



BA Group

PROPOSED RESIDENTIAL DEVELOPMENT 2570-2590 ARGYLE ROAD CITY OF MISSISSAUGA

Urban Transportation Considerations Report

Prepared For: Raneer Management

September, 2020



**MOVEMENT
IN URBAN
ENVIRONMENTS**

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	TRANSPORTATION CONTEXT	5
2.1	Area Road Network	5
2.2	Area Transit Network.....	6
2.3	Area Cycling and Pedestrian Network.....	7
2.4	Existing Area Travel Characteristics	7
3.0	VEHICLE PARKING	11
3.1	Zoning By-law Requirements	11
3.2	Existing Parking Demand.....	11
3.2.1	Existing Resident Parking Demand	11
3.2.2	Existing Visitor Parking Demand.....	13
3.3	Proposed Parking Supply	14
3.4	Vehicle Parking Space Dimensions	15
4.0	LOADING	16
4.1	Loading Requirements.....	16
4.2	Proposed Loading Supply	16
5.0	BICYCLE PARKING	17
6.0	TRAFFIC VOLUME FORECASTING	18
6.1	Existing Traffic Volumes	18
6.2	Future Background Traffic Volumes.....	19
6.2.1	Corridor Growth.....	19
6.2.2	Background Developments.....	19
6.3	Site Traffic Volumes	19
6.3.1	Existing Site Trip Generation	19
6.3.2	New Site Trip Generation.....	20
6.3.3	Total Site Trip Generation	20
6.3.4	Site Trip Distribution.....	21
6.4	Future Total Traffic Volumes	21
7.0	TRAFFIC OPERATIONS ANALYSIS	27
7.1	Methodology	27
7.2	Input and Calibration Parameters	27
7.3	Signalized Intersections Operations Analysis	28



7.3.1	Dundas Street West/Parkerhill Road	28
7.3.2	Dundas Street West/Confederation Parkway	30
7.3.3	Confederation Parkway/King Street West	31
7.4	Unsignalized Intersections Operations Analysis	32
8.0	TRANSPORTATION DEMAND MANAGEMENT FRAMEWORK	34
9.0	SUMMARY AND CONCLUSIONS	35



LIST OF TABLES

Table 1	Development Statistics	2
Table 2	Existing Residential Modal Split in the Study Area	7
Table 3	Mississauga Zoning By-law 0225-2007 RA4-1 Parking Requirements	11
Table 4	Existing Resident Rental Records	12
Table 5	Existing Resident Parking Demand Surveys	12
Table 6	Existing Visitor Parking Demand Surveys	14
Table 7	Proposed Parking Supply	15
Table 8	City of Mississauga Zoning By-Law 0225-2007 Loading Space Requirements	16
Table 9	Mississauga Cycling Master Plan Bicycle Parking Requirements	17
Table 10	Traffic Data Information	18
Table 11	Background Developments	19
Table 12	Existing Site Trip Generation	20
Table 13	Proposed Development Site Trip Generation	20
Table 14	Total Site Trip Generation	21
Table 15	Residential Site Traffic Distribution	21
Table 16	Dundas Street West/Parkerhill Road	28
Table 17	Queue Analysis Results	29
Table 18	Dundas Street West/Confederation Parkway	30
Table 19	Confederation Parkway/King Street West	31
Table 20	Unsignalized Intersections	32

LIST OF FIGURES

Figure 1:	Site Location	3
Figure 2:	Site Context.....	4
Figure 3:	Existing Area Road Classifications	8
Figure 4:	Existing Area Lane Configurations.....	9
Figure 5:	Area Transit Network	10
Figure 6:	Existing Traffic Volumes	22
Figure 7:	Future Background Traffic Volumes	23



Figure 8:	New Site Traffic Volumes.....	24
Figure 9:	Total Site Traffic Volumes.....	25
Figure 10:	Future Total Traffic Volumes.....	26

TABLE OF APPENDICES

APPENDIX A:	Reduced-Scale Architectural Plans
APPENDIX B:	Parking Demand Survey Data
APPENDIX C:	Vehicle Manoeuvring Diagrams
APPENDIX D:	Turning Movement Count Data
APPENDIX E:	Signal Timing Plans
APPENDIX F:	Synchro Worksheets



1.0 INTRODUCTION

BA Group is retained by Rane Management to provide transportation consulting services related to the proposed development of lands municipally known as 2570-2590 Argyle Road in the City of Mississauga (referred to herein as “the site”).

The site is generally bounded by non-residential uses to the north, Argyle Road to the east, a residential site (Willow Walk Estates – 2542 and 2556 Argyle Road) to the south, and May Fix Creek to the west, with a residential subdivision beyond. **Figure 1** illustrates the site location.

Existing Site

The existing site consists of two 12-storey rental apartment buildings with a total of 253 residential units. The two buildings (referred to herein as “Building A” and “Building B”), are located on the northeast and southeast portions of the site, respectively.

Vehicular access to the site is provided via three unsignalized driveway connections to Argyle Road:

- The North Driveway is located approximately 100m south of Dundas Street West (centreline to centreline measurement).
- The Centre Driveway is located approximately 145m south of Dundas Street West.
- The South Driveway is located approximately 195m south of Dundas Street West.

Pick-up / drop-off facilities are provided between the two buildings, including a pick-up/drop-off loop and a visitor parking area.

