	51.7
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	15.0	* 19	5.0	39.6	6.0	* 28	5.0	39.6
Max Allow Headway (MAH), s	4.8	5.7	4.6	5.4	5.0	5.5	4.6	5.5
Max Q Clear (g_c+I1), s	14.5	7.4	4.1	22.7	7.5	21.1	5.5	20.8
Green Ext Time (g_e), s	0.1	1.0	0.0	5.3	0.0	2.1	0.0	3.9
Prob of Phs Call (p_c)	1.00	1.00	0.86	1.00	0.86	1.00	0.96	1.00
Prob of Max Out (p_x)	1.00	0.08	1.00	0.21	1.00	0.77	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1443		1810		1104		1810	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3305		1767		1885		1811

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		339		1497		1196		1610

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	221	0	71	0	71	0	116	0
Grp Sat Flow (s), veh/h/ln	1443	0	1810	0	1104	0	1810	0
Q Serve Time (g_s), s	12.5	0.0	2.1	0.0	5.5	0.0	3.5	0.0
Cycle Q Clear Time (g_c), s	12.5	0.0	2.1	0.0	5.5	0.0	3.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	946	0	666	0	520	0	835	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	16.7	0.0	44.3	0.0	14.7	0.0	44.3	0.0
Perm LT Serve Time (g_u), s	9.3	0.0	24.3	0.0	4.1	0.0	25.4	0.0
Perm LT Q Serve Time (g_ps), s	2.2	0.0	2.4	0.0	1.7	0.0	3.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	369	0	312	0	159	0	375	0
V/C Ratio (X)	0.60	0.00	0.23	0.00	0.45	0.00	0.31	0.00
Avail Cap (c_a), veh/h	376	0	324	0	159	0	375	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	28.4	0.0	16.0	0.0	34.3	0.0	15.8	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.4	0.0	1.9	0.0	0.5	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	30.9	0.0	16.4	0.0	36.2	0.0	16.3	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	1.48	0.00	0.15	0.00	0.57	0.00	0.23	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	104	0	482	0	375	0	457
Grp Sat Flow (s), veh/h/ln	0	1805	0	1767	0	1885	0	1811
Q Serve Time (g_s), s	0.0	5.2	0.0	20.7	0.0	19.1	0.0	18.8
Cycle Q Clear Time (g_c), s	0.0	5.2	0.0	20.7	0.0	19.1	0.0	18.8
Lane Grp Cap (c), veh/h	0	265	0	794	0	436	0	802
V/C Ratio (X)	0.00	0.39	0.00	0.61	0.00	0.86	0.00	0.57
Avail Cap (c_a), veh/h	0	343	0	794	0	524	0	802
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	38.7	0.0	20.8	0.0	36.9	0.0	20.8
Incr Delay (d2), s/veh	0.0	1.0	0.0	3.4	0.0	11.8	0.0	2.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	39.6	0.0	24.3	0.0	48.7	0.0	23.7
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.8	0.0	1.4	0.0	0.7

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.8	0.0	1.4	0.0	0.7
%ile Storage Ratio (RQ%)	0.00	0.12	0.00	0.64	0.00	1.18	0.00	1.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	109	0	357	0	199	0	139
Grp Sat Flow (s), veh/h/ln	0	1839	0	1497	0	1196	0	1610
Q Serve Time (g_s), s	0.0	5.4	0.0	17.2	0.0	15.3	0.0	5.3
Cycle Q Clear Time (g_c), s	0.0	5.4	0.0	17.2	0.0	15.3	0.0	5.3
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.18	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	270	0	673	0	277	0	713
V/C Ratio (X)	0.00	0.40	0.00	0.53	0.00	0.72	0.00	0.20
Avail Cap (c_a), veh/h	0	349	0	673	0	332	0	713
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	38.7	0.0	19.9	0.0	35.4	0.0	17.0
Incr Delay (d2), s/veh	0.0	1.0	0.0	3.0	0.0	5.9	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	39.7	0.0	22.9	0.0	41.3	0.0	17.6
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.6	0.0	0.5	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.6	0.0	0.5	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	0.13	0.00	5.31	0.00	0.47	0.00	1.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	130	7	363	99	14	636
Future Volume (vph)	130	7	363	99	14	636
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.993		0.968			
Flt Protected	0.955					0.999
Satd. Flow (prot)	1782	0	3456	0	0	3338
Flt Permitted	0.955					0.941
Satd. Flow (perm)	1782	0	3456	0	0	3144
Satd. Flow (RTOR)	5		85			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	144	8	403	110	16	707
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	513	0	0	723
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	23.0		37.0		37.0	37.0
Total Split (%)	38.3%		61.7%		61.7%	61.7%
Yellow Time (s)	4.0		4.0		4.0	4.0
All-Red Time (s)	2.0		2.0		2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	10.2		41.4			41.4
Actuated g/C Ratio	0.17		0.69			0.69
v/c Ratio	0.49		0.21			0.33
Control Delay	26.6		4.4			6.0
Queue Delay	0.0		0.0			0.0
Total Delay	26.6		4.4			6.0
LOS	C		A			A
Approach Delay	26.6		4.4			6.0
Approach LOS	C		A			A
Queue Length 50th (m)	15.6		9.2			17.7

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	28.6		18.5			32.5
Internal Link Dist (m)	27.9		58.1			86.5
Turn Bay Length (m)						
Base Capacity (vph)	508		2412			2170
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.30		0.21			0.33

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 45.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Humber Station Rd & Street B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	130	7	363	99	14	636
Future Volume (veh/h)	130	7	363	99	14	636
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	144	8	403	110	16	707
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	7
Cap, veh/h	191	11	1931	522	79	2266
Arrive On Green	0.11	0.11	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1693	94	2904	759	25	3379
Grp Volume(v), veh/h	153	0	257	256	386	337
Grp Sat Flow(s),veh/h/ln	1798	0	1805	1763	1769	1553
Q Serve(g_s), s	4.9	0.0	3.1	3.2	0.0	5.2
Cycle Q Clear(g_c), s	4.9	0.0	3.1	3.2	5.1	5.2
Prop In Lane	0.94	0.05		0.43	0.04	
Lane Grp Cap(c), veh/h	203	0	1240	1212	1278	1067
V/C Ratio(X)	0.75	0.00	0.21	0.21	0.30	0.32
Avail Cap(c_a), veh/h	510	0	1240	1212	1278	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	3.4	3.4	3.7	3.8
Incr Delay (d2), s/veh	5.6	0.0	0.4	0.4	0.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.1	0.1	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.4	0.0	3.8	3.8	4.3	4.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	153		513			723
Approach Delay, s/veh	31.4		3.8			4.4
Approach LOS	C		A			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		47.2			47.2	12.8
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		31.0			31.0	17.0
Max Q Clear Time (g_c+I1), s		5.2			7.2	6.9
Green Ext Time (p_c), s		4.0			5.7	0.4

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	130	7	363	99	14	636
Future Volume (veh/h)	130	7	363	99	14	636
Number	3	18	2	12	1	6
Initial Q, veh	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Lanes Open During Work Zone						
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	144	8	403	110	16	707
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	7
Opposing Right Turn Influence	Yes				Yes	
Cap, veh/h	191	11	1931	522	79	2266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.11	0.11	0.69	0.69	0.69	0.69
Unsig. Movement Delay						
Ln Grp Delay, s/veh	31.4	0.0	3.8	3.8	4.3	4.5
Ln Grp LOS	C	A	A	A	A	A
Approach Vol, veh/h	153		513			723
Approach Delay, s/veh	31.4		3.8			4.4
Approach LOS	C		A			A

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	8			6		
Case No		8.0	12.0			8.0		
Phs Duration (G+Y+Rc), s		47.2	12.8			47.2		
Change Period (Y+Rc), s		6.0	6.0			6.0		
Max Green (Gmax), s		31.0	17.0			31.0		
Max Allow Headway (MAH), s		5.8	4.6			5.7		
Max Q Clear (g_c+I1), s		5.2	6.9			7.2		
Green Ext Time (g_e), s		4.0	0.4			5.7		
Prob of Phs Call (p_c)		1.00	0.92			1.00		
Prob of Max Out (p_x)		0.00	0.02			0.00		
Left-Turn Movement Data								
Assigned Mvmt		5	3			1		
Mvmt Sat Flow, veh/h		0	1693			25		
Through Movement Data								
Assigned Mvmt		2	8			6		
Mvmt Sat Flow, veh/h		2904	12			3379		
Right-Turn Movement Data								
Assigned Mvmt		12	18			16		
Mvmt Sat Flow, veh/h		759	94			0		
Left Lane Group Data								
Assigned Mvmt	0	5	3	0	0	1	0	0
Lane Assignment			L+T+R			L+T		

Lanes in Grp	0	0	1	0	0	1	0	0
Grp Vol (v), veh/h	0	0	153	0	0	386	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1798	0	0	1769	0	0
Q Serve Time (g_s), s	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	4.9	0.0	0.0	5.1	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	901	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	41.2	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	38.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	41.2	0.0	0.0	0.0	26.9	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.94	0.00	0.00	0.04	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	203	0	0	1278	0	0
V/C Ratio (X)	0.00	0.00	0.75	0.00	0.00	0.30	0.00	0.00
Avail Cap (c_a), veh/h	0	0	510	0	0	1278	0	0
Upstream Filter (I)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	25.8	0.0	0.0	3.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	5.6	0.0	0.0	0.6	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	31.4	0.0	0.0	4.3	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	2.29	0.00	0.00	0.59	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	257	0	0	0	337	0	0
Grp Sat Flow (s), veh/h/ln	0	1805	0	0	0	1553	0	0
Q Serve Time (g_s), s	0.0	3.1	0.0	0.0	0.0	5.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	3.1	0.0	0.0	0.0	5.2	0.0	0.0
Lane Grp Cap (c), veh/h	0	1240	0	0	0	1067	0	0
V/C Ratio (X)	0.00	0.21	0.00	0.00	0.00	0.32	0.00	0.00
Avail Cap (c_a), veh/h	0	1240	0	0	0	1067	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.4	0.0	0.0	0.0	3.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	0.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.8	0.0	0.0	0.0	4.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.50	0.00	0.00	0.00	0.63	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		T+R						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	256	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1763	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.43	0.05	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1212	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1212	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	89	12	0	123	0	7	0	0	0	0	7
Future Vol, veh/h	12	89	12	0	123	0	7	0	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	97	13	0	134	0	8	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	134	0	0	110	0	0	268	264	104	264	270	134
Stage 1	-	-	-	-	-	-	130	130	-	134	134	-
Stage 2	-	-	-	-	-	-	138	134	-	130	136	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	-	1493	-	-	689	645	956	693	640	920
Stage 1	-	-	-	-	-	-	878	792	-	874	789	-
Stage 2	-	-	-	-	-	-	870	789	-	878	788	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1493	-	-	679	639	956	688	634	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	639	-	688	634	-
Stage 1	-	-	-	-	-	-	870	785	-	866	789	-
Stage 2	-	-	-	-	-	-	863	789	-	870	781	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	10.4	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1463	-	-	1493	-	-	920
HCM Lane V/C Ratio	0.011	0.009	-	-	-	-	-	0.008
HCM Control Delay (s)	10.4	7.5	0	-	0	-	-	8.9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	66	12	0	108	0	8	0	0	0	0	7
Future Vol, veh/h	11	66	12	0	108	0	8	0	0	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	72	13	0	117	0	9	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	117	0	0	85	0	0	224	220	79	220	226	117
Stage 1	-	-	-	-	-	-	103	103	-	117	117	-
Stage 2	-	-	-	-	-	-	121	117	-	103	109	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1484	-	-	1524	-	-	736	682	987	740	677	941
Stage 1	-	-	-	-	-	-	908	814	-	892	803	-
Stage 2	-	-	-	-	-	-	888	803	-	908	809	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1484	-	-	1524	-	-	726	677	987	736	672	941
Mov Cap-2 Maneuver	-	-	-	-	-	-	726	677	-	736	672	-
Stage 1	-	-	-	-	-	-	901	807	-	885	803	-
Stage 2	-	-	-	-	-	-	881	803	-	901	803	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	10	8.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	726	1484	-	-	1524	-	-	941
HCM Lane V/C Ratio	0.012	0.008	-	-	-	-	-	0.008
HCM Control Delay (s)	10	7.4	0	-	0	-	-	8.9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	0	0	21	0	0
Future Vol, veh/h	40	0	0	21	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	43	0	0	23	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	13	12	0	0	23	0
Stage 1	12	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	1011	1074	-	-	1605	-
Stage 1	1016	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1011	1074	-	-	1605	-
Mov Cap-2 Maneuver	1011	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1028	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1011	1605	-
HCM Lane V/C Ratio	-	-	0.043	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	24	21	0	29	0	39	0	0	0	0	40
Future Vol, veh/h	21	24	21	0	29	0	39	0	0	0	0	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	23	26	23	0	32	0	42	0	0	0	0	43
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.3	7.6	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	32%	0%	0%
Vol Thru, %	0%	36%	100%	0%
Vol Right, %	0%	32%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	39	66	29	40
LT Vol	39	21	0	0
Through Vol	0	24	29	0
RT Vol	0	21	0	40
Lane Flow Rate	42	72	32	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.051	0.079	0.036	0.042
Departure Headway (Hd)	4.314	3.947	4.105	3.511
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	826	905	868	1010
Service Time	2.361	1.985	2.15	1.567
HCM Lane V/C Ratio	0.051	0.08	0.037	0.043
HCM Control Delay	7.6	7.3	7.3	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.1	0.1

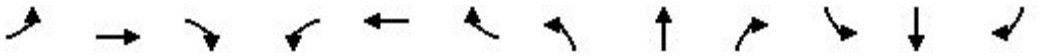
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	0	0	21	0
Future Vol, veh/h	0	39	0	0	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	42	0	0	23	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	46	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	969	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	969	-	-	-	-	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	982	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	
HCM LOS	-		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-



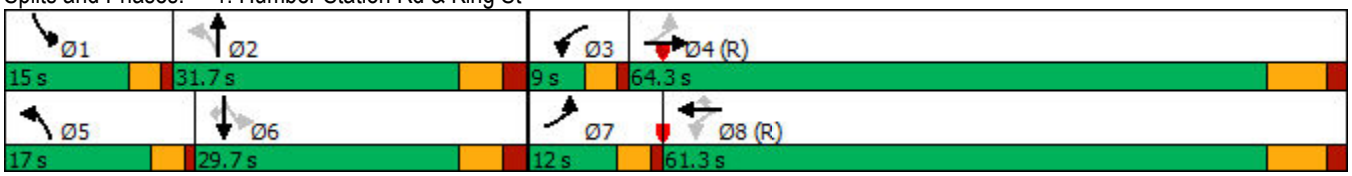
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	509	179	22	645	303	253	527	88	168	254	202
Future Volume (vph)	209	509	179	22	645	303	253	527	88	168	254	202
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1623	1807	1521	1322	1773	1258	1684	3371	0	1653	1807	1452
Flt Permitted	0.144			0.370			0.273			0.183		
Satd. Flow (perm)	246	1807	1521	515	1773	1258	484	3371	0	318	1807	1452
Satd. Flow (RTOR)			102			105		14				208
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	10%	4%	5%	35%	6%	27%	6%	4%	1%	8%	4%	10%
Adj. Flow (vph)	215	525	185	23	665	312	261	543	91	173	262	208
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	525	185	23	665	312	261	634	0	173	262	208
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4		5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.2		9.0	21.2	21.2
Total Split (s)	12.0	64.3	64.3	9.0	61.3	61.3	17.0	31.7		15.0	29.7	29.7
Total Split (%)	10.0%	53.6%	53.6%	7.5%	51.1%	51.1%	14.2%	26.4%		12.5%	24.8%	24.8%
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	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	68.6	60.4	60.4	60.7	52.0	52.0	41.6	24.7		35.8	21.8	21.8
Actuated g/C Ratio	0.57	0.50	0.50	0.51	0.43	0.43	0.35	0.21		0.30	0.18	0.18
v/c Ratio	0.85	0.58	0.23	0.08	0.87	0.52	0.83	0.90		0.77	0.80	0.48
Control Delay	46.5	25.1	9.0	12.0	44.1	19.2	53.8	62.3		53.9	67.8	13.6
Queue Delay	0.0	0.0	0.0	0.0	11.7	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	46.5	25.1	9.0	12.0	55.8	19.2	53.8	62.3		53.9	67.8	13.6
LOS	D	C	A	B	E	B	D	E		D	E	B
Approach Delay		26.9			43.4			59.8			46.5	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	25.7	97.2	11.5	2.4	147.0	36.2	47.6	78.9		29.3	66.4	1.3