Parking is provided in surface parking lots. A total of 322 parking spaces are provided for the two existing buildings, including 288 resident spaces and 34 visitor spaces.

Loading facilities are provided at the rear of the two existing buildings.

Figure 2 illustrates the existing site context.

Proposed Development

The proposed development includes one additional rental apartment building (referred to herein as “Building C”) to be constructed on the west portion of the site with 250 residential units. The two existing rental apartment buildings will be retained, for a total of 503 units on the site.

Vehicular access to the site is proposed to be maintained via the North and South Driveways. The Centre Driveway is proposed to be closed in order to provide enhanced pedestrian and cyclist connections through the site.

A summary of the development statistics is provided in **Table 1**.

TABLE 1 DEVELOPMENT STATISTICS

Use		Existing	Additional Proposed	Total
Residential Units		119 1-bedroom units <u>134 2-bedroom units</u> 253 units	101 1-bedroom units 123 2-bedroom units <u>26 3-bedroom units</u> 250 units	220 1-bedroom units 257 2-bedroom units <u>26 3-bedroom units</u> 503 units
Transportation Elements	Vehicle Parking Supply	288 resident spaces <u>34 visitor spaces</u> 322 parking spaces	215 resident spaces <u>67 visitor spaces</u> 282 parking spaces	503 resident spaces <u>101 visitor spaces</u> 604 parking spaces
	Loading Supply	2 loading spaces	2 loading spaces	4 loading spaces
	Bicycle Parking Supply	-	40 short-term <u>176 long-term</u> 216 total	40 short-term <u>176 long-term</u> 216 total

Parking is proposed in surface parking lots and a new garage which will be constructed in Building C. A total of 604 parking spaces are proposed, including 503 spaces for residents (effective ratio of 1.00 spaces/unit) and 101 spaces for visitors (effective ratio of 0.20 spaces/unit).

The two existing loading spaces will be maintained and two additional loading spaces will be provided in enclosed loading areas in Building C.

A total of 216 bicycle parking spaces are proposed, including 176 long-term spaces and 40 short-term spaces.

Reduced scale copies of the ground floor and parking levels are provided in **Appendix A**.

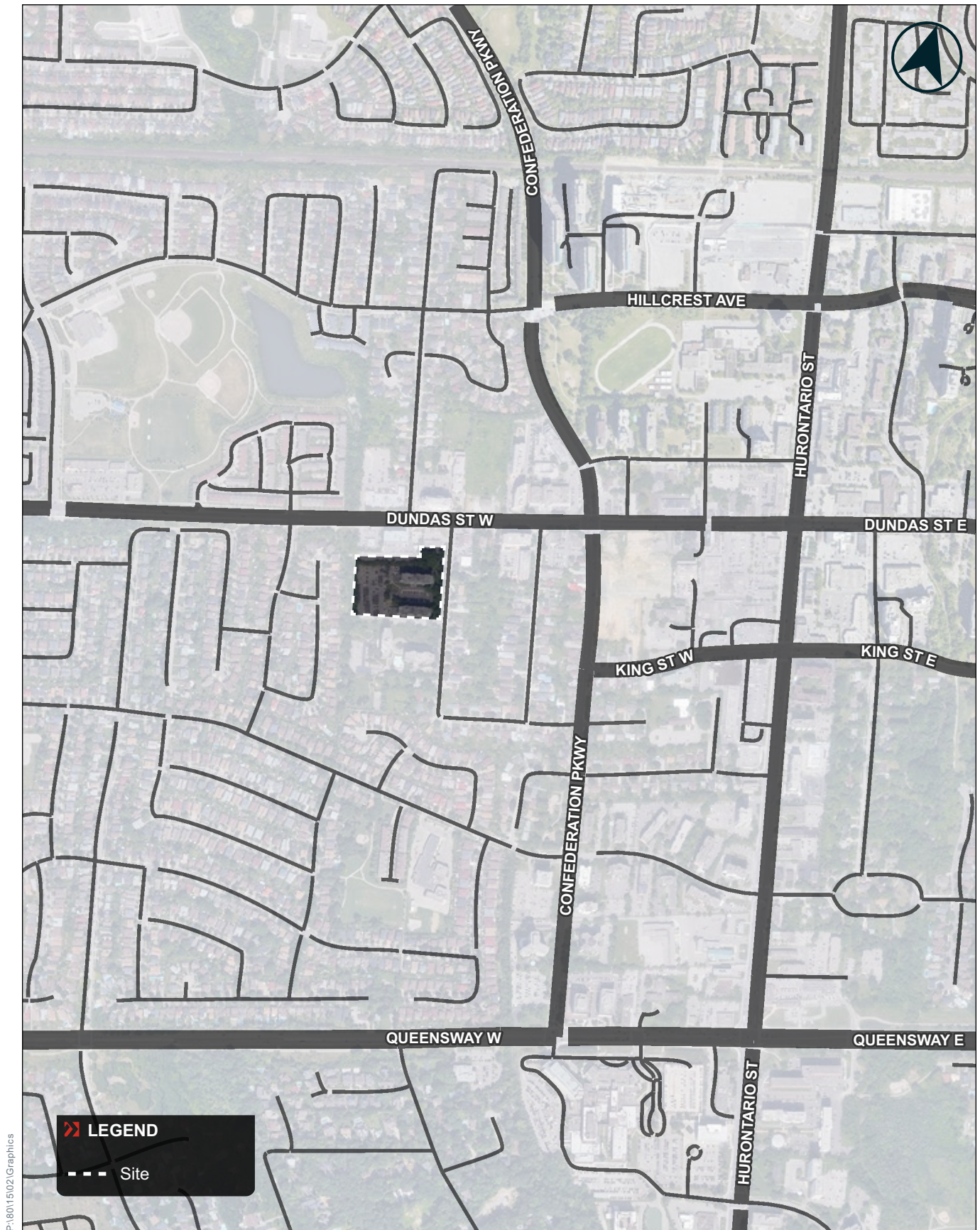


FIGURE 1 SITE LOCATION

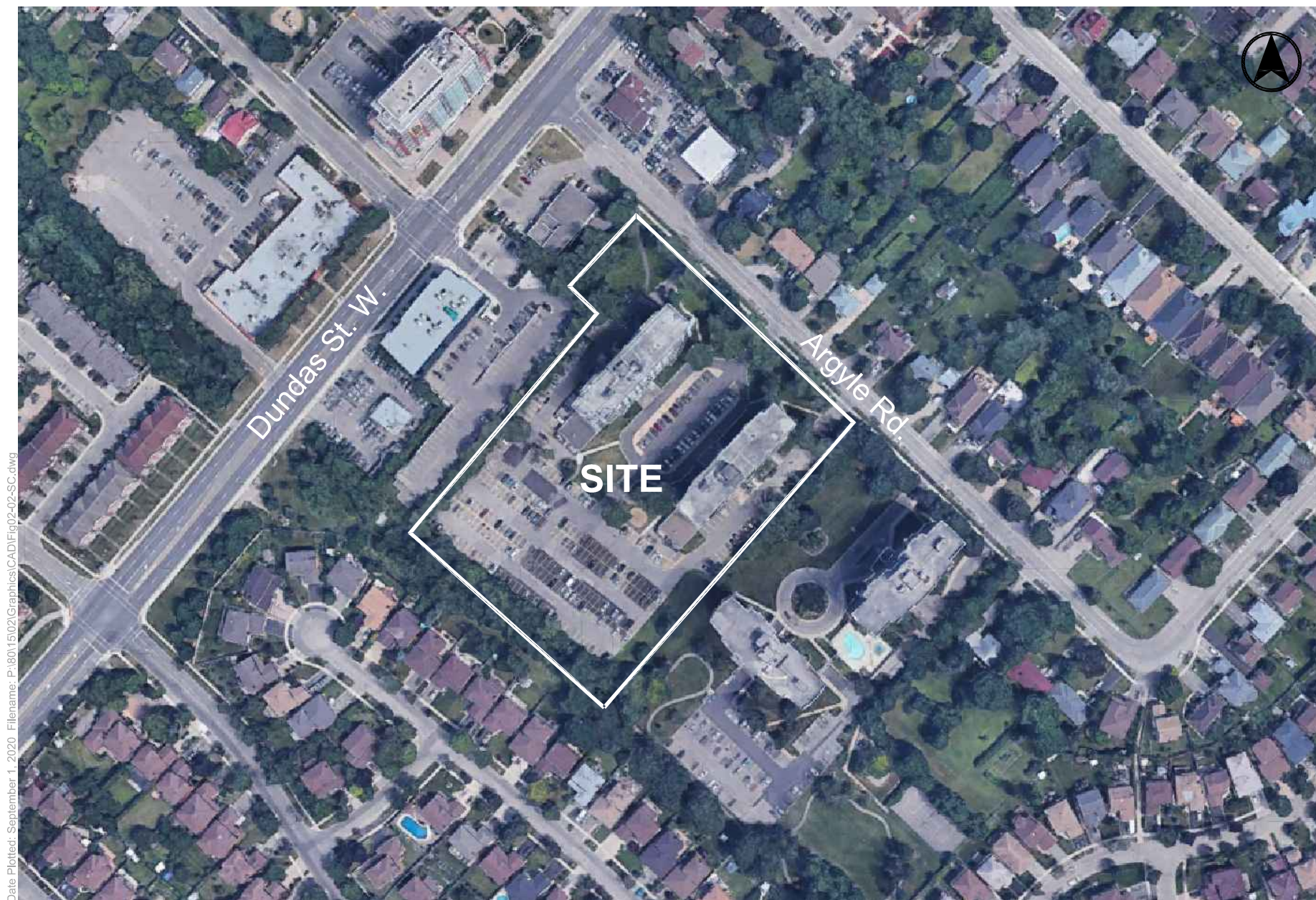


FIGURE 2 SITE CONTEXT

2.0 TRANSPORTATION CONTEXT

2.1 AREA ROAD NETWORK

The existing area road classifications and existing area lane configurations are illustrated on **Figure 3** and **Figure 4**, respectively.

Dundas Street West is an east-west arterial road under the jurisdiction of the City of Mississauga. It connects to Highway 6 to the west (where it becomes Highway 5 in the City of Flamborough) and Kingston Road to the east in the City of Toronto. Within the study area, it has a basic four-lane cross section with eastbound and westbound left-turn lanes at the intersections with Parkerhill Road and Confederation Parkway. It has a posted speed limit of 50 km/h. Parking is prohibited on both sides in the vicinity of the site.