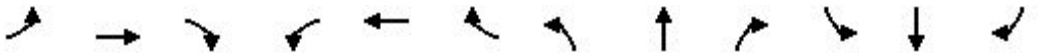
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#61.8	131.4	25.5	6.1	#202.9	62.2	#83.2	#110.3		#57.0	#101.4	29.4
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0			50.0		
Base Capacity (vph)	252	916	821	295	799	624	315	727		227	353	451
Starvation Cap Reductn	0	0	0	0	121	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.85	0.57	0.23	0.08	0.98	0.50	0.83	0.87		0.76	0.74	0.46

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 78.8 (66%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 43.8 — Intersection LOS: D
Intersection Capacity Utilization 90.9% — ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Humber Station Rd & King St





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Future Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	215	525	185	23	665	312	261	543	91	173	262	208
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Cap, veh/h	228	928	780	257	833	584	292	606	101	234	341	275
Arrive On Green	0.07	0.50	0.50	0.01	0.15	0.15	0.11	0.20	0.20	0.09	0.19	0.19
Sat Flow, veh/h	1668	1841	1547	1316	1811	1271	1725	2998	501	1697	1841	1485
Grp Volume(v), veh/h	215	525	185	23	665	312	261	316	318	173	262	208
Grp Sat Flow(s),veh/h/ln	1668	1841	1547	1316	1811	1271	1725	1749	1751	1697	1841	1485
Q Serve(g_s), s	8.0	23.7	8.1	1.1	42.5	27.2	13.0	21.1	21.3	9.9	16.2	15.9
Cycle Q Clear(g_c), s	8.0	23.7	8.1	1.1	42.5	27.2	13.0	21.1	21.3	9.9	16.2	15.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	228	928	780	257	833	584	292	353	354	234	341	275
V/C Ratio(X)	0.94	0.57	0.24	0.09	0.80	0.53	0.89	0.89	0.90	0.74	0.77	0.76
Avail Cap(c_a), veh/h	228	928	780	282	833	584	292	372	372	234	360	291
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	20.6	16.8	18.1	45.5	39.0	38.9	46.6	46.7	36.8	46.4	46.3
Incr Delay (d2), s/veh	43.9	2.5	0.7	0.1	7.9	3.5	27.7	22.4	23.3	11.7	9.2	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.6	0.2	0.0	1.8	0.6	2.2	2.2	2.3	0.8	0.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	23.1	17.5	18.3	53.4	42.5	66.6	69.1	70.0	48.5	55.6	56.6
LnGrp LOS	E	C	B	B	D	D	E	E	E	D	E	E
Approach Vol, veh/h		925			1000			895			643	
Approach Delay, s/veh		33.0			49.2			68.7			54.0	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	30.4	6.7	67.9	17.0	28.4	12.0	62.6
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	11.0	* 26	5.0	56.9	13.0	* 24	8.0	53.9
Max Q Clear Time (g_c+I1), s	11.9	23.3	3.1	25.7	15.0	18.2	10.0	44.5
Green Ext Time (p_c), s	0.0	1.0	0.0	5.6	0.0	1.3	0.0	4.6

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Future Volume (veh/h)	209	509	179	22	645	303	253	527	88	168	254	202
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1752	1841	1826	1381	1811	1500	1811	1841	1885	1781	1841	1752
Adj Flow Rate, veh/h	215	525	185	23	665	312	261	543	91	173	262	208
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	10	4	5	35	6	27	6	4	1	8	4	10
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	228	928	780	257	833	584	292	606	101	234	341	275
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.07	0.50	0.50	0.01	0.15	0.15	0.11	0.20	0.20	0.09	0.19	0.19
Unsig. Movement Delay												
Ln Grp Delay, s/veh	70.6	23.1	17.5	18.3	53.4	42.5	66.6	69.1	70.0	48.5	55.6	56.6
Ln Grp LOS	E	C	B	B	D	D	E	E	E	D	E	E
Approach Vol, veh/h		925			1000			895			643	
Approach Delay, s/veh		33.0			49.2			68.7			54.0	
Approach LOS		C			D			E			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	15.0	30.4	6.7	67.9	17.0	28.4	12.0	62.6
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	11.0	* 26	5.0	56.9	13.0	* 24	8.0	53.9
Max Allow Headway (MAH), s	4.6	5.7	4.9	5.5	4.6	5.3	4.7	5.5
Max Q Clear (g_c+I1), s	11.9	23.3	3.1	25.7	15.0	18.2	10.0	44.5
Green Ext Time (g_e), s	0.0	1.0	0.0	5.6	0.0	1.3	0.0	4.6
Prob of Phs Call (p_c)	1.00	1.00	0.54	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	1.00	1.00	0.02	1.00	1.00	1.00	0.69

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1697		1316		1725		1668	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2998		1841		1841		1811

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		501		1547		1485		1271

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	173	0	23	0	261	0	215	0
Grp Sat Flow (s), veh/h/ln	1697	0	1316	0	1725	0	1668	0
Q Serve Time (g_s), s	9.9	0.0	1.1	0.0	13.0	0.0	8.0	0.0
Cycle Q Clear Time (g_c), s	9.9	0.0	1.1	0.0	13.0	0.0	8.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	756	0	546	0	894	0	539	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	22.2	0.0	55.2	0.0	22.2	0.0	57.2	0.0
Perm LT Serve Time (g_u), s	3.0	0.0	36.7	0.0	6.0	0.0	12.6	0.0
Perm LT Q Serve Time (g_ps), s	3.0	0.0	0.8	0.0	6.0	0.0	12.6	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	234	0	257	0	292	0	228	0
V/C Ratio (X)	0.74	0.00	0.09	0.00	0.89	0.00	0.94	0.00
Avail Cap (c_a), veh/h	234	0	282	0	292	0	228	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	36.8	0.0	18.1	0.0	38.9	0.0	26.7	0.0
Incr Delay (d2), s/veh	11.7	0.0	0.1	0.0	27.7	0.0	43.9	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	48.5	0.0	18.3	0.0	66.6	0.0	70.6	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.8	0.0	0.0	0.0	2.2	0.0	2.8	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.8	0.0	0.0	0.0	2.2	0.0	2.8	0.0
%ile Storage Ratio (RQ%)	3.80	0.00	0.06	0.00	11.07	0.00	14.12	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	316	0	525	0	262	0	665
Grp Sat Flow (s), veh/h/ln	0	1749	0	1841	0	1841	0	1811
Q Serve Time (g_s), s	0.0	21.1	0.0	23.7	0.0	16.2	0.0	42.5
Cycle Q Clear Time (g_c), s	0.0	21.1	0.0	23.7	0.0	16.2	0.0	42.5
Lane Grp Cap (c), veh/h	0	353	0	928	0	341	0	833
V/C Ratio (X)	0.00	0.89	0.00	0.57	0.00	0.77	0.00	0.80
Avail Cap (c_a), veh/h	0	372	0	928	0	360	0	833
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	46.6	0.0	20.6	0.0	46.4	0.0	45.5
Incr Delay (d2), s/veh	0.0	22.4	0.0	2.5	0.0	9.2	0.0	7.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	69.1	0.0	23.1	0.0	55.6	0.0	53.4
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	2.2	0.0	0.6	0.0	0.9	0.0	1.8

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.2	0.0	0.6	0.0	0.9	0.0	1.8
%ile Storage Ratio (RQ%)	0.00	4.04	0.00	0.52	0.00	0.73	0.00	3.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	318	0	185	0	208	0	312
Grp Sat Flow (s), veh/h/ln	0	1751	0	1547	0	1485	0	1271
Q Serve Time (g_s), s	0.0	21.3	0.0	8.1	0.0	15.9	0.0	27.2
Cycle Q Clear Time (g_c), s	0.0	21.3	0.0	8.1	0.0	15.9	0.0	27.2
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.29	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	354	0	780	0	275	0	584
V/C Ratio (X)	0.00	0.90	0.00	0.24	0.00	0.76	0.00	0.53
Avail Cap (c_a), veh/h	0	372	0	780	0	291	0	584
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	46.7	0.0	16.8	0.0	46.3	0.0	39.0
Incr Delay (d2), s/veh	0.0	23.3	0.0	0.7	0.0	10.3	0.0	3.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	70.0	0.0	17.5	0.0	56.6	0.0	42.5
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	2.3	0.0	0.2	0.0	0.8	0.0	0.6
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.3	0.0	0.2	0.0	0.8	0.0	0.6
%ile Storage Ratio (RQ%)	0.00	4.20	0.00	1.43	0.00	0.69	0.00	6.09
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

Notes

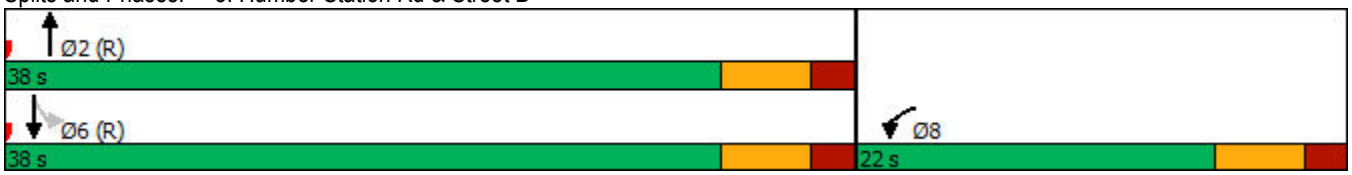
* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	194	65	776	253	21	424
Future Volume (vph)	194	65	776	253	21	424
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.966		0.963			
Flt Protected	0.964					0.998
Satd. Flow (prot)	1750	0	3197	0	0	3370
Flt Permitted	0.964					0.885
Satd. Flow (perm)	1750	0	3197	0	0	2988
Satd. Flow (RTOR)	27		113			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	10%	0%	0%	6%
Adj. Flow (vph)	206	69	826	269	22	451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	275	0	1095	0	0	473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	22.0		38.0		38.0	38.0
Total Split (%)	36.7%		63.3%		63.3%	63.3%
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
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	13.1		34.9			34.9
Actuated g/C Ratio	0.22		0.58			0.58
v/c Ratio	0.68		0.57			0.27
Control Delay	28.1		5.9			7.3
Queue Delay	0.0		0.0			0.0
Total Delay	28.1		5.9			7.3
LOS	C		A			A
Approach Delay	28.1		5.9			7.3
Approach LOS	C		A			A
Queue Length 50th (m)	25.9		42.1			13.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	45.7		44.1			22.4
Internal Link Dist (m)	27.9		58.1			86.5
Turn Bay Length (m)						
Base Capacity (vph)	486		1908			1740
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.57		0.57			0.27

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Humber Station Rd & Street B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	194	65	776	253	21	424
Future Volume (veh/h)	194	65	776	253	21	424
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1752	1900	1900	1811
Adj Flow Rate, veh/h	206	69	826	269	22	451
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	10	0	0	6
Cap, veh/h	251	84	1503	489	109	1897
Arrive On Green	0.19	0.19	0.61	0.61	0.61	0.61
Sat Flow, veh/h	1310	439	2556	803	72	3198
Grp Volume(v), veh/h	276	0	557	538	244	229
Grp Sat Flow(s),veh/h/ln	1755	0	1664	1607	1622	1566
Q Serve(g_s), s	9.1	0.0	11.8	11.8	0.0	4.0
Cycle Q Clear(g_c), s	9.1	0.0	11.8	11.8	3.7	4.0
Prop In Lane	0.75	0.25		0.50	0.09	
Lane Grp Cap(c), veh/h	336	0	1013	978	1053	953
V/C Ratio(X)	0.82	0.00	0.55	0.55	0.23	0.24
Avail Cap(c_a), veh/h	468	0	1013	978	1053	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	6.9	6.9	5.3	5.4
Incr Delay (d2), s/veh	8.0	0.0	2.1	2.2	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.6	0.6	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.3	0.0	9.0	9.1	5.8	6.0
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	276		1095			473
Approach Delay, s/veh	31.3		9.1			5.9
Approach LOS	C		A			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		42.5			42.5	17.5
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		32.0			32.0	16.0
Max Q Clear Time (g_c+I1), s		13.8			6.0	11.1
Green Ext Time (p_c), s		8.8			3.7	0.5

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	194	65	776	253	21	424
Future Volume (veh/h)	194	65	776	253	21	424
Number	3	18	2	12	1	6
Initial Q, veh	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Lanes Open During Work Zone						
Adj Sat Flow, veh/h/ln	1900	1900	1752	1900	1900	1811
Adj Flow Rate, veh/h	206	69	826	269	22	451
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	10	0	0	6
Opposing Right Turn Influence	Yes				Yes	
Cap, veh/h	251	84	1503	489	109	1897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.19	0.19	0.61	0.61	0.61	0.61
Unsig. Movement Delay						
Ln Grp Delay, s/veh	31.3	0.0	9.0	9.1	5.8	6.0
Ln Grp LOS	C	A	A	A	A	A
Approach Vol, veh/h	276		1095			473
Approach Delay, s/veh	31.3		9.1			5.9
Approach LOS	C		A			A

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	8			6		
Case No		8.0	12.0			8.0		
Phs Duration (G+Y+Rc), s		42.5	17.5			42.5		
Change Period (Y+Rc), s		6.0	6.0			6.0		
Max Green (Gmax), s		32.0	16.0			32.0		
Max Allow Headway (MAH), s		5.9	4.7			5.9		
Max Q Clear (g_c+I1), s		13.8	11.1			6.0		
Green Ext Time (g_e), s		8.8	0.5			3.7		
Prob of Phs Call (p_c)		1.00	0.99			1.00		
Prob of Max Out (p_x)		0.00	0.88			0.00		
Left-Turn Movement Data								
Assigned Mvmt		5	3			1		
Mvmt Sat Flow, veh/h		0	1310			72		
Through Movement Data								
Assigned Mvmt		2	8			6		
Mvmt Sat Flow, veh/h		2556	6			3198		
Right-Turn Movement Data								
Assigned Mvmt		12	18			16		
Mvmt Sat Flow, veh/h		803	439			0		
Left Lane Group Data								
Assigned Mvmt	0	5	3	0	0	1	0	0
Lane Assignment			L+T+R			L+T		