Confederation Parkway is a north-south major collector road under the jurisdiction of the City of Mississauga. It connects to Queensway West to the south and Eglinton Avenue West to the north, where it continues as McLaughlin Road in the City of Brampton. Confederation Parkway has a basic four-lane cross-section with dedicated left turn lanes in the northbound and southbound directions at Dundas Street West. Through the study area, there are bicycle lanes on both sides indicated by pavement markings on the street and signs identifying the reserved lane. Parking is prohibited on both sides in the vicinity of the site.

Argyle Road is a north-south local road under the jurisdiction of the City of Mississauga. It connects to Dundas Street West in the north and Dunbar Road to the south. Within the study area, it has a two-lane cross section with left and right-turn lanes to Dundas Street West. It has an unposted and default speed limit of 50 km/h. Lay-by / on-street parking areas are provided on both sides of Argyle Road.

Dunbar Road is an east-west local road under the jurisdiction of the City of Mississauga. It connects to Argyle Road to the west and Confederation Parkway to the east. Within the study area, it has a two-lane cross section. It has an unposted and default speed limit of 50 km/h. Lay-by / on-street parking areas are provided on both sides of Dunbar Road.

Parkerhill Road is a north-south local road under the jurisdiction of the City of Mississauga. It connects to Dundas Street West to the south and Pinto Place / rail lines to the north. It has a two-lane cross section and left and right-turn lanes at the intersection with Dundas Street West. It has a posted speed limit of 50 km/h with on-street parking in some sections.

King Street West is an east-west major collector road under the jurisdiction of the City of Mississauga. It connects to Confederation Parkway to the west and Cliff Road to the east. It has a two-lane cross section and left and right-turn lanes at the intersection with Confederation Parkway. It has an unposted and default speed limit of 50 km/h. Parking is prohibited on both sides in the vicinity of the site.

Rugby Road is a north-south local road under the jurisdiction of the City of Mississauga. It connects to Dundas Street West to the north and Dunbar Road to the south. It has a two-lane cross section and left and right-turn lanes at the intersection with Dundas Street West. It has a posted speed limit of 50 km/h and provides lay-by areas / on-street parking along some sections.

2.2 AREA TRANSIT NETWORK

Existing Transit Network

The site is located in an area with a high level of transit accessibility with major bus routes operating on Dundas Street West, Confederation Parkway and Hurontario Street. Existing bus stops in the area serve Mississauga Transitway (MiWay) Bus Route 1/1C (Dundas), Bus Route 2 (Hurontario), Bus Route 28 (Confederation), Bus Route 101/101A (Dundas Express) and Bus Route 103 (Hurontario Express). The closest bus stops to the site are located within a walking distance of 150-250m (depending on direction), at the corner of the Dundas Street West/Argyle Road intersection.

Bus Route 1/1C (Dundas) generally operates in an east-west direction along Dundas Street. Route 1 (Dundas) operates between Lair Road/Ridgeway Drive to the west and Islington Subway Station on the Toronto Transit Commission (TTC) Subway Line 2 (Bloor-Danforth) to the east. Route 1C (Dundas-Collegeway) operates between South Common Centre and Islington Subway Station. Buses operate at 10-20 minute headways during the weekday morning and afternoon peak hours.

Bus Route 28 (Confederation) generally operates in a north-south direction along Confederation Parkway between the City Centre Transit Terminal to the north and Trillium Health Centre to the south. Buses operate at 10-15 minute headways during the weekday morning and afternoon peak hours.

Bus Route 2 (Hurontario) generally operates in a north-south direction along Hurontario Street between the City Centre Transit Terminal to the north and Port Credit GO Station to the south. Buses operate at 10-15 minute headways during the weekday morning and afternoon peak hours.

Bus Route 101/101A (Dundas Express) generally operates in an east-west direction along Dundas Street. Route 101 (Dundas Express) operates between South Common Centre to the west and Islington Subway Station to the east. Route 101A (Dundas Express) operates between Ridgeway Drive and Islington Subway Station. Buses operate at 10-15 minute headways during the weekday morning and afternoon peak hours.

Bus Route 103 (Hurontario Express) generally operates in a north-south direction along Hurontario Street between Brampton Gateway Terminal to the north and Trillium Health Centre to the south. Buses operate at 10-15 minute headways during the weekday morning and afternoon peak hours.

The existing transit context is illustrated on **Figure 5**.

Future Transit Network

The City of Mississauga Transportation Master Plan contemplates significant improvements to the transit network in the short term. The Hurontario Light Rail Transit (HuLRT) will run along Hurontario Street connecting between the Port Credit GO Station and the Brampton Gateway Terminal, with completion targeted for 2022. This will provide an even greater level of transit accessibility in close proximity to the site.

2.3 AREA CYCLING AND PEDESTRIAN NETWORK

In 2018, the City of Mississauga published the *Cycling Master Plan* that outlines the following cycling-related facilities in the study area:

- Existing bike lanes on both sides of Confederation Parkway within the site vicinity;
- Dundas Street West is identified for a proposed cycle track / separated bike lane;
- King Street West is identified for a proposed bike lane;

Sidewalks are available on both sides of Dundas Street West, Confederation Parkway and on the west side of Argyle Road. The site has a "Walk Score"¹ of 86 out of 100 representing an area that allows for an excellent level of walkability to retail, grocery, schools, parks, errands, etc.