Lanes in Grp	0	0	1	0	0	1	0	0
Grp Vol (v), veh/h	0	0	276	0	0	244	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1755	0	0	1622	0	0
Q Serve Time (g_s), s	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	9.1	0.0	0.0	3.7	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	523	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	36.5	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	24.7	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	36.5	0.0	0.0	0.0	16.6	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.75	0.00	0.00	0.09	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	336	0	0	1053	0	0
V/C Ratio (X)	0.00	0.00	0.82	0.00	0.00	0.23	0.00	0.00
Avail Cap (c_a), veh/h	0	0	468	0	0	1053	0	0
Upstream Filter (I)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	23.3	0.0	0.0	5.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	8.0	0.0	0.0	0.5	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	31.3	0.0	0.0	5.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	5.44	0.00	0.00	0.41	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	557	0	0	0	229	0	0
Grp Sat Flow (s), veh/h/ln	0	1664	0	0	0	1566	0	0
Q Serve Time (g_s), s	0.0	11.8	0.0	0.0	0.0	4.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.8	0.0	0.0	0.0	4.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	1013	0	0	0	953	0	0
V/C Ratio (X)	0.00	0.55	0.00	0.00	0.00	0.24	0.00	0.00
Avail Cap (c_a), veh/h	0	1013	0	0	0	953	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.9	0.0	0.0	0.0	5.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	0.0	0.0	0.0	0.6	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.0	0.0	0.0	0.0	6.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.6	0.0	0.0	0.0	0.2	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	2.48	0.00	0.00	0.00	0.43	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		T+R						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	538	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1607	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.50	0.25	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	978	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	978	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	2.49	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	38	197	39	0	178	0	40	0	0	0	0	41
Future Vol, veh/h	38	197	39	0	178	0	40	0	0	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	41	214	42	0	193	0	43	0	0	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	193	0	0	256	0	0	533	510	235	510	531	193
Stage 1	-	-	-	-	-	-	317	317	-	193	193	-
Stage 2	-	-	-	-	-	-	216	193	-	317	338	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1392	-	-	1321	-	-	461	469	809	477	457	854
Stage 1	-	-	-	-	-	-	698	658	-	813	745	-
Stage 2	-	-	-	-	-	-	791	745	-	698	644	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1321	-	-	425	453	809	464	441	854
Mov Cap-2 Maneuver	-	-	-	-	-	-	425	453	-	464	441	-
Stage 1	-	-	-	-	-	-	674	635	-	785	745	-
Stage 2	-	-	-	-	-	-	750	745	-	674	621	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	14.4	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	1392	-	-	1321	-	-	854
HCM Lane V/C Ratio	0.102	0.03	-	-	-	-	-	0.052
HCM Control Delay (s)	14.4	7.7	0	-	0	-	-	9.4
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	118	40	0	97	0	40	0	0	0	0	41
Future Vol, veh/h	39	118	40	0	97	0	40	0	0	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	42	128	43	0	105	0	43	0	0	0	0	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	171	0	0	362	339	150	339	360	105
Stage 1	-	-	-	-	-	-	234	234	-	105	105	-
Stage 2	-	-	-	-	-	-	128	105	-	234	255	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1499	-	-	1418	-	-	598	586	902	619	570	955
Stage 1	-	-	-	-	-	-	774	715	-	906	812	-
Stage 2	-	-	-	-	-	-	881	812	-	774	700	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1418	-	-	557	568	902	604	552	955
Mov Cap-2 Maneuver	-	-	-	-	-	-	557	568	-	604	552	-
Stage 1	-	-	-	-	-	-	750	693	-	878	812	-
Stage 2	-	-	-	-	-	-	840	812	-	750	678	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	12	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	557	1499	-	-	1418	-	-	955
HCM Lane V/C Ratio	0.078	0.028	-	-	-	-	-	0.047
HCM Control Delay (s)	12	7.5	0	-	0	-	-	9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	0	0	40	0	0
Future Vol, veh/h	32	0	0	40	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	35	0	0	43	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	23	22	0	0	43	0
Stage 1	22	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	998	1061	-	-	1579	-
Stage 1	1006	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	998	1061	-	-	1579	-
Mov Cap-2 Maneuver	998	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1028	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	998	1579	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	38	40	0	34	0	31	0	0	0	0	32
Future Vol, veh/h	40	38	40	0	34	0	31	0	0	0	0	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	43	41	43	0	37	0	34	0	0	0	0	35
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	7.4	7.7	6.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	34%	0%	0%
Vol Thru, %	0%	32%	100%	0%
Vol Right, %	0%	34%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	118	34	32
LT Vol	31	40	0	0
Through Vol	0	38	34	0
RT Vol	0	40	0	32
Lane Flow Rate	34	128	37	35
Geometry Grp	1	1	1	1
Degree of Util (X)	0.041	0.139	0.042	0.035
Departure Headway (Hd)	4.414	3.912	4.117	3.611
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	804	913	864	977
Service Time	2.483	1.949	2.168	1.686
HCM Lane V/C Ratio	0.042	0.14	0.043	0.036
HCM Control Delay	7.7	7.6	7.4	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.1	0.1

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	31	0	0	40	0
Future Vol, veh/h	0	31	0	0	40	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	34	0	0	43	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	86	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	920	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	920	-	-	-	-	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	
HCM LOS	-		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-

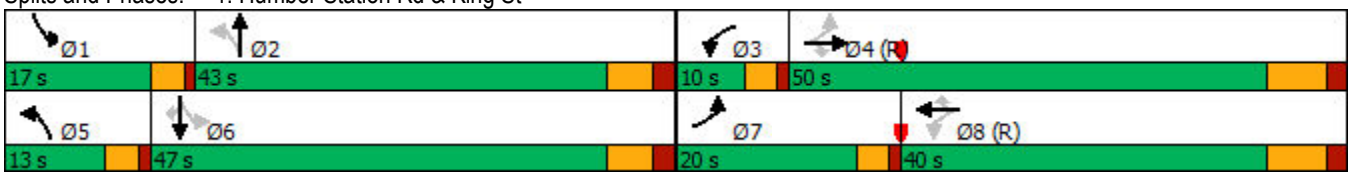
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	354	179	6	385	291	207	425	13	182	246	204
Future Volume (vph)	228	354	179	6	385	291	207	425	13	182	246	204
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00
Frt			0.850			0.850		0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1785	1842	1426	1785	1860	1597	1594	3543	0	1785	1879	956
Flt Permitted	0.359			0.540			0.334			0.282		
Satd. Flow (perm)	675	1842	1426	1015	1860	1597	560	3543	0	530	1879	956
Satd. Flow (RTOR)			102			138		3				215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	2%	12%	0%	1%	0%	12%	0%	8%	0%	0%	67%
Adj. Flow (vph)	240	373	188	6	405	306	218	447	14	192	259	215
Shared Lane Traffic (%)												
Lane Group Flow (vph)	240	373	188	6	405	306	218	461	0	192	259	215
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4		5.0	14.4	14.4
Minimum Split (s)	9.0	22.4	22.4	9.0	22.4	22.4	9.0	21.2		9.0	21.2	21.2
Total Split (s)	20.0	50.0	50.0	10.0	40.0	40.0	13.0	43.0		17.0	47.0	47.0
Total Split (%)	16.7%	41.7%	41.7%	8.3%	33.3%	33.3%	10.8%	35.8%		14.2%	39.2%	39.2%
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	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	70.8	65.3	65.3	59.0	49.9	49.9	36.8	22.0		37.7	22.5	22.5
Actuated g/C Ratio	0.59	0.54	0.54	0.49	0.42	0.42	0.31	0.18		0.31	0.19	0.19
v/c Ratio	0.46	0.37	0.23	0.01	0.52	0.41	0.78	0.71		0.63	0.74	0.61
Control Delay	15.5	18.5	8.5	12.5	31.1	16.4	52.8	51.8		37.7	54.2	13.1
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	15.5	18.5	8.5	12.5	31.1	16.4	52.8	51.8		37.7	54.2	13.1
LOS	B	B	A	B	C	B	D	D		D	D	B
Approach Delay		15.3			24.7			52.1			36.2	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	27.8	50.5	9.9	0.6	75.9	28.2	39.8	56.5		32.6	59.5	1.9

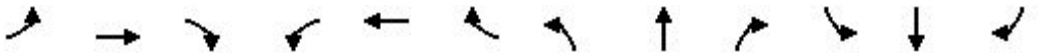
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	44.5	90.7	28.5	2.7	119.4	59.1	#80.0	72.2		50.4	78.4	17.0
Internal Link Dist (m)		298.2			155.4			124.5			295.0	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0			50.0		
Base Capacity (vph)	550	1002	822	540	773	744	279	1088		312	638	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.44	0.37	0.23	0.01	0.52	0.41	0.78	0.42		0.62	0.41	0.46

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68.8 (57%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 31.2	Intersection LOS: C
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Humber Station Rd & King St





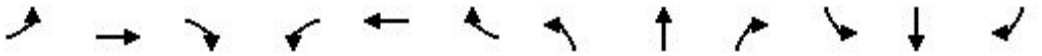
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Future Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	240	373	188	6	405	306	218	447	14	192	259	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Cap, veh/h	347	816	637	329	644	550	345	1017	32	398	572	232
Arrive On Green	0.10	0.44	0.44	0.00	0.11	0.11	0.08	0.28	0.28	0.09	0.30	0.30
Sat Flow, veh/h	1810	1870	1459	1810	1885	1610	1640	3573	112	1810	1900	769
Grp Volume(v), veh/h	240	373	188	6	405	306	218	225	236	192	259	215
Grp Sat Flow(s),veh/h/ln	1810	1870	1459	1810	1885	1610	1640	1805	1880	1810	1900	769
Q Serve(g_s), s	9.9	16.9	10.0	0.3	24.6	21.6	9.0	12.3	12.3	8.9	13.2	32.6
Cycle Q Clear(g_c), s	9.9	16.9	10.0	0.3	24.6	21.6	9.0	12.3	12.3	8.9	13.2	32.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	347	816	637	329	644	550	345	514	535	398	572	232
V/C Ratio(X)	0.69	0.46	0.30	0.02	0.63	0.56	0.63	0.44	0.44	0.48	0.45	0.93
Avail Cap(c_a), veh/h	404	816	637	405	644	550	345	554	576	428	646	261
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	23.8	21.9	25.8	46.0	44.6	31.6	35.1	35.1	26.9	33.9	40.7
Incr Delay (d2), s/veh	4.1	1.8	1.2	0.0	4.6	4.0	3.7	0.6	0.6	0.9	0.6	34.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.4	0.2	0.0	0.8	0.6	0.4	0.1	0.1	0.1	0.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	25.7	23.1	25.8	50.6	48.7	35.4	35.7	35.7	27.8	34.5	75.6
LnGrp LOS	C	C	C	C	D	D	D	D	D	C	C	E
Approach Vol, veh/h		801			717			679			666	
Approach Delay, s/veh		25.9			49.6			35.6			45.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	40.3	4.9	59.7	13.0	42.4	16.3	48.4
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green Setting (Gmax), s	13.0	* 37	6.0	42.6	9.0	* 41	16.0	32.6
Max Q Clear Time (g_c+I1), s	10.9	14.3	2.3	18.9	11.0	34.6	11.9	26.6
Green Ext Time (p_c), s	0.1	3.2	0.0	3.8	0.0	1.6	0.4	2.3

Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Future Volume (veh/h)	228	354	179	6	385	291	207	425	13	182	246	204
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1900	1870	1722	1900	1885	1900	1722	1900	1781	1900	1900	907
Adj Flow Rate, veh/h	240	373	188	6	405	306	218	447	14	192	259	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	12	0	1	0	12	0	8	0	0	67
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	347	816	637	329	644	550	345	1017	32	398	572	232
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.44	0.44	0.00	0.11	0.11	0.08	0.28	0.28	0.09	0.30	0.30
Unsig. Movement Delay												
Ln Grp Delay, s/veh	28.6	25.7	23.1	25.8	50.6	48.7	35.4	35.7	35.7	27.8	34.5	75.6
Ln Grp LOS	C	C	C	C	D	D	D	D	D	C	C	E
Approach Vol, veh/h		801			717			679			666	
Approach Delay, s/veh		25.9			49.6			35.6			45.8	
Approach LOS		C			D			D			D	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	15.0	40.3	4.9	59.7	13.0	42.4	16.3	48.4
Change Period (Y+Rc), s	4.0	* 6.2	4.0	7.4	4.0	* 6.2	4.0	7.4
Max Green (Gmax), s	13.0	* 37	6.0	42.6	9.0	* 41	16.0	32.6
Max Allow Headway (MAH), s	4.6	5.6	4.6	5.4	4.7	5.5	4.6	5.3
Max Q Clear (g_c+I1), s	10.9	14.3	2.3	18.9	11.0	34.6	11.9	26.6
Green Ext Time (g_e), s	0.1	3.2	0.0	3.8	0.0	1.6	0.4	2.3
Prob of Phs Call (p_c)	1.00	1.00	0.18	1.00	1.00	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.02	1.00	0.02	1.00	0.84	1.00	0.89

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1810		1810		1640		1810	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3573		1870		1900		1885

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		112		1459		769		1610

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	192	0	6	0	218	0	240	0
Grp Sat Flow (s), veh/h/ln	1810	0	1810	0	1640	0	1810	0
Q Serve Time (g_s), s	8.9	0.0	0.3	0.0	9.0	0.0	9.9	0.0
Cycle Q Clear Time (g_c), s	8.9	0.0	0.3	0.0	9.0	0.0	9.9	0.0
Perm LT Sat Flow (s_l), veh/h/ln	946	0	862	0	847	0	750	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	34.2	0.0	41.0	0.0	34.1	0.0	43.0	0.0
Perm LT Serve Time (g_u), s	21.8	0.0	35.5	0.0	22.9	0.0	16.4	0.0
Perm LT Q Serve Time (g_ps), s	3.1	0.0	0.0	0.0	10.2	0.0	12.5	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	398	0	329	0	345	0	347	0
V/C Ratio (X)	0.48	0.00	0.02	0.00	0.63	0.00	0.69	0.00
Avail Cap (c_a), veh/h	428	0	405	0	345	0	404	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	26.9	0.0	25.8	0.0	31.6	0.0	24.5	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.0	3.7	0.0	4.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	27.8	0.0	25.8	0.0	35.4	0.0	28.6	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.4	0.0	0.4	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.1	0.0	0.0	0.0	0.4	0.0	0.4	0.0
%ile Storage Ratio (RQ%)	0.47	0.00	0.01	0.00	1.84	0.00	1.86	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	225	0	373	0	259	0	405
Grp Sat Flow (s), veh/h/ln	0	1805	0	1870	0	1900	0	1885
Q Serve Time (g_s), s	0.0	12.3	0.0	16.9	0.0	13.2	0.0	24.6
Cycle Q Clear Time (g_c), s	0.0	12.3	0.0	16.9	0.0	13.2	0.0	24.6
Lane Grp Cap (c), veh/h	0	514	0	816	0	572	0	644
V/C Ratio (X)	0.00	0.44	0.00	0.46	0.00	0.45	0.00	0.63
Avail Cap (c_a), veh/h	0	554	0	816	0	646	0	644
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	35.1	0.0	23.8	0.0	33.9	0.0	46.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	1.8	0.0	0.6	0.0	4.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.7	0.0	25.7	0.0	34.5	0.0	50.6
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.4	0.0	0.1	0.0	0.8

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.4	0.0	0.1	0.0	0.8
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	0.33	0.00	0.07	0.00	1.30
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	236	0	188	0	215	0	306
Grp Sat Flow (s), veh/h/ln	0	1880	0	1459	0	769	0	1610
Q Serve Time (g_s), s	0.0	12.3	0.0	10.0	0.0	32.6	0.0	21.6
Cycle Q Clear Time (g_c), s	0.0	12.3	0.0	10.0	0.0	32.6	0.0	21.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.06	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	535	0	637	0	232	0	550
V/C Ratio (X)	0.00	0.44	0.00	0.30	0.00	0.93	0.00	0.56
Avail Cap (c_a), veh/h	0	576	0	637	0	261	0	550
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	35.1	0.0	21.9	0.0	40.7	0.0	44.6
Incr Delay (d2), s/veh	0.0	0.6	0.0	1.2	0.0	34.9	0.0	4.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.7	0.0	23.1	0.0	75.6	0.0	48.7
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.1	0.0	0.2	0.0	2.2	0.0	0.6
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.2	0.0	2.2	0.0	0.6
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	2.03	0.00	2.82	0.00	5.46
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Notes

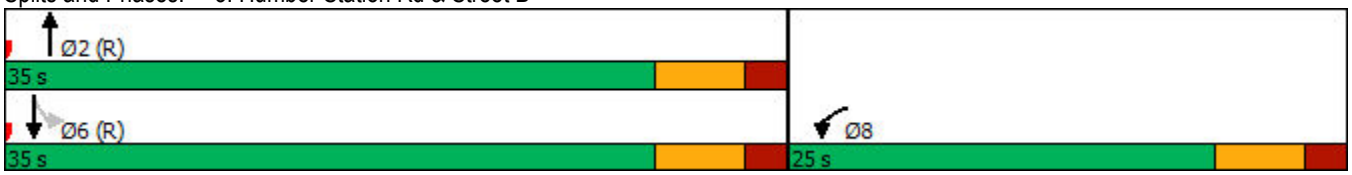
* HCM 6th Edition computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	229	46	642	288	31	396
Future Volume (vph)	229	46	642	288	31	396
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.977		0.954			
Flt Protected	0.960					0.996
Satd. Flow (prot)	1762	0	3406	0	0	3339
Flt Permitted	0.960					0.854
Satd. Flow (perm)	1762	0	3406	0	0	2863
Satd. Flow (RTOR)	18		166			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	7%
Adj. Flow (vph)	239	48	669	300	32	413
Shared Lane Traffic (%)						
Lane Group Flow (vph)	287	0	969	0	0	445
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	25	15		15	25	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.0		22.0		22.0	22.0
Total Split (s)	25.0		35.0		35.0	35.0
Total Split (%)	41.7%		58.3%		58.3%	58.3%
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
Total Lost Time (s)	6.0		6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max		C-Max	C-Max
Act Effct Green (s)	14.2		33.8			33.8
Actuated g/C Ratio	0.24		0.56			0.56
v/c Ratio	0.67		0.49			0.28
Control Delay	26.7		12.9			8.2
Queue Delay	0.0		0.0			0.0
Total Delay	26.7		12.9			8.2
LOS	C		B			A
Approach Delay	26.7		12.9			8.2
Approach LOS	C		B			A
Queue Length 50th (m)	28.0		75.3			12.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 95th (m)	45.3		83.5			24.2
Internal Link Dist (m)	27.9		58.1			86.5
Turn Bay Length (m)						
Base Capacity (vph)	570		1991			1612
Starvation Cap Reductn	0		0			0
Spillback Cap Reductn	0		0			0
Storage Cap Reductn	0		0			0
Reduced v/c Ratio	0.50		0.49			0.28

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Humber Station Rd & Street B



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	229	46	642	288	31	396
Future Volume (veh/h)	229	46	642	288	31	396
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	239	48	669	300	32	412
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	7
Cap, veh/h	294	59	1454	652	149	1752
Arrive On Green	0.20	0.20	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1472	296	2518	1087	134	3000
Grp Volume(v), veh/h	288	0	498	471	224	220
Grp Sat Flow(s),veh/h/ln	1773	0	1805	1704	1499	1553
Q Serve(g_s), s	9.3	0.0	9.2	9.2	0.0	4.0
Cycle Q Clear(g_c), s	9.3	0.0	9.2	9.2	3.4	4.0
Prop In Lane	0.83	0.17		0.64	0.14	
Lane Grp Cap(c), veh/h	354	0	1083	1023	968	932
V/C Ratio(X)	0.81	0.00	0.46	0.46	0.23	0.24
Avail Cap(c_a), veh/h	562	0	1083	1023	968	932
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.9	0.0	6.6	6.6	5.5	5.6
Incr Delay (d2), s/veh	4.9	0.0	1.4	1.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.4	0.4	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.9	0.0	8.0	8.1	6.0	6.2
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	288		969			444
Approach Delay, s/veh	27.9		8.1			6.1
Approach LOS	C		A			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		42.0			42.0	18.0
Change Period (Y+Rc), s		6.0			6.0	6.0
Max Green Setting (Gmax), s		29.0			29.0	19.0
Max Q Clear Time (g_c+I1), s		11.2			6.0	11.3
Green Ext Time (p_c), s		7.4			3.4	0.8

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	229	46	642	288	31	396
Future Volume (veh/h)	229	46	642	288	31	396
Number	3	18	2	12	1	6
Initial Q, veh	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Lanes Open During Work Zone						
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	239	48	669	300	32	412
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	7
Opposing Right Turn Influence	Yes				Yes	
Cap, veh/h	294	59	1454	652	149	1752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.20	0.20	0.60	0.60	0.60	0.60
Unsig. Movement Delay						
Ln Grp Delay, s/veh	27.9	0.0	8.0	8.1	6.0	6.2
Ln Grp LOS	C	A	A	A	A	A
Approach Vol, veh/h	288		969			444
Approach Delay, s/veh	27.9		8.1			6.1
Approach LOS	C		A			A

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	8			6		
Case No		8.0	12.0			8.0		
Phs Duration (G+Y+Rc), s		42.0	18.0			42.0		
Change Period (Y+Rc), s		6.0	6.0			6.0		
Max Green (Gmax), s		29.0	19.0			29.0		
Max Allow Headway (MAH), s		5.9	4.7			6.0		
Max Q Clear (g_c+I1), s		11.2	11.3			6.0		
Green Ext Time (g_e), s		7.4	0.8			3.4		
Prob of Phs Call (p_c)		1.00	0.99			1.00		
Prob of Max Out (p_x)		0.00	0.24			0.00		
Left-Turn Movement Data								
Assigned Mvmt		5	3			1		
Mvmt Sat Flow, veh/h		0	1472			134		
Through Movement Data								
Assigned Mvmt		2	8			6		
Mvmt Sat Flow, veh/h		2518	6			3000		
Right-Turn Movement Data								
Assigned Mvmt		12	18			16		
Mvmt Sat Flow, veh/h		1087	296			0		
Left Lane Group Data								
Assigned Mvmt	0	5	3	0	0	1	0	0
Lane Assignment			L+T+R			L+T		

Lanes in Grp	0	0	1	0	0	1	0	0
Grp Vol (v), veh/h	0	0	288	0	0	224	0	0
Grp Sat Flow (s), veh/h/ln	0	0	1773	0	0	1499	0	0
Q Serve Time (g_s), s	0.0	0.0	9.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	9.3	0.0	0.0	3.4	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	0	0	589	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	0.0	36.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	0.0	26.9	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	36.0	0.0	0.0	0.0	11.3	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.83	0.00	0.00	0.14	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	354	0	0	968	0	0
V/C Ratio (X)	0.00	0.00	0.81	0.00	0.00	0.23	0.00	0.00
Avail Cap (c_a), veh/h	0	0	562	0	0	968	0	0
Upstream Filter (I)	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	22.9	0.0	0.0	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	4.9	0.0	0.0	0.6	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	27.9	0.0	0.0	6.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	3.52	0.00	0.00	0.41	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	8	0	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	1	0	0	0	1	0	0
Grp Vol (v), veh/h	0	498	0	0	0	220	0	0
Grp Sat Flow (s), veh/h/ln	0	1805	0	0	0	1553	0	0
Q Serve Time (g_s), s	0.0	9.2	0.0	0.0	0.0	4.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	9.2	0.0	0.0	0.0	4.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	1083	0	0	0	932	0	0
V/C Ratio (X)	0.00	0.46	0.00	0.00	0.00	0.24	0.00	0.00
Avail Cap (c_a), veh/h	0	1083	0	0	0	932	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.6	0.0	0.0	0.0	5.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	0.0	0.6	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.0	0.0	0.0	0.0	6.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.2	0.0	0.0

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.4	0.0	0.0	0.0	0.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.61	0.00	0.00	0.00	0.42	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	18	0	0	16	0	0
Lane Assignment		T+R						
Lanes in Grp	0	1	0	0	0	0	0	0
Grp Vol (v), veh/h	0	471	0	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1704	0	0	0	0	0	0
Q Serve Time (g_s), s	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.64	0.17	0.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	1023	0	0	0	0	0	0
V/C Ratio (X)	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	1023	0	0	0	0	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.1	0.0	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.61	0.00	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	227	46	0	190	0	42	0	0	0	0	43
Future Vol, veh/h	46	227	46	0	190	0	42	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	247	50	0	207	0	46	0	0	0	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	297	0	0	603	579	272	579	604	207
Stage 1	-	-	-	-	-	-	372	372	-	207	207	-
Stage 2	-	-	-	-	-	-	231	207	-	372	397	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1376	-	-	1276	-	-	414	429	772	429	415	839
Stage 1	-	-	-	-	-	-	653	622	-	800	734	-
Stage 2	-	-	-	-	-	-	776	734	-	653	607	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1376	-	-	1276	-	-	378	410	772	414	397	839
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	410	-	414	397	-
Stage 1	-	-	-	-	-	-	624	595	-	765	734	-
Stage 2	-	-	-	-	-	-	733	734	-	624	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	15.8	9.5
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	378	1376	-	-	1276	-	-	839
HCM Lane V/C Ratio	0.121	0.036	-	-	-	-	-	0.056
HCM Control Delay (s)	15.8	7.7	0	-	0	-	-	9.5
HCM Lane LOS	C	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	46	134	47	0	104	0	43	0	0	0	0	43
Future Vol, veh/h	46	134	47	0	104	0	43	0	0	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	146	51	0	113	0	47	0	0	0	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	197	0	0	409	385	172	385	410	113
Stage 1	-	-	-	-	-	-	272	272	-	113	113	-
Stage 2	-	-	-	-	-	-	137	113	-	272	297	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1489	-	-	1388	-	-	556	552	877	577	534	945
Stage 1	-	-	-	-	-	-	738	688	-	897	806	-
Stage 2	-	-	-	-	-	-	871	806	-	738	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1388	-	-	513	531	877	560	514	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	513	531	-	560	514	-
Stage 1	-	-	-	-	-	-	710	662	-	863	806	-
Stage 2	-	-	-	-	-	-	828	806	-	710	646	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	12.7	9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	513	1489	-	-	1388	-	-	945
HCM Lane V/C Ratio	0.091	0.034	-	-	-	-	-	0.049
HCM Control Delay (s)	12.7	7.5	0	-	0	-	-	9
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	0	0	46	0	0
Future Vol, veh/h	35	0	0	46	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	38	0	0	50	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	26	25	0	0	50	0
Stage 1	25	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	995	1057	-	-	1570	-
Stage 1	1003	-	-	-	-	-
Stage 2	1028	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	995	1057	-	-	1570	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1028	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	995	1570	-
HCM Lane V/C Ratio	-	-	0.038	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	42	46	0	34	0	35	0	0	0	0	35
Future Vol, veh/h	46	42	46	0	34	0	35	0	0	0	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	50	46	50	0	37	0	38	0	0	0	0	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.4	7.8	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	34%	0%	0%
Vol Thru, %	0%	31%	100%	0%
Vol Right, %	0%	34%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	134	34	35
LT Vol	35	46	0	0
Through Vol	0	42	34	0
RT Vol	0	46	0	35
Lane Flow Rate	38	146	37	38
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.159	0.043	0.039
Departure Headway (Hd)	4.446	3.923	4.144	3.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	795	910	857	965
Service Time	2.528	1.967	2.206	1.732
HCM Lane V/C Ratio	0.048	0.16	0.043	0.039
HCM Control Delay	7.8	7.7	7.4	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.6	0.1	0.1

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	35	0	0	46	0
Future Vol, veh/h	0	35	0	0	46	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	38	0	0	50	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	100	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	904	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	904	-	-	-	-	-
Mov Cap-2 Maneuver	904	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s		0	
HCM LOS	-		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	978	1027	994	995	978	995
Vehs Exited	984	1031	998	994	979	997
Starting Vehs	14	14	13	12	10	10
Ending Vehs	8	10	9	13	9	10
Travel Distance (km)	480	529	496	487	488	496
Travel Time (hr)	11.6	13.2	12.2	12.3	11.8	12.2
Total Delay (hr)	3.1	3.8	3.5	3.7	3.1	3.4
Total Stops	359	419	409	427	347	390
Fuel Used (l)	40.1	44.3	41.5	41.1	39.6	41.3

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	978	1027	994	995	978	995
Vehs Exited	984	1031	998	994	979	997
Starting Vehs	14	14	13	12	10	10
Ending Vehs	8	10	9	13	9	10
Travel Distance (km)	480	529	496	487	488	496
Travel Time (hr)	11.6	13.2	12.2	12.3	11.8	12.2
Total Delay (hr)	3.1	3.8	3.5	3.7	3.1	3.4
Total Stops	359	419	409	427	347	390
Fuel Used (l)	40.1	44.3	41.5	41.1	39.6	41.3

Intersection: 1: Humber Station Rd & King St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	48.5	57.5	25.9	49.3
Average Queue (m)	21.5	26.5	9.5	17.1
95th Queue (m)	40.2	47.5	22.0	34.0
Link Distance (m)	313.6		139.9	299.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:50	3:50	3:50	3:50	3:50	3:50
End Time	5:00	5:00	5:00	5:00	5:00	5:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	1224	1299	1395	1251	1216	1278
Vehs Exited	1223	1302	1401	1253	1217	1279
Starting Vehs	18	21	19	19	18	20
Ending Vehs	19	18	13	17	17	16
Travel Distance (km)	644	675	715	648	624	661
Travel Time (hr)	18.0	18.5	20.2	17.6	17.0	18.3
Total Delay (hr)	6.0	6.1	7.0	5.6	5.5	6.0
Total Stops	618	630	698	590	574	623
Fuel Used (l)	57.2	59.4	63.5	56.7	53.5	58.1

Interval #0 Information Seeding

Start Time	3:50
End Time	4:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	4:00
End Time	5:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	1224	1299	1395	1251	1216	1278
Vehs Exited	1223	1302	1401	1253	1217	1279
Starting Vehs	18	21	19	19	18	20
Ending Vehs	19	18	13	17	17	16
Travel Distance (km)	644	675	715	648	624	661
Travel Time (hr)	18.0	18.5	20.2	17.6	17.0	18.3
Total Delay (hr)	6.0	6.1	7.0	5.6	5.5	6.0
Total Stops	618	630	698	590	574	623
Fuel Used (l)	57.2	59.4	63.5	56.7	53.5	58.1

Intersection: 1: Humber Station Rd & King St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	72.5	90.1	59.9	27.1
Average Queue (m)	26.0	43.9	31.1	8.5
95th Queue (m)	52.0	80.4	51.1	20.4
Link Distance (m)	313.6		139.9	299.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	2:50	2:50	2:50	2:50	2:50	2:50
End Time	4:00	4:00	4:00	4:00	4:00	4:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	623	662	633	641	610	634
Vehs Exited	622	660	633	642	614	635
Starting Vehs	5	5	6	6	9	5
Ending Vehs	6	7	6	5	5	3
Travel Distance (km)	303	322	310	313	292	308
Travel Time (hr)	6.9	7.3	6.9	7.1	6.8	7.0
Total Delay (hr)	1.4	1.6	1.4	1.5	1.6	1.5
Total Stops	197	189	193	195	193	194
Fuel Used (l)	24.3	25.1	24.2	24.8	23.5	24.4