2.4 EXISTING AREA TRAVEL CHARACTERISTICS

Table 2 summarizes 2016 Transportation of Tomorrow Survey (TTS) data as it pertains to the modal splits of peak directional person trips for apartment buildings within the site vicinity.

TABLE 2 EXISTING RESIDENTIAL MODAL SPLIT IN THE STUDY AREA

Mode	Inbound	Outbound	Selected
Driver	49%	52%	51%
Passenger	5%	8%	6%
Auto Total	54%	60%	57%
Transit	34%	30%	32%
Cycle	0%	1%	1%
Walk	12%	9%	10%
Non-Auto Total	46%	40%	43%

Notes:

1. Survey data is based on 2006 GTA zones 3656, 3657, 3665 and 3666.

A review of the survey data confirms that a high proportion of residents travel by non-auto means (in the order of 43% of the total site trips in each direction).

With the proposed development of the site, future travel demand characteristics and substantial reliance on non-automobile based travel for residents will continue and will serve to reduce traffic-related impact and parking supply needs of the site.

¹ Based on the "Walk Score" methodology. See <https://www.walkscore.com/methodology.shtml> for details.

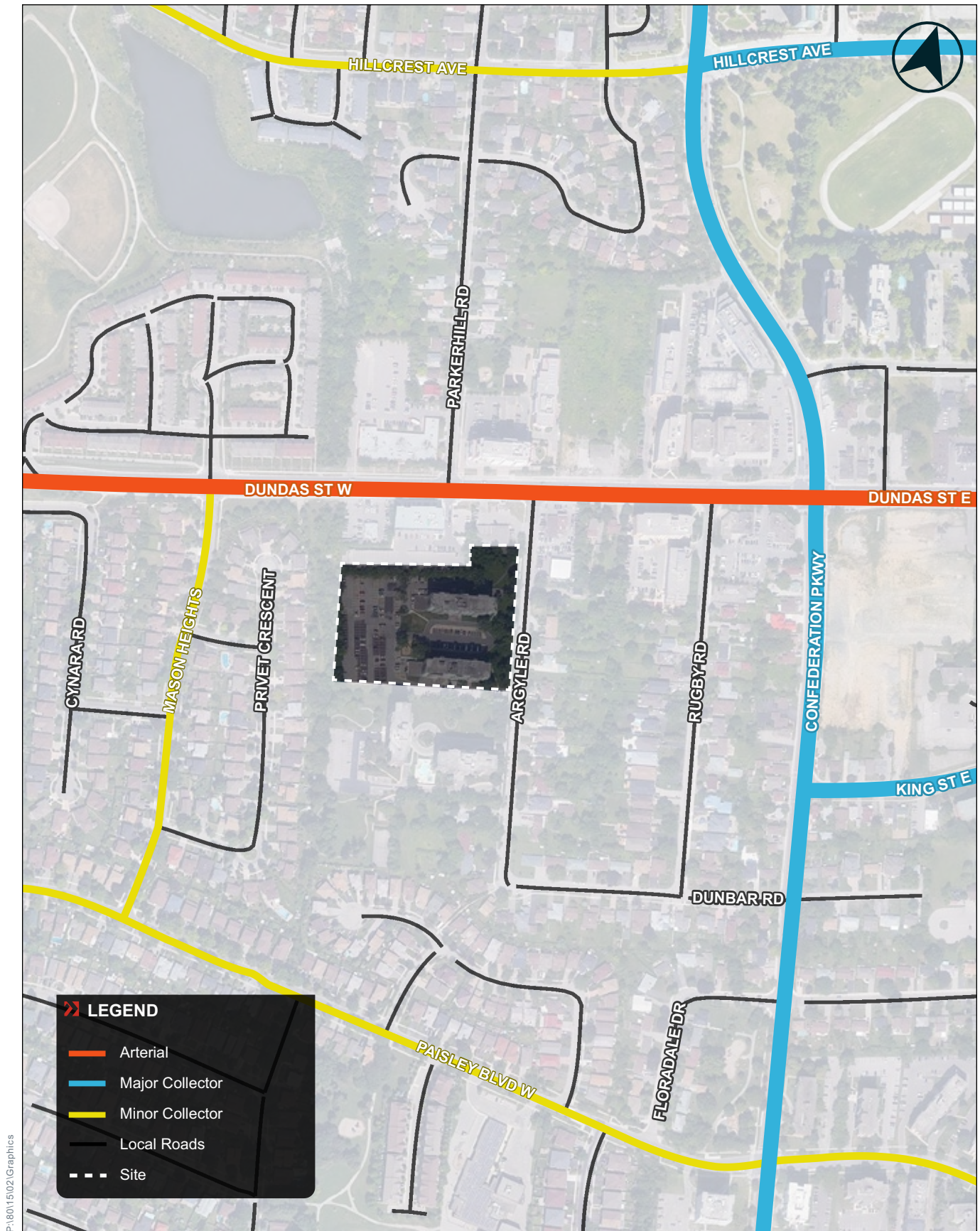


FIGURE 3 EXISTING AREA ROAD CLASSIFICATIONS

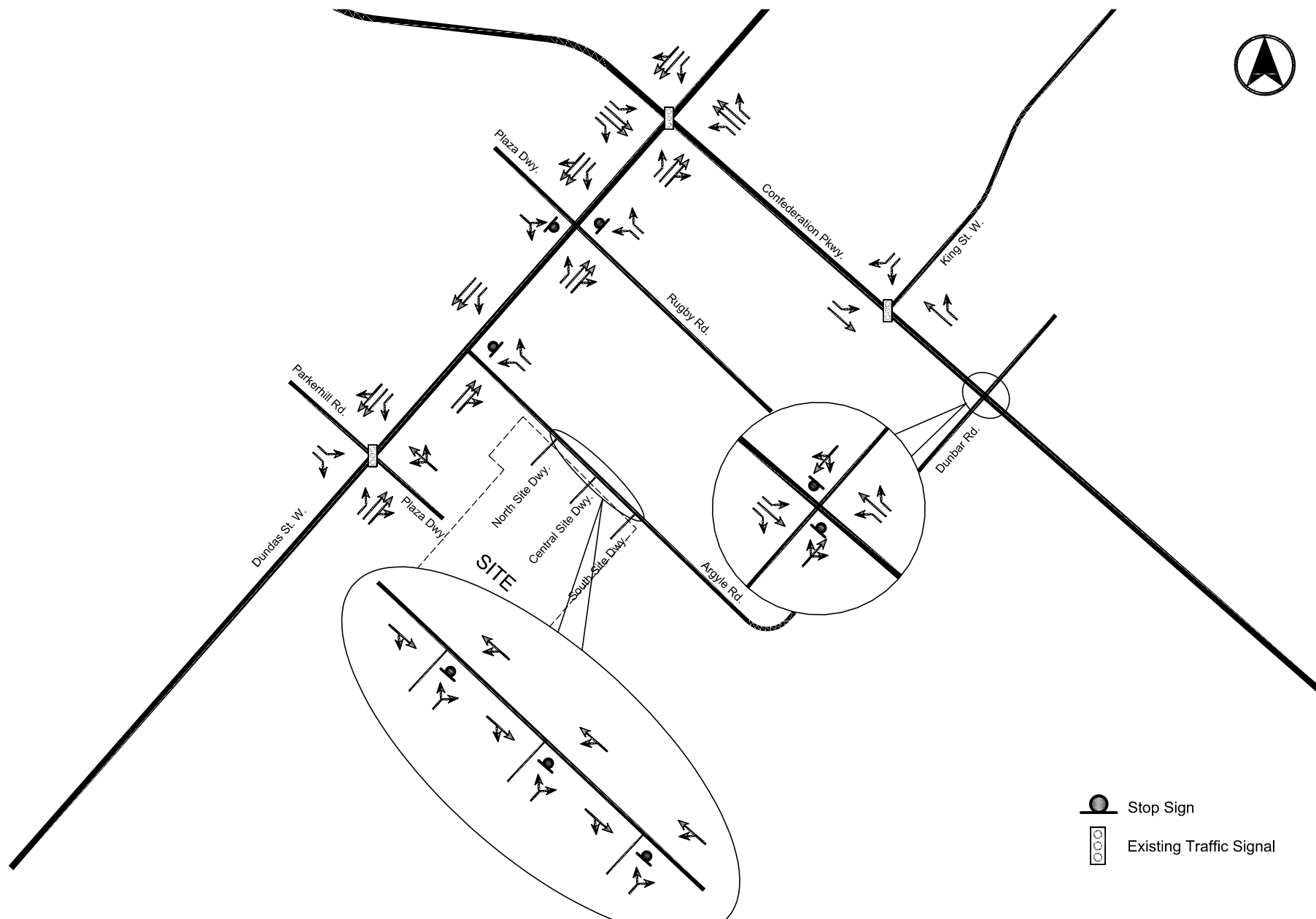


FIGURE 4 EXISTING AREA LANE CONFIGURATIONS

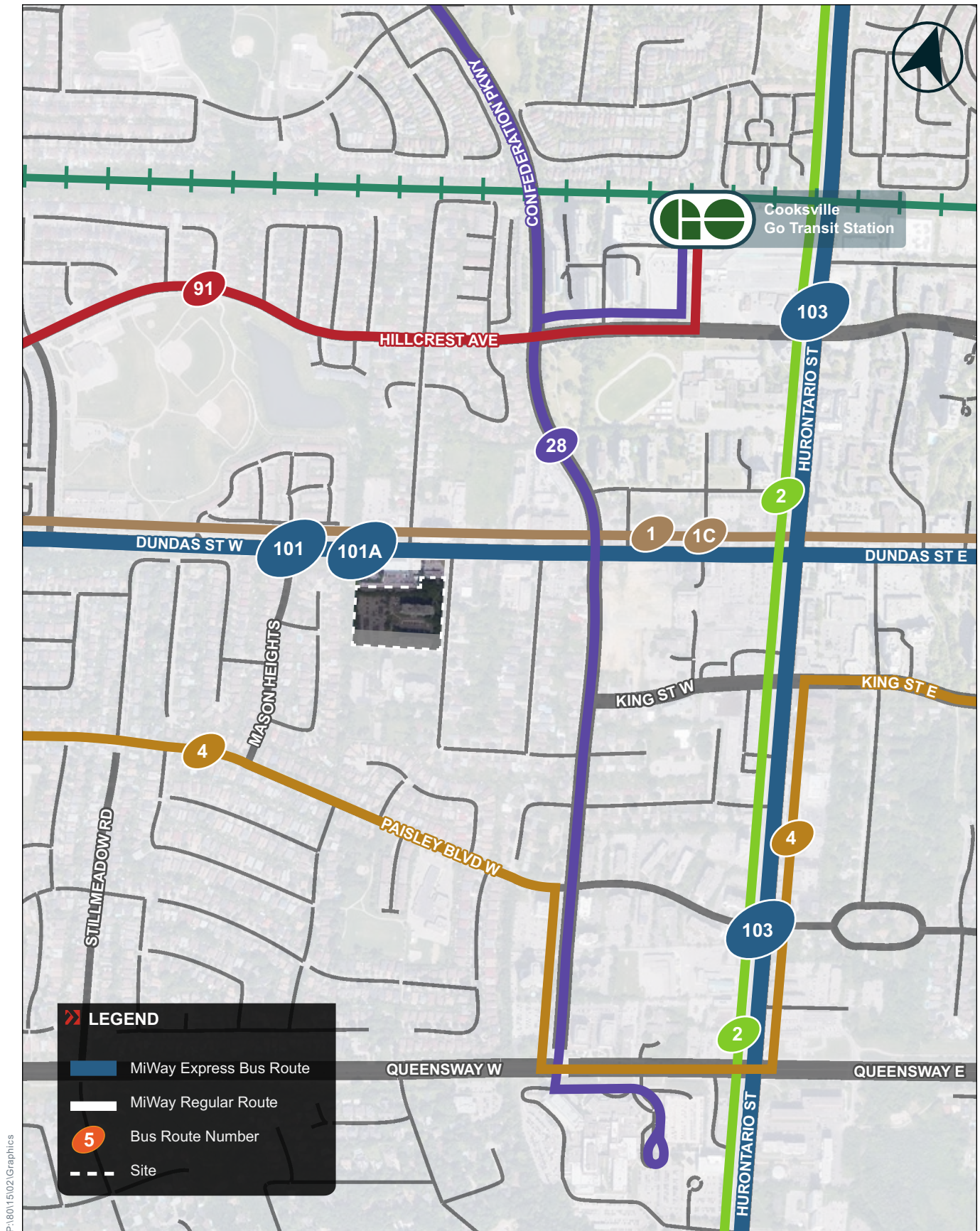