Interval #0 Information Seeding

Start Time	2:50
End Time	3:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	3:00
End Time	4:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	623	662	633	641	610	634
Vehs Exited	622	660	633	642	614	635
Starting Vehs	5	5	6	6	9	5
Ending Vehs	6	7	6	5	5	3
Travel Distance (km)	303	322	310	313	292	308
Travel Time (hr)	6.9	7.3	6.9	7.1	6.8	7.0
Total Delay (hr)	1.4	1.6	1.4	1.5	1.6	1.5
Total Stops	197	189	193	195	193	194
Fuel Used (l)	24.3	25.1	24.2	24.8	23.5	24.4

Intersection: 1: Humber Station Rd & King St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	35.6	27.6	31.4	16.2
Average Queue (m)	10.8	11.6	12.2	4.7
95th Queue (m)	24.3	24.8	23.3	12.5
Link Distance (m)	313.6		139.9	299.3
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2480	2523	2419	2477	2401	2460
Vehs Exited	2497	2479	2422	2465	2407	2454
Starting Vehs	73	38	53	56	54	53
Ending Vehs	56	82	50	68	48	63
Travel Distance (km)	1741	1707	1648	1697	1653	1689
Travel Time (hr)	57.3	99.5	57.3	56.1	55.5	65.1
Total Delay (hr)	24.6	67.5	26.5	24.4	24.6	33.5
Total Stops	1953	2628	2006	1906	1878	2074
Fuel Used (l)	154.4	191.2	149.2	151.5	147.4	158.7

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2480	2523	2419	2477	2401	2460
Vehs Exited	2497	2479	2422	2465	2407	2454
Starting Vehs	73	38	53	56	54	53
Ending Vehs	56	82	50	68	48	63
Travel Distance (km)	1741	1707	1648	1697	1653	1689
Travel Time (hr)	57.3	99.5	57.3	56.1	55.5	65.1
Total Delay (hr)	24.6	67.5	26.5	24.4	24.6	33.5
Total Stops	1953	2628	2006	1906	1878	2074
Fuel Used (l)	154.4	191.2	149.2	151.5	147.4	158.7

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (m)	57.4	270.5	32.5	52.5	89.9	32.5	49.1	66.7	28.4	57.4	128.5	75.4
Average Queue (m)	22.3	156.8	28.8	17.4	60.5	12.2	18.7	25.1	5.5	32.7	63.3	22.8
95th Queue (m)	56.4	302.9	41.3	44.7	96.8	32.4	39.6	50.8	21.0	62.7	107.3	50.2
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)		9										
Queuing Penalty (veh)		0										
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	0	35	9		27	0	1	8	0	2	14	
Queuing Penalty (veh)	0	149	50		39	0	1	7	1	6	18	

Zone Summary

Zone wide Queuing Penalty: 271

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2780	2755	2716	2729	2725	2742
Vehs Exited	2783	2744	2732	2723	2717	2739
Starting Vehs	79	85	83	84	80	81
Ending Vehs	76	96	67	90	88	82
Travel Distance (km)	1941	1938	1946	1950	1933	1941
Travel Time (hr)	154.4	234.5	196.7	191.6	225.0	200.5
Total Delay (hr)	117.3	197.5	159.4	154.3	188.0	163.3
Total Stops	2205	2240	2163	2141	2143	2178
Fuel Used (l)	251.7	318.4	287.2	282.3	308.5	289.6

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2780	2755	2716	2729	2725	2742
Vehs Exited	2783	2744	2732	2723	2717	2739
Starting Vehs	79	85	83	84	80	81
Ending Vehs	76	96	67	90	88	82
Travel Distance (km)	1941	1938	1946	1950	1933	1941
Travel Time (hr)	154.4	234.5	196.7	191.6	225.0	200.5
Total Delay (hr)	117.3	197.5	159.4	154.3	188.0	163.3
Total Stops	2205	2240	2163	2141	2143	2178
Fuel Used (l)	251.7	318.4	287.2	282.3	308.5	289.6

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (m)	57.4	183.9	32.5	57.1	93.2	32.5	57.5	150.5	32.5	51.5	102.8	47.7
Average Queue (m)	37.8	86.8	21.3	8.8	84.2	18.0	52.2	140.8	13.8	18.2	48.8	18.6
95th Queue (m)	66.1	154.9	42.2	33.2	90.0	40.3	68.4	146.6	36.3	43.7	84.6	37.9
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)								62				
Queuing Penalty (veh)								0				
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	3	31	1	0	56	1	18	59	1	0	10	
Queuing Penalty (veh)	19	103	5	0	107	8	105	201	8	0	6	

Zone Summary

Zone wide Queuing Penalty: 561

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2471	2422	2458	2456	2366	2435
Vehs Exited	2478	2418	2477	2456	2377	2441
Starting Vehs	62	51	63	68	63	59
Ending Vehs	55	55	44	68	52	54
Travel Distance (km)	1835	1808	1850	1831	1775	1820
Travel Time (hr)	58.3	58.3	58.4	58.5	56.6	58.0
Total Delay (hr)	23.0	23.5	22.9	23.4	22.3	23.0
Total Stops	1650	1642	1642	1650	1565	1632
Fuel Used (l)	160.6	159.0	160.7	160.2	154.1	158.9

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2471	2422	2458	2456	2366	2435
Vehs Exited	2478	2418	2477	2456	2377	2441
Starting Vehs	62	51	63	68	63	59
Ending Vehs	55	55	44	68	52	54
Travel Distance (km)	1835	1808	1850	1831	1775	1820
Travel Time (hr)	58.3	58.3	58.4	58.5	56.6	58.0
Total Delay (hr)	23.0	23.5	22.9	23.4	22.3	23.0
Total Stops	1650	1642	1642	1650	1565	1632
Fuel Used (l)	160.6	159.0	160.7	160.2	154.1	158.9

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (m)	57.3	131.2	32.5	6.4	83.4	32.5	57.4	142.5	32.0	57.3	85.2	74.5
Average Queue (m)	24.5	48.0	19.4	0.8	63.9	17.8	44.1	87.1	3.1	16.6	46.1	25.6
95th Queue (m)	49.2	94.5	38.4	4.4	97.2	38.9	70.0	147.3	16.5	43.8	77.8	54.3
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)								3				
Queuing Penalty (veh)								0				
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	0	18	1		35	0	6	43	0		7	
Queuing Penalty (veh)	1	60	5		49	0	23	95	0		4	

Zone Summary

Zone wide Queuing Penalty: 238

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2701	2806	2670	2665	2712	2713
Vehs Exited	2697	2758	2657	2683	2702	2700
Starting Vehs	64	61	70	70	79	67
Ending Vehs	68	109	83	52	89	79
Travel Distance (km)	1849	1888	1857	1834	1863	1858
Travel Time (hr)	67.8	118.8	66.6	75.5	90.9	83.9
Total Delay (hr)	32.1	82.5	30.6	40.0	54.9	48.0
Total Stops	2663	3502	2716	3082	3209	3035
Fuel Used (l)	175.3	225.9	174.2	181.9	197.5	191.0

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2701	2806	2670	2665	2712	2713
Vehs Exited	2697	2758	2657	2683	2702	2700
Starting Vehs	64	61	70	70	79	67
Ending Vehs	68	109	83	52	89	79
Travel Distance (km)	1849	1888	1857	1834	1863	1858
Travel Time (hr)	67.8	118.8	66.6	75.5	90.9	83.9
Total Delay (hr)	32.1	82.5	30.6	40.0	54.9	48.0
Total Stops	2663	3502	2716	3082	3209	3035
Fuel Used (l)	175.3	225.9	174.2	181.9	197.5	191.0

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (m)	57.4	294.2	32.5	57.3	90.2	32.5	53.1	65.4	32.2	57.4	211.3	72.6
Average Queue (m)	30.3	207.3	28.6	21.1	65.8	18.2	22.4	28.7	5.2	49.6	88.9	24.1
95th Queue (m)	65.0	370.5	41.6	53.7	100.9	38.5	45.4	54.6	21.3	70.7	163.9	48.9
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)		17										
Queuing Penalty (veh)		0										
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	0	39	11	0	32	0	1	16	0	17	16	
Queuing Penalty (veh)	0	177	63	0	65	0	1	14	0	62	34	

Intersection: 3: Humber Station Rd & Street B

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	30.6	2.5	20.9
Average Queue (m)	14.4	0.1	2.7
95th Queue (m)	24.4	1.3	12.1
Link Distance (m)	30.7	62.7	93.1
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	1		
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: NW Retail Driveway/SW Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	7.3	1.8	9.0	9.2
Average Queue (m)	0.4	0.1	1.9	1.8
95th Queue (m)	3.3	1.8	7.9	7.7
Link Distance (m)	30.7	26.9	55.4	71.5
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Retail Driveway/SE Retail Driveway & Street B

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	5.5	9.1	9.1
Average Queue (m)	0.3	1.9	1.4
95th Queue (m)	3.0	8.0	6.7
Link Distance (m)	26.9	52.2	69.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Street A & N Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	13.1
Average Queue (m)	6.5
95th Queue (m)	13.6
Link Distance (m)	68.6
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Street A & Street B/W Residential Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	10.6	10.7	10.5	9.0
Average Queue (m)	7.7	5.7	6.5	6.3
95th Queue (m)	13.3	13.1	13.4	12.7
Link Distance (m)	24.4	76.7	37.6	29.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Street A & S Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	10.6
Average Queue (m)	6.4
95th Queue (m)	13.4
Link Distance (m)	66.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 418

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	3051	3099	3007	3025	3070	3051
Vehs Exited	3050	3101	3019	2986	3063	3045
Starting Vehs	93	103	107	93	93	97
Ending Vehs	94	101	95	132	100	100
Travel Distance (km)	2136	2205	2136	2112	2166	2151
Travel Time (hr)	336.6	448.2	402.6	400.2	424.2	402.4
Total Delay (hr)	293.9	404.3	360.0	357.9	380.9	359.4
Total Stops	3227	4057	3185	4176	3777	3685
Fuel Used (l)	420.9	525.0	477.2	477.0	499.1	479.8

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	3051	3099	3007	3025	3070	3051
Vehs Exited	3050	3101	3019	2986	3063	3045
Starting Vehs	93	103	107	93	93	97
Ending Vehs	94	101	95	132	100	100
Travel Distance (km)	2136	2205	2136	2112	2166	2151
Travel Time (hr)	336.6	448.2	402.6	400.2	424.2	402.4
Total Delay (hr)	293.9	404.3	360.0	357.9	380.9	359.4
Total Stops	3227	4057	3185	4176	3777	3685
Fuel Used (l)	420.9	525.0	477.2	477.0	499.1	479.8

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (m)	57.4	283.7	32.5	50.3	95.3	32.5	57.4	150.0	32.5	57.4	173.1	104.6
Average Queue (m)	50.2	187.7	19.1	8.3	85.2	22.9	51.6	140.6	11.5	47.0	86.1	35.4
95th Queue (m)	70.0	349.3	41.1	33.0	92.2	43.0	69.3	145.9	33.9	68.1	210.0	120.2
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)		10						64			2	0
Queuing Penalty (veh)		0						0			5	0
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	21	37	0	0	59	2	14	63	0	29	8	
Queuing Penalty (veh)	142	142	3	0	192	13	85	214	2	74	14	

Intersection: 3: Humber Station Rd & Street B

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	LT
Maximum Queue (m)	35.7	1.8	8.3	31.7
Average Queue (m)	26.2	0.1	0.6	5.5
95th Queue (m)	40.2	1.3	4.0	19.0
Link Distance (m)	30.7	62.7	62.7	93.1
Upstream Blk Time (%)	14			
Queuing Penalty (veh)	36			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW Retail Driveway/SW Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.7	27.2	19.6	27.6
Average Queue (m)	2.5	6.1	8.5	9.4
95th Queue (m)	10.9	21.3	17.8	25.9
Link Distance (m)	30.7	26.9	55.4	71.5
Upstream Blk Time (%)		2		0
Queuing Penalty (veh)		3		0
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Retail Driveway/SE Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.2	7.8	13.3	14.7
Average Queue (m)	0.8	0.5	7.3	7.1
95th Queue (m)	5.0	4.7	14.2	13.9
Link Distance (m)	26.9	24.4	52.2	69.1
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Street A & N Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	10.5
Average Queue (m)	6.4
95th Queue (m)	13.3
Link Distance (m)	68.6
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Street A & Street B/W Residential Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.5	13.5	9.3	9.0
Average Queue (m)	9.1	6.3	6.1	6.2
95th Queue (m)	13.1	13.7	13.1	12.7
Link Distance (m)	24.4	76.7	37.6	29.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Street A & S Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	10.4
Average Queue (m)	6.0
95th Queue (m)	13.0
Link Distance (m)	66.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 924

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2942	2967	2843	2833	2822	2883
Vehs Exited	2961	2933	2847	2836	2860	2888
Starting Vehs	83	65	84	78	106	79
Ending Vehs	64	99	80	75	68	74
Travel Distance (km)	2085	2105	2056	2036	2064	2069
Travel Time (hr)	87.9	104.9	78.5	80.0	81.3	86.5
Total Delay (hr)	45.4	62.0	36.9	38.4	39.2	44.4
Total Stops	3054	3367	2926	3023	2905	3053
Fuel Used (l)	212.8	229.7	200.1	201.8	203.7	209.6

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2942	2967	2843	2833	2822	2883
Vehs Exited	2961	2933	2847	2836	2860	2888
Starting Vehs	83	65	84	78	106	79
Ending Vehs	64	99	80	75	68	74
Travel Distance (km)	2085	2105	2056	2036	2064	2069
Travel Time (hr)	87.9	104.9	78.5	80.0	81.3	86.5
Total Delay (hr)	45.4	62.0	36.9	38.4	39.2	44.4
Total Stops	3054	3367	2926	3023	2905	3053
Fuel Used (l)	212.8	229.7	200.1	201.8	203.7	209.6

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (m)	57.4	150.6	32.5	27.5	83.6	32.5	57.4	144.5	32.2	57.3	104.5	90.6
Average Queue (m)	37.1	61.1	20.4	2.0	74.0	26.8	48.0	114.9	4.7	35.3	45.8	38.2
95th Queue (m)	62.9	127.3	40.2	13.6	97.6	42.3	69.9	169.8	22.1	59.4	83.6	71.4
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)								22				
Queuing Penalty (veh)								0				
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	5	22	1		44	4	8	54	0	5	5	
Queuing Penalty (veh)	29	90	5		130	15	35	118	0	12	9	

Intersection: 3: Humber Station Rd & Street B

Movement	WB	NB	SB	SB
Directions Served	LR	TR	LT	T
Maximum Queue (m)	35.6	8.4	25.2	4.4
Average Queue (m)	29.5	0.8	6.8	0.1
95th Queue (m)	41.1	4.8	19.7	3.1
Link Distance (m)	30.7	62.7	93.1	93.1
Upstream Blk Time (%)	24			
Queuing Penalty (veh)	66			
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: NW Retail Driveway/SW Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.4	28.8	38.3	36.8
Average Queue (m)	1.6	9.1	12.3	12.0
95th Queue (m)	8.3	26.7	31.7	30.5
Link Distance (m)	30.7	26.9	55.4	71.5
Upstream Blk Time (%)		5	2	
Queuing Penalty (veh)		9	0	
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Retail Driveway/SE Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	9.1	13.6	16.6	16.6
Average Queue (m)	1.0	1.5	7.3	6.5
95th Queue (m)	5.7	9.8	14.6	15.5
Link Distance (m)	26.9	24.4	52.2	69.1
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Street A & N Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	9.2
Average Queue (m)	6.2
95th Queue (m)	13.0
Link Distance (m)	68.6
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Street A & Street B/W Residential Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.4	10.7	10.4	9.0
Average Queue (m)	9.6	6.0	6.9	6.1
95th Queue (m)	13.6	13.2	13.4	12.7
Link Distance (m)	24.4	76.7	37.6	29.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Street A & S Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	11.7
Average Queue (m)	6.8
95th Queue (m)	13.3
Link Distance (m)	66.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 520

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2761	2805	2734	2679	2749	2747
Vehs Exited	2747	2804	2723	2687	2765	2745
Starting Vehs	59	77	57	68	66	63
Ending Vehs	73	78	68	60	50	63
Travel Distance (km)	1904	1888	1888	1848	1892	1884
Travel Time (hr)	69.0	78.3	69.6	73.7	66.7	71.5
Total Delay (hr)	32.3	41.8	33.1	37.8	30.1	35.0
Total Stops	2956	3329	2876	3164	2823	3028
Fuel Used (l)	182.0	192.3	181.1	182.3	178.2	183.2

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2761	2805	2734	2679	2749	2747
Vehs Exited	2747	2804	2723	2687	2765	2745
Starting Vehs	59	77	57	68	66	63
Ending Vehs	73	78	68	60	50	63
Travel Distance (km)	1904	1888	1888	1848	1892	1884
Travel Time (hr)	69.0	78.3	69.6	73.7	66.7	71.5
Total Delay (hr)	32.3	41.8	33.1	37.8	30.1	35.0
Total Stops	2956	3329	2876	3164	2823	3028
Fuel Used (l)	182.0	192.3	181.1	182.3	178.2	183.2

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	TR	L	T	R
Maximum Queue (m)	57.4	283.3	32.5	57.3	90.9	32.5	49.8	80.7	32.5	57.4	176.7	85.5
Average Queue (m)	29.3	154.1	29.5	18.3	65.6	17.9	19.5	26.1	14.1	47.3	79.7	26.9
95th Queue (m)	62.7	301.9	41.7	48.0	99.8	38.8	38.4	55.0	33.1	68.3	149.3	56.3
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)		5						0				
Queuing Penalty (veh)		0						0				
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	0	34	10		32	0	0	11	1	9	16	
Queuing Penalty (veh)	1	156	60		64	0	1	20	2	33	34	

Intersection: 3: Humber Station Rd & Street B

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	LT	T
Maximum Queue (m)	34.6	32.0	33.7	40.4	29.1
Average Queue (m)	20.2	9.5	13.2	18.1	10.7
95th Queue (m)	32.7	23.0	28.0	34.6	25.0
Link Distance (m)	30.7	62.7	62.7	93.1	93.1
Upstream Blk Time (%)	2				
Queuing Penalty (veh)	3				
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: NW Retail Driveway/SW Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	7.3	13.5	9.0	9.1
Average Queue (m)	0.7	0.7	1.8	1.7
95th Queue (m)	4.5	5.8	7.7	7.3
Link Distance (m)	30.7	26.9	55.4	71.5
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Retail Driveway/SE Retail Driveway & Street B

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	7.3	9.1	9.1
Average Queue (m)	0.6	1.9	1.6
95th Queue (m)	4.3	8.0	7.2
Link Distance (m)	26.9	52.2	69.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Street A & N Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	11.7
Average Queue (m)	6.4
95th Queue (m)	13.3
Link Distance (m)	68.6
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Street A & Street B/W Residential Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	13.4	10.7	9.3	10.2
Average Queue (m)	8.5	5.6	6.5	6.5
95th Queue (m)	13.6	12.9	13.3	13.0
Link Distance (m)	24.4	76.7	37.6	29.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Street A & S Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	10.5
Average Queue (m)	6.5
95th Queue (m)	13.2
Link Distance (m)	66.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 374

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	3116	3185	3107	3087	3058	3110
Vehs Exited	3099	3169	3089	3082	3062	3101
Starting Vehs	98	109	108	91	98	99
Ending Vehs	115	125	126	96	94	108
Travel Distance (km)	2184	2227	2168	2134	2153	2173
Travel Time (hr)	362.1	322.4	286.1	334.2	352.0	331.4
Total Delay (hr)	318.4	278.2	242.6	291.4	309.0	287.9
Total Stops	4154	3874	3850	3701	4138	3943
Fuel Used (l)	454.9	421.8	386.0	425.5	442.9	426.2

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	3116	3185	3107	3087	3058	3110
Vehs Exited	3099	3169	3089	3082	3062	3101
Starting Vehs	98	109	108	91	98	99
Ending Vehs	115	125	126	96	94	108
Travel Distance (km)	2184	2227	2168	2134	2153	2173
Travel Time (hr)	362.1	322.4	286.1	334.2	352.0	331.4
Total Delay (hr)	318.4	278.2	242.6	291.4	309.0	287.9
Total Stops	4154	3874	3850	3701	4138	3943
Fuel Used (l)	454.9	421.8	386.0	425.5	442.9	426.2

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	TR	L	T	R
Maximum Queue (m)	57.4	299.9	32.5	48.8	93.9	32.5	57.4	149.0	32.5	57.4	139.1	63.4
Average Queue (m)	51.0	180.9	18.5	7.1	85.2	23.9	52.8	140.8	31.7	42.8	62.2	29.0
95th Queue (m)	68.8	353.6	40.4	28.0	91.7	42.8	67.4	145.9	36.7	68.3	113.3	51.8
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)		13						64				
Queuing Penalty (veh)		0						0				
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	33	27	0		53	3	18	60	25	10	12	
Queuing Penalty (veh)	224	104	3		173	22	112	364	127	24	21	

Intersection: 3: Humber Station Rd & Street B

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	LT	T
Maximum Queue (m)	35.9	39.5	48.6	49.6	38.4
Average Queue (m)	28.0	19.5	27.5	19.6	10.7
95th Queue (m)	39.6	32.2	44.5	39.6	26.1
Link Distance (m)	30.7	62.7	62.7	93.1	93.1
Upstream Blk Time (%)	10				
Queuing Penalty (veh)	25				
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: NW Retail Driveway/SW Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	17.6	26.6	19.4	14.1
Average Queue (m)	2.2	3.7	7.6	6.7
95th Queue (m)	9.9	15.7	15.2	13.9
Link Distance (m)	30.7	26.9	55.4	71.5
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Retail Driveway/SE Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	5.5	1.7	15.8	15.1
Average Queue (m)	0.4	0.1	6.7	6.8
95th Queue (m)	3.3	1.2	14.2	14.2
Link Distance (m)	26.9	24.4	52.2	69.1
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Street A & N Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	11.9
Average Queue (m)	6.6
95th Queue (m)	13.4
Link Distance (m)	68.6
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Street A & Street B/W Residential Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.5	12.0	9.2	9.0
Average Queue (m)	9.4	5.9	5.7	6.2
95th Queue (m)	13.4	13.2	12.9	12.8
Link Distance (m)	24.4	76.7	37.6	29.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Street A & S Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	9.1
Average Queue (m)	5.7
95th Queue (m)	12.8
Link Distance (m)	66.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 1200

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:50	7:50	7:50	7:50	7:50	7:50
End Time	9:00	9:00	9:00	9:00	9:00	9:00
Total Time (min)	70	70	70	70	70	70
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2857	2907	2864	2814	2744	2838
Vehs Exited	2856	2895	2852	2817	2747	2834
Starting Vehs	78	76	71	81	72	74
Ending Vehs	79	88	83	78	69	75
Travel Distance (km)	2039	2085	2045	2022	1993	2037
Travel Time (hr)	78.8	108.5	84.5	79.8	76.2	85.6
Total Delay (hr)	37.3	66.0	43.0	38.5	35.6	44.1
Total Stops	3367	3441	3423	3320	3208	3349
Fuel Used (l)	204.2	235.4	209.6	203.5	198.6	210.3

Interval #0 Information Seeding

Start Time	7:50
End Time	8:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	8:00
End Time	9:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	2857	2907	2864	2814	2744	2838
Vehs Exited	2856	2895	2852	2817	2747	2834
Starting Vehs	78	76	71	81	72	74
Ending Vehs	79	88	83	78	69	75
Travel Distance (km)	2039	2085	2045	2022	1993	2037
Travel Time (hr)	78.8	108.5	84.5	79.8	76.2	85.6
Total Delay (hr)	37.3	66.0	43.0	38.5	35.6	44.1
Total Stops	3367	3441	3423	3320	3208	3349
Fuel Used (l)	204.2	235.4	209.6	203.5	198.6	210.3

Intersection: 1: Humber Station Rd & King St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	TR	L	T	R
Maximum Queue (m)	57.3	142.5	32.5	39.9	83.1	32.5	57.4	143.9	32.5	57.4	94.2	92.9
Average Queue (m)	36.6	56.2	18.8	3.1	74.1	27.3	45.9	97.9	28.2	32.7	44.7	37.3
95th Queue (m)	62.0	113.6	39.0	20.5	97.4	41.9	70.3	156.9	42.9	59.9	78.0	71.3
Link Distance (m)		309.0						134.4			296.6	296.6
Upstream Blk Time (%)								8				
Queuing Penalty (veh)								0				
Storage Bay Dist (m)	50.0		25.0	50.0		25.0	50.0		25.0	50.0		
Storage Blk Time (%)	3	20	1		44	3	15	41	8	3	5	
Queuing Penalty (veh)	19	83	4		131	12	67	176	34	7	9	

Intersection: 3: Humber Station Rd & Street B

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	LT	T
Maximum Queue (m)	35.8	57.2	65.0	54.5	38.1
Average Queue (m)	29.9	27.5	36.2	21.9	13.4
95th Queue (m)	40.1	48.8	61.3	41.7	31.6
Link Distance (m)	30.7	62.7	62.7	93.1	93.1
Upstream Blk Time (%)	11	0	0		
Queuing Penalty (veh)	30	0	2		
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: NW Retail Driveway/SW Retail Driveway & Street B

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	20.1	20.8	17.6	18.6
Average Queue (m)	3.0	4.1	7.3	7.8
95th Queue (m)	12.1	14.6	15.2	15.5
Link Distance (m)	30.7	26.9	55.4	71.5
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: NE Retail Driveway/SE Retail Driveway & Street B

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (m)	13.0	14.7	12.0
Average Queue (m)	1.4	7.7	6.9
95th Queue (m)	7.5	14.7	13.5
Link Distance (m)	26.9	52.2	69.1
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Street A & N Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	12.0
Average Queue (m)	6.1
95th Queue (m)	13.3
Link Distance (m)	68.6
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Street A & Street B/W Residential Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.6	12.1	9.2	9.0
Average Queue (m)	10.1	6.4	6.4	6.0
95th Queue (m)	14.7	13.5	13.2	12.7
Link Distance (m)	24.4	76.7	37.6	29.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Street A & S Residential Driveway

Movement	WB
Directions Served	LR
Maximum Queue (m)	9.1
Average Queue (m)	6.4
95th Queue (m)	13.0
Link Distance (m)	66.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 573

Appendix E – Signal Warrant Analysis

Signal Warrant Calculation

Major Street: Humber Station Rd

Minor Street: Street B

Comment FT (2036) Traffic Condition

Number of Approaches: 1 [x] 2 [ ]

Tee Intersection Configuration: Yes [x] No [ ]

Flow Condition: Free Fv (Rural) [ ]
Restricted Flow (Urban) [x]

VOLUME	AM	PM	FACTOR *	
1A - All	1,249	1,759	n/a	752
1B - Minor	137	272	25%	102
2A - Major	1,112	1,487	25%	650
2B - Crossi	130	205	25%	84

* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% Satisfied:	Yes [ ]	No [X]	Warrant for new intersection with forecast traffic
120% Satisfied:	Yes [ ]	No [X]	Warrant for existing intersection with forecast traffic
100% Satisfied:	Yes [ ]	No [X]	Warrant for existing intersection with existing traffic *
COMBO 80% Satisfied:	Yes [ ]	No [X]	Warrant for existing intersection with existing traffic
80% Satisfied:	Yes [X]	No [ ]	

* Consider full underground provisions if 100% for forecast traffic

WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
ALL APPROACHES	480	720	600	900	752
	% FULFILLED				104%
APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
MINOR STREET APPROACHES	180	255	180	255	102
	% FULFILLED				40%

150% Satisfied:	Yes [ ]	No [X]
120% Satisfied:	Yes [ ]	No [X]
100% Satisfied:	Yes [ ]	No [X]
80% Satisfied:	Yes [ ]	No [X]

WARRANT 2 - DELAY TO CROSS TRAFFIC

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
MAJOR STREET APPROACHES	480	720	600	900	650
	% FULFILLED				90%
APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
TRAFFIC CROSSING MAJOR STREET	50	75	50	75	84
	% FULFILLED				112%

150% Satisfied:	Yes [ ]	No [X]
120% Satisfied:	Yes [ ]	No [X]
100% Satisfied:	Yes [ ]	No [X]
80% Satisfied:	Yes [X]	No [ ]

1A - MINIMUM VEHICULAR VOLUME: Total vehicle volume on all approaches for average day

1B - MINIMUM VEHICULAR VOLUME: Total vehicle volume on minor streets

2A - DELAY TO CROSS TRAFFIC: Total vehicle volume on major street for average day

2B - DELAY TO CROSS TRAFFIC: Total vehicle and pedestrian volume crossing major street; comprising: (1) lefts from both minor streets, (2) heaviest through from minor street, (3) 50% of heavier left turn from major street when following criteria met: (a) left turn volume >120 and (b) left turn volume plus opposing volume > 720, (4) pedestrians crossing the major street.