FIGURE 5 EXISTING TRANSIT NETWORK

3.0 VEHICLE PARKING

3.1 ZONING BY-LAW REQUIREMENTS

The site is subject to the parking requirements of the City of Mississauga Zoning By-law 0225-2007. The site is zoned “RA4-18”, which is classified as “Apartments”. Application of the City of Mississauga Zoning By-law 0225-2007 is summarized in **Table 3** and results in the requirement of 750 parking spaces including 649 spaces for residents and 101 spaces for visitors.

TABLE 3 MISSISSAUGA ZONING BY-LAW 0225-2007 RA4-1 PARKING REQUIREMENTS

Use	Number of Units	Minimum Rate	Number of Parking Spaces
Resident			
Bachelor	0	1.00 spaces / unit	0
1-Bedroom	220	1.18 spaces / unit	260
2-Bedroom	257	1.36 spaces / unit	350
3-Bedroom	26	1.50 spaces / unit	39
Sub-Total	503	--	649
Non-Resident			
Visitor	503	0.20 spaces / unit	101
Total Spaces Required			750

Notes:

1. For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

3.2 EXISTING PARKING DEMAND

3.2.1 Existing Resident Parking Demand

A total of 288 resident spaces are provided on the site. The effective resident parking supply ratio is 1.14 spaces/unit.

Parking space rental records were obtained from the building owner/operator. The data for each unit type is summarized in **Table 4**. The rental records confirm that the existing buildings are typically fully occupied year-round (i.e. 100%) and reflect an overall parking demand ratio of 1.00 space/occupied unit.

TABLE 4 EXISTING RESIDENT RENTAL RECORDS

Unit Type	Existing Units	Occupancy Rate	Occupied Units	Number of Parking Spaces	Rate (spaces / occupied unit)
Total	253	100%	253	254	100%

Notes:

1. Occupancy data provided by Rane Management on November 26, 2019.

In addition to the above, BA Group has also undertaken a series of resident parking demand surveys at the existing buildings located on the site. These surveys were conducted on the following days:

- Tuesday, October 22, 2019, observed at 3:00 a.m.;
- Wednesday, October 23, 2019, observed at 3:00 a.m.; and
- Thursday, October 24, 2019, observed at 3:00 a.m.

The surveys were completed at a time when most residents are likely to be home (i.e. at night). A summary of the observed parking demand is provided in **Table 5**. Detailed parking demand survey results are attached in **Appendix B**. A conservative assumption of 95% building occupancy was adopted in the calculation of 'observed' parking demand, despite the rental records showing 100% occupancy. This assumption creates a buffer (i.e. more spaces than the minimum) between the observed parking demand rate and the target parking supply rate.