Signal Warrant Calculation

Major Street: Humber Station Rd

Minor Street: Street B

Comment FT (2036) Traffic Condition (Sat)

Number of Approaches: 1 [x] 2 [ ]

Tee Intersection Configuration: Yes [x] No [ ]

Flow Condition: Free Fw (Rural) [ ]
Restricted Flow (Urban) [x]

VOLUME		SAT	FACTOR *	
1A - All	-	1,648	n/a	412
1B - Minor	-	283	25%	71
2A - Major	-	1,365	25%	341
2B - Crossi	-	236	25%	59

* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% Satisfied:	Yes [ ]	No [X]	Warrant for new intersection with forecast traffic
120% Satisfied:	Yes [ ]	No [X]	Warrant for existing intersection with forecast traffic
100% Satisfied:	Yes [ ]	No [X]	Warrant for existing intersection with existing traffic *
COMBO 80% Satisfied:	Yes [ ]	No [X]	Warrant for existing intersection with existing traffic
80% Satisfied:	Yes [ ]	No [X]	

* Consider full underground provisions if 100% for forecast traffic

WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
ALL APPROACHES	480	720	600	900	412
	% FULFILLED				57%
APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
MINOR STREET APPROACHES	180	255	180	255	71
	% FULFILLED				28%

150% Satisfied:	Yes [ ]	No [X]
120% Satisfied:	Yes [ ]	No [X]
100% Satisfied:	Yes [ ]	No [X]
80% Satisfied:	Yes [ ]	No [X]

WARRANT 2 - DELAY TO CROSS TRAFFIC

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
MAJOR STREET APPROACHES	480	720	600	900	341
	% FULFILLED				47%
APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
FLOW CONDITION	FREE FLOW	REST. FLOW X	FREE FLOW	REST. FLOW	
TRAFFIC CROSSING MAJOR STREET	50	75	50	75	59
	% FULFILLED				79%

150% Satisfied:	Yes [ ]	No [X]
120% Satisfied:	Yes [ ]	No [X]
100% Satisfied:	Yes [ ]	No [X]
80% Satisfied:	Yes [ ]	No [X]

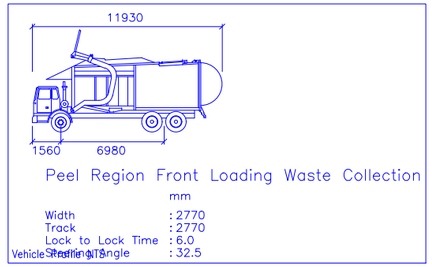
1A - MINIMUM VEHICULAR VOLUME: Total vehicle volume on all approaches for average day

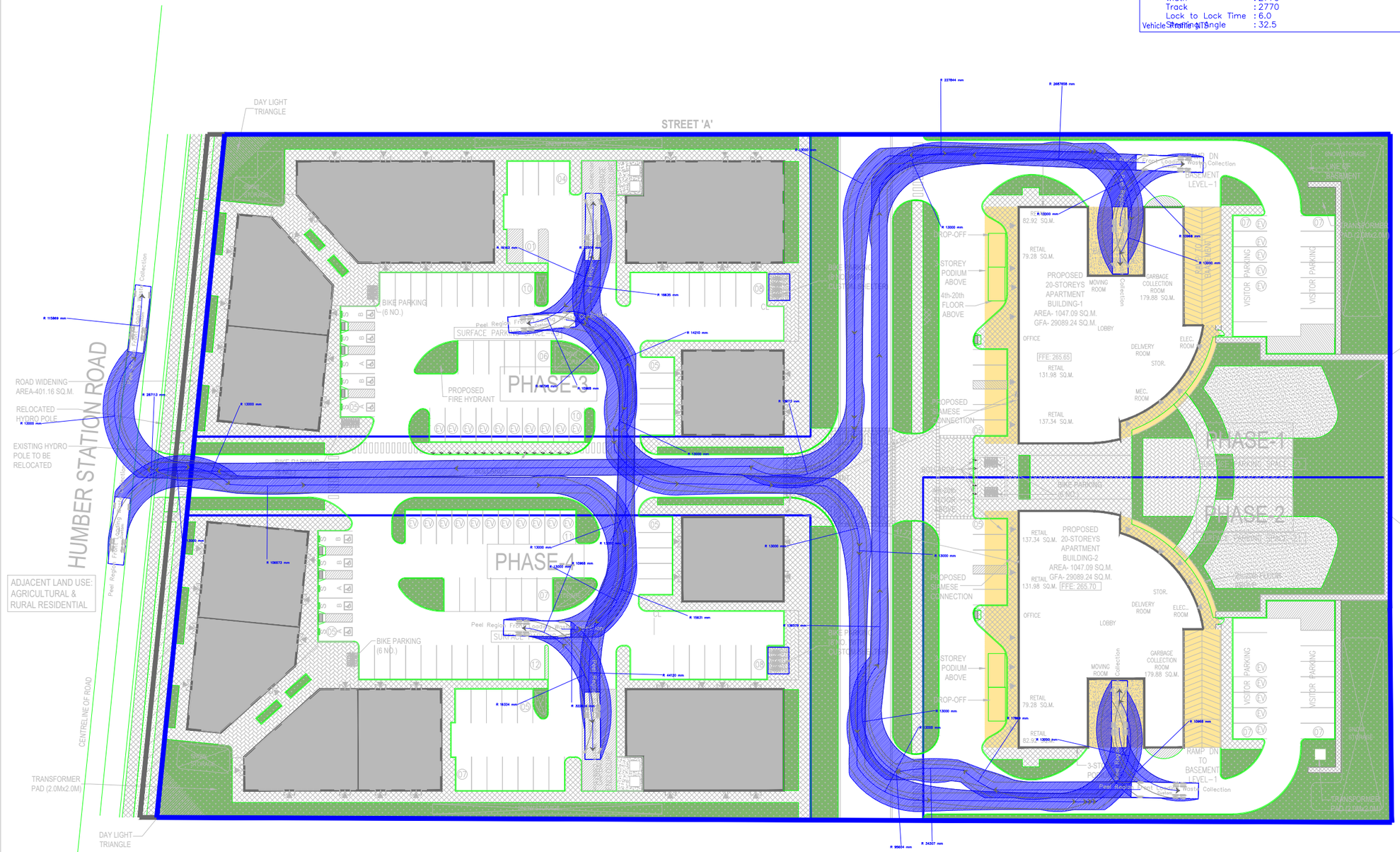
1B - MINIMUM VEHICULAR VOLUME: Total vehicle volume on minor streets

2A - DELAY TO CROSS TRAFFIC: Total vehicle volume on major street for average day

2B - DELAY TO CROSS TRAFFIC: Total vehicle and pedestrian volume crossing major street; comprising: (1) lefts from both minor streets, (2) heaviest through from minor street, (3) 50% of heavier left turn from major street when following criteria met: (a) left turn volume >120 and (b) left turn volume plus opposing volume > 720, (4) pedestrians crossing the major street.

Appendix F –
AutoTURN Analysis – Vehicle Movement Diagrams





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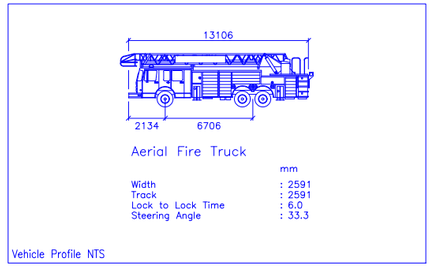
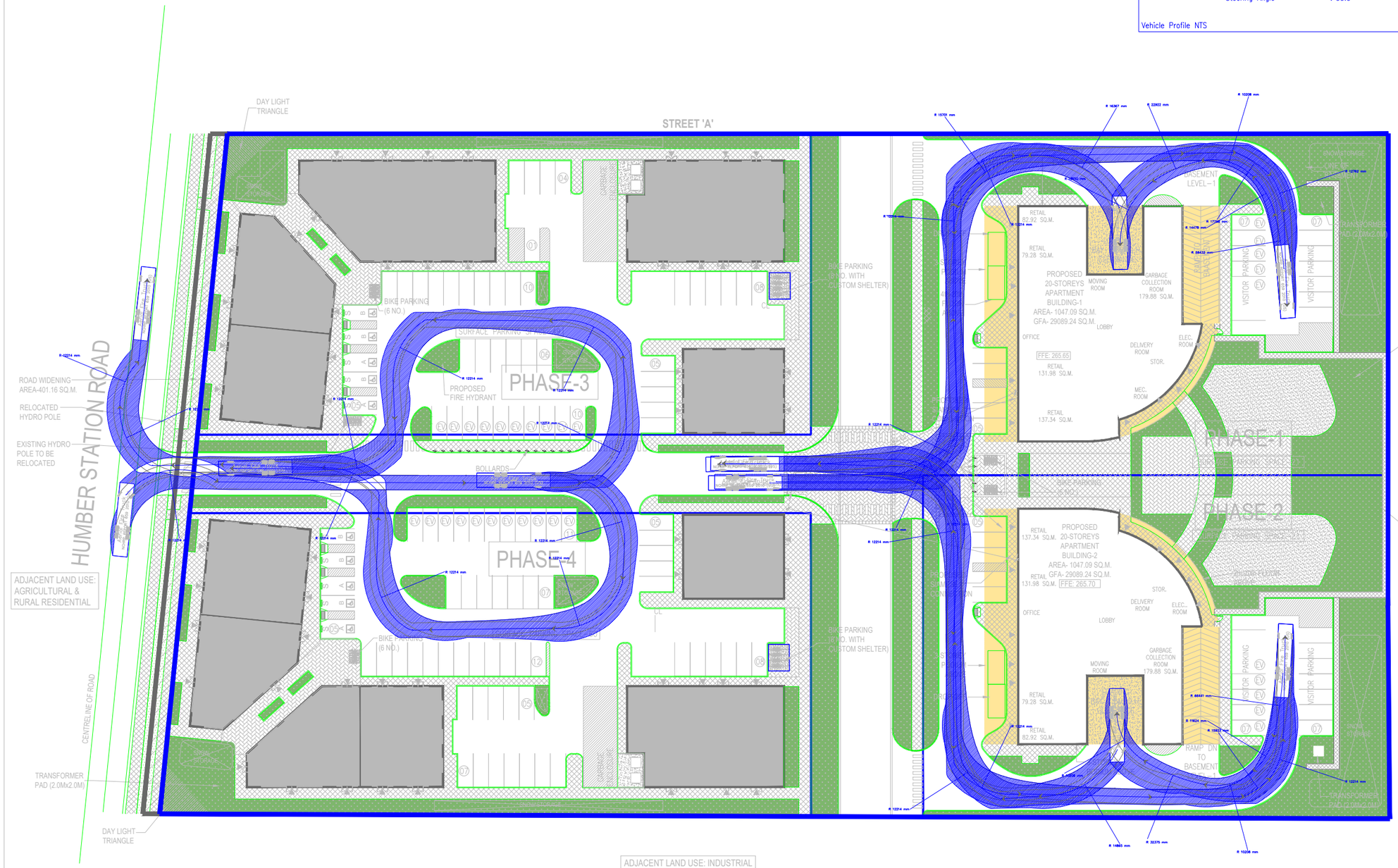
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Mixed-Use Development
'0' Humber Station Road
Town of Caledon

DRAWING TITLE:
AutoTURN Analysis
Peel Region
Front End Waste

DESIGN BY: J.N.	DATE: March 24, 2026
CHECKED BY: J.N.	PROJECT NO. NT-24-103
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-01





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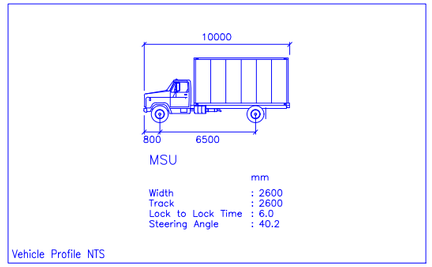
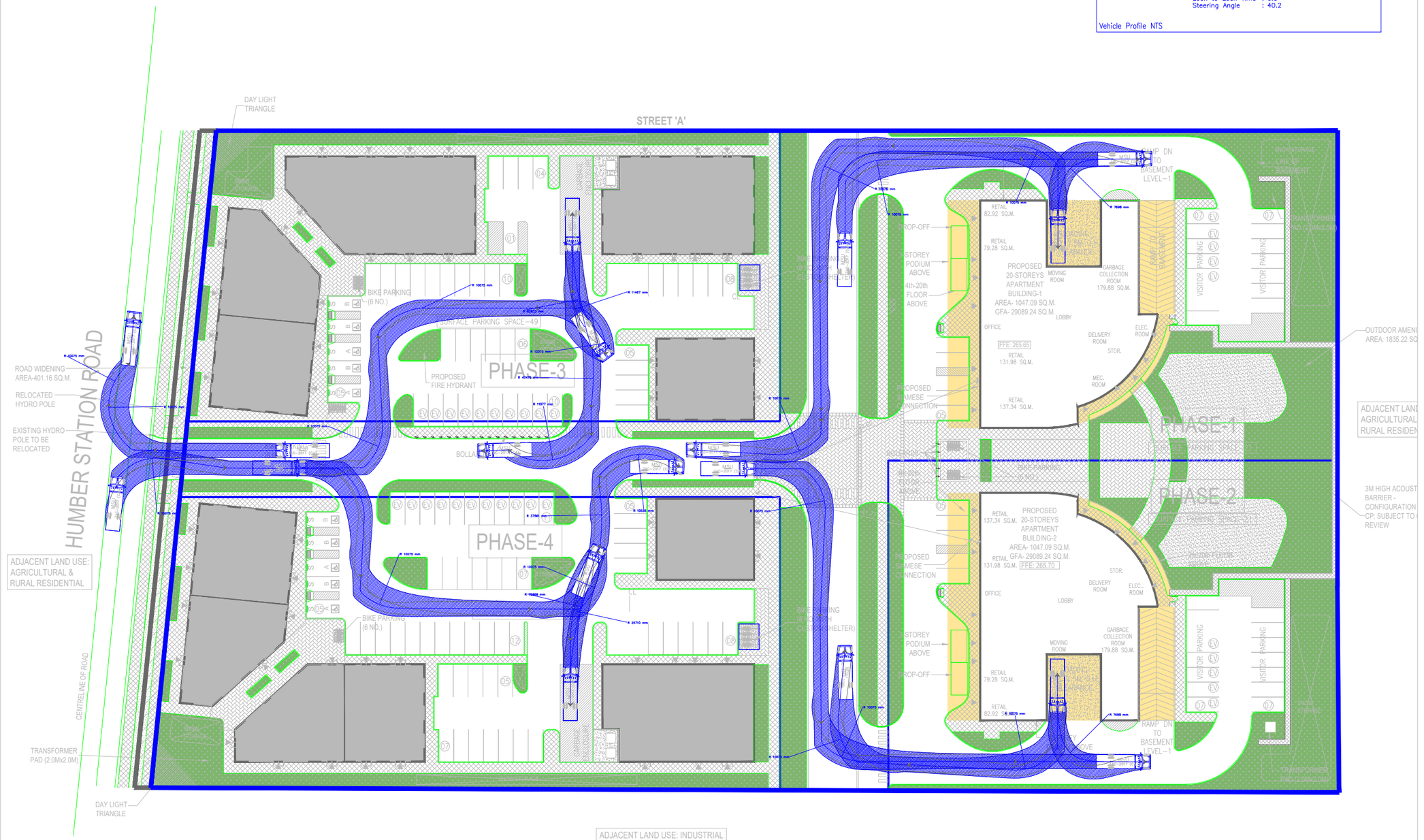
PROJECT NAME:
Mixed-Use Development
'0' Humber Station Road
Town of Caledon

DRAWING TITLE:
AutoTURN Analysis
NCHRP Report 659
Aerial Fire Truck

DESIGN BY: J.N.	DATE: March 24, 2026
CHECKED BY: J.N.	PROJECT NO. NT-24-103
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-02





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Mixed-Use Development
'0' Humber Station Road
Town of Caledon

DRAWING TITLE:
AutoTURN Analysis
MSU TAC-2017
Loading

DESIGN BY: J.N.	DATE: March 24, 2026
CHECKED BY: J.N.	PROJECT NO. NT-24-103
DRAWN BY: J.N.	DRAWING NO. AT-03
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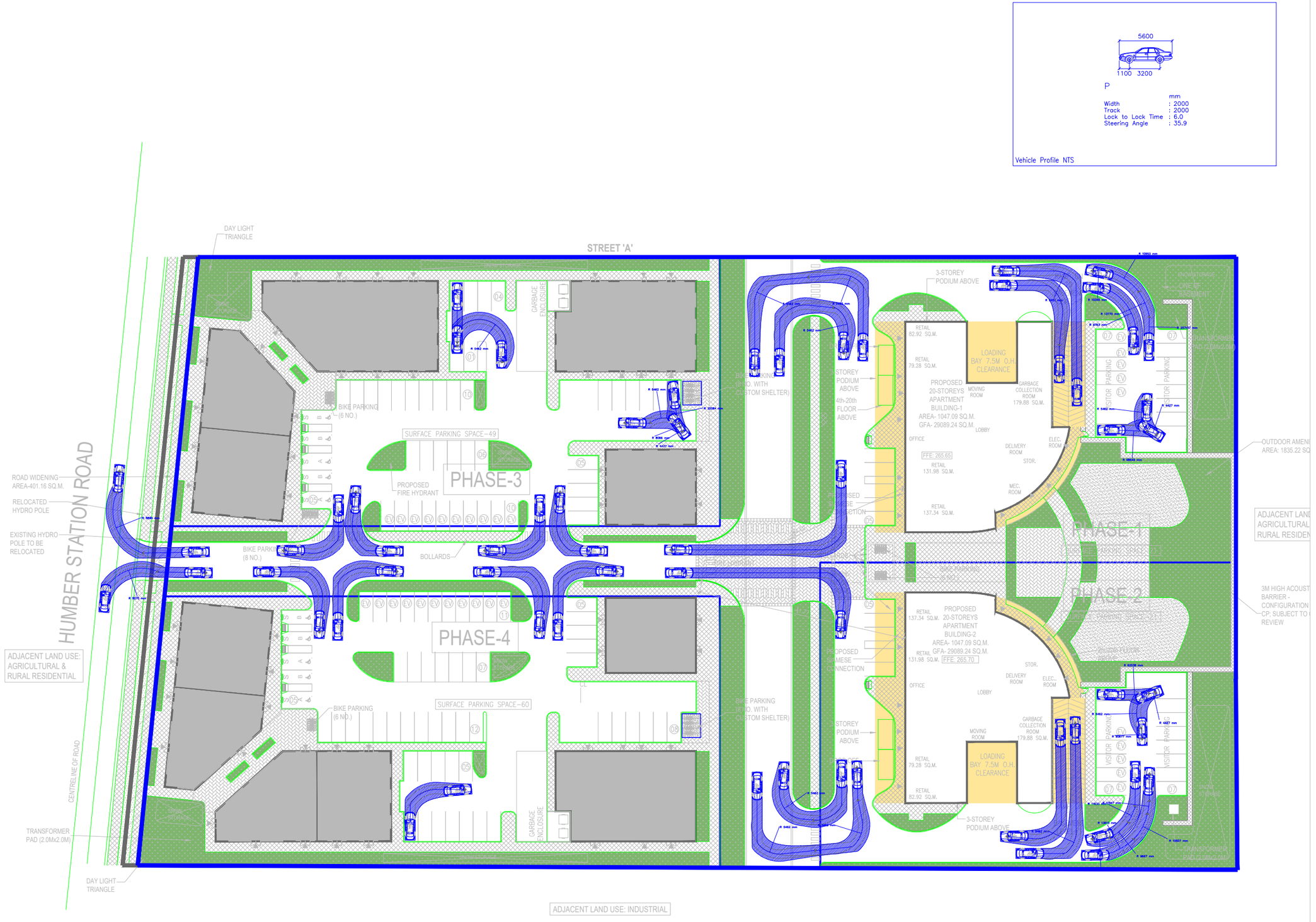

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'0' Humber Station Road
Town of Caledon

DRAWING TITLE:
AutoTURN Analysis
P TAC-2017

DESIGN BY: J.N.	DATE: March 24, 2026
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DRAWN BY: J.N.	DRAWING NO. AT-04
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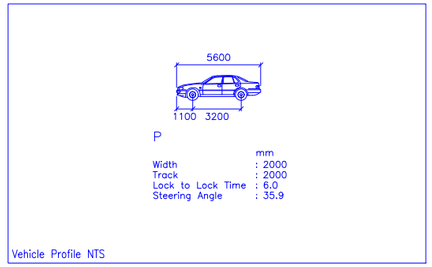

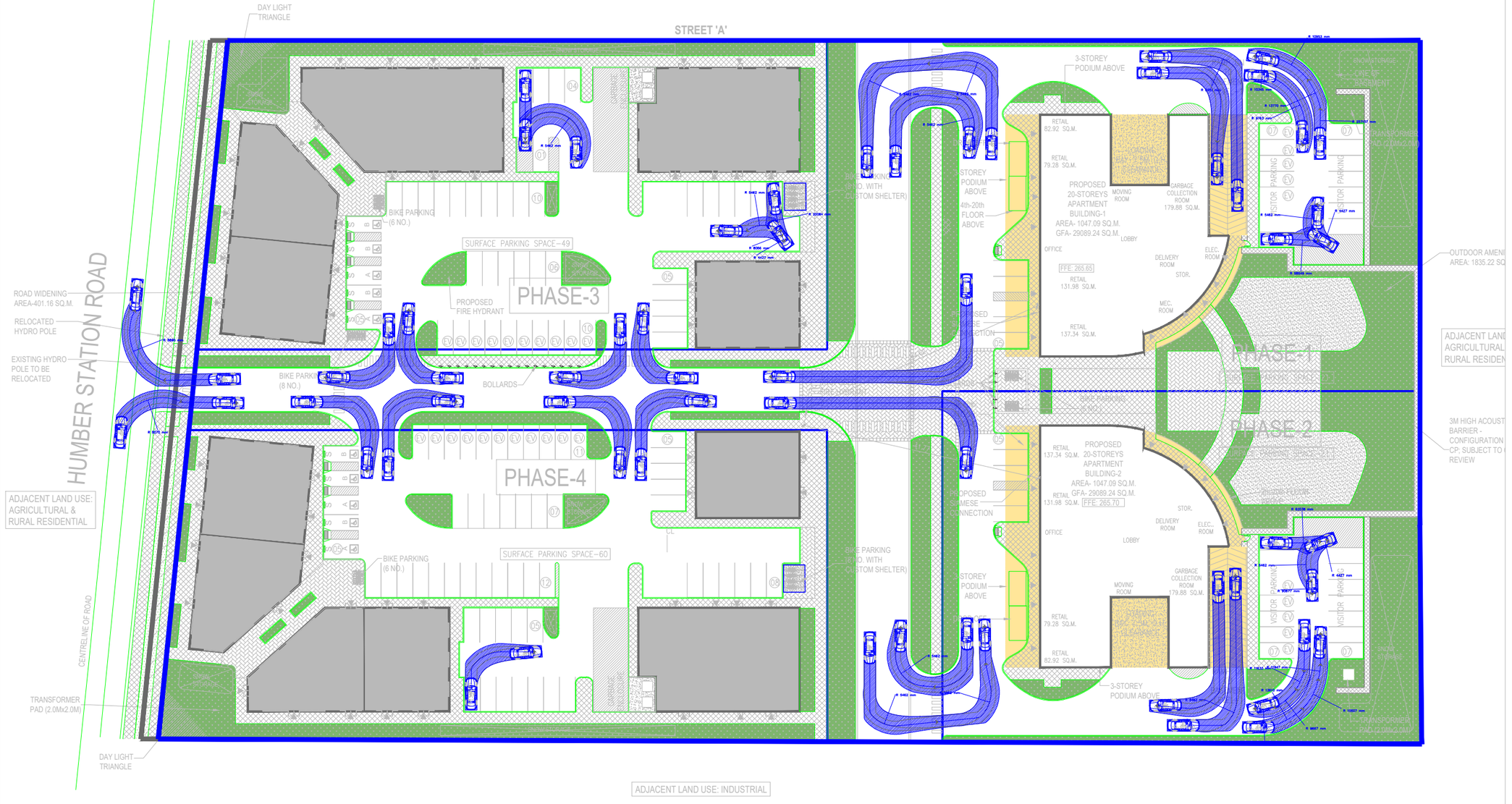

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'0' Humber Station Road
Town of Caledon

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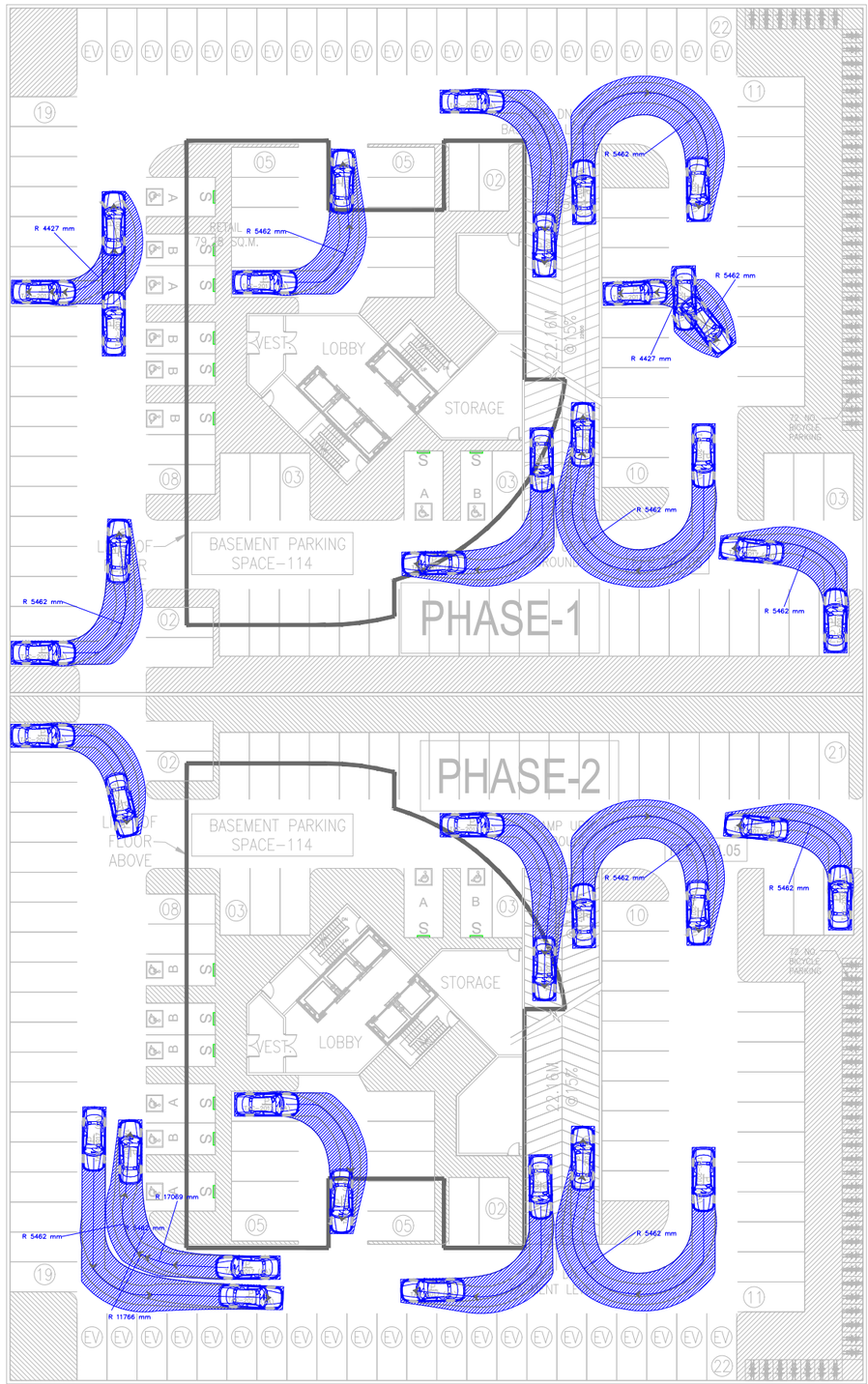
DRAWN BY: J.N.	
SCALE: 1:750	DRAWING NO. AT-04

P

	mm
Width	: 2000
Track	: 2000
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

Vehicle Profile NTS



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'0' Humber Station Road
Town of Caledon

DRAWING TITLE:
AutoTURN Analysis
P TAC-2017
P1

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CHECKED BY: J.N.	PROJECT NO. NT-24-103
DRAWN BY: J.N.	DRAWING NO. AT-05
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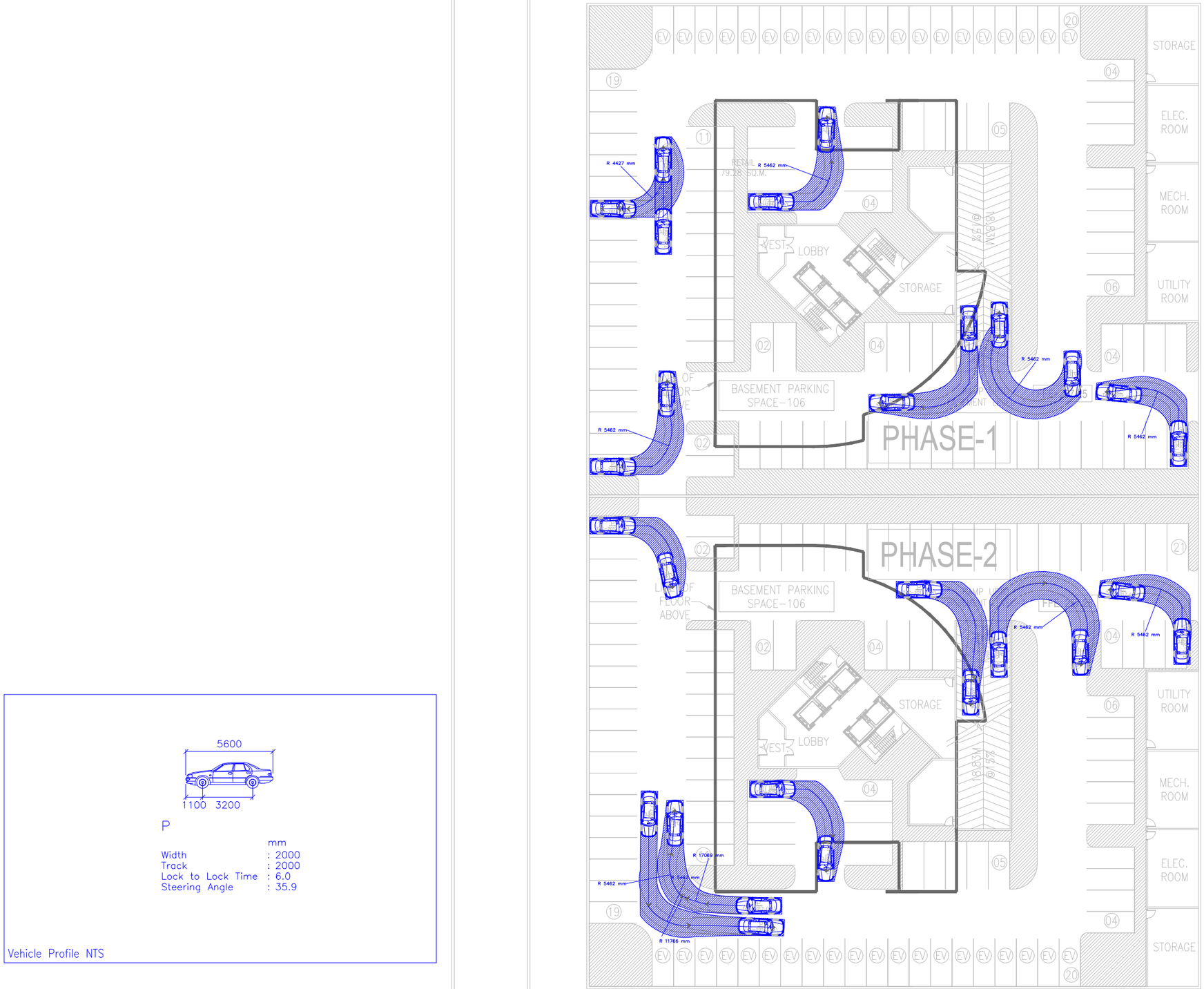

P

	mm
Width	: 2000
Track	: 2000
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

Vehicle Profile NTS

KEY PLAN

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PROJECT NAME:
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'0' Humber Station Road
Town of Caledon

DRAWING TITLE:
AutoTURN Analysis
P TAC-2017
P2

DESIGN BY: J.N.	DATE: March 24, 2026
CHECKED BY: J.N.	PROJECT NO. NT-24-103
DRAWN BY: J.N.	
SCALE: 1:500	DRAWING NO. AT-06