TABLE 5 EXISTING RESIDENT PARKING DEMAND SURVEYS

Count Date	Total Number of Resident Parking Spaces	Occupied Parking Spaces	Unoccupied Parking Spaces	Rate (spaces / occupied unit)
Tuesday October 22, 2019	288	233	55	0.97
Wednesday October 23, 2019		233	55	0.97
Thursday October 24, 2019		233	55	0.97

Notes:

1. As a conservative measure / buffer, 95% of all existing dwelling units over two apartment buildings (a total of 253 units) are assumed to be occupied although the occupancy records show a 100% occupancy rate. $95\% \times 253 \text{ units} = 240 \text{ units}$.

Peak resident parking demand recorded during the survey period was consistently 233 occupied spaces (0.97 spaces/occupied unit). Based on the observed parking demand at the existing buildings, the existing resident parking supply of 288 spaces exceeds the practical needs of the site.

Based on the resident parking rate of 0.97 spaces/occupied unit that was observed at the site, a buffered parking supply rate of 1.00 spaces/unit is proposed for all buildings on the site.

3.2.2 Existing Visitor Parking Demand

A total of 34 visitor spaces are provided on the site. The effective visitor parking supply ratio is 0.13 spaces/unit.

BA Group has undertaken a series of visitor parking demand surveys at the existing buildings located on the site. These surveys were completed on the following days:

- Friday, October 4, 2019, observed between 4:00 p.m. and 10:00 p.m.;
- Saturday, October 5, 2019, observed between 2:00 p.m. and 10:00 p.m.;
- Sunday, October 6, 2019, observed between 2:00 p.m. and 10:00 p.m.;
- Friday, October 18, 2019, observed between 4:00 p.m. and 10:00 p.m.;
- Saturday, October 19, 2019, observed between 2:00 p.m. and 10:00 p.m.;
- Sunday, October 20, 2019, observed between 2:00 p.m. and 10:00 p.m.;
- Friday, October 25, 2019, observed between 4:00 p.m. and 10:00 p.m.;
- Saturday, October 26, 2019, observed between 2:00 p.m. and 10:00 p.m.; and
- Sunday, October 27, 2019, observed between 2:00 p.m. and 10:00 p.m.

These surveys were undertaken when visitors were most likely to park on-site (i.e. weekends and weekday evenings). In addition to the visitor parking on-site, on-street parking activity was also observed along sections of Argyle Road. This demand has been added to the observed visitor parking demand on-site. A summary of the observed visitor parking demand is provided in **Table 6**.

TABLE 6 EXISTING VISITOR PARKING DEMAND SURVEYS

Count Date	Total Number of Visitor Parking Spaces	Peak Time	Maximum Occupied Parking Spaces	Unoccupied Parking Spaces	Rate (spaces / occupied unit)
Friday October 4, 2019	34	10:00 p.m.	32	2	0.13
Saturday October 5, 2019		7:00 p.m.	32	2	0.13
Sunday October 6, 2019		8:00 p.m.	34	0	0.14
Friday October 18, 2019		10:00 p.m.	33	1	0.14
Saturday October 19, 2019		5:00 p.m. 6:00 p.m.	34	0	0.14
Sunday October 20, 2019		7:00 p.m. 9:00 p.m.	34	0	0.14
Friday October 25, 2019		9:00 p.m.	33	1	0.14
Saturday October 26, 2019		9:00 p.m. 10:00 p.m.	34	0	0.14
Sunday October 27, 2019		5:00 p.m. 7:00 p.m. 8:00 p.m.	32	2	0.13

Notes:

1. As a conservative measure / buffer, 95% of all existing dwelling units over two apartment buildings (a total of 253 units) are assumed to be occupied although the occupancy records show a 100% occupancy rate. $95\% \times 253 \text{ units} = 240 \text{ units}$.

Peak visitor parking demand recorded during the survey period varied between 32 occupied spaces (0.13 spaces/occupied unit) to 34 occupied spaces (0.14 spaces/occupied unit). Based on the observed parking demand at the existing buildings, the existing visitor parking supply of 34 spaces (0.14 spaces/occupied unit or 0.13 spaces/unit) meets the parking needs of the site.

With the proposed development of the site, a visitor parking supply of 0.20 spaces/unit is proposed for all buildings on the site, which meets the minimum supply requirement of the City of Mississauga Zoning By-law 0225-2007. The proposed supply exceeds the maximum observed visitor parking demand on the site.

3.3 PROPOSED PARKING SUPPLY

The proposed minimum parking supply rates for residents and visitors have been developed based on the review of existing parking demand. The proposed minimum rates are as follows:

- Resident parking supply rate: 1.00 spaces / unit; and
- Visitor parking supply rate: 0.20 spaces / unit (meets Zoning By-law 0225-2007 requirement).

The development concept plan illustrates 604 parking spaces including 503 spaces for residents and 101 spaces for visitors. **Table 7** summarizes the proposed parking supply by location.

TABLE 7 PROPOSED PARKING SUPPLY

	Parking Supply		Total
	Surface	Garage	
Resident	83	420	503
Visitor	101	-	101
Total	184	420	604

The proposed parking supply will meet the proposed minimum rates based on the practical requirements of the site.

3.4 VEHICLE PARKING SPACE DIMENSIONS

A total of 48 resident parking spaces located within the surface parking lot in the southwest corner of the site have slightly-reduced dimensions as compared to those required under the City of Mississauga's Zoning By-law 0225-2007.

The minimum Zoning By-law requirements are summarized as follows:

2.6m width x 5.2m length with a 7.0m drive aisle width

The proposed parking spaces have the following dimensions:

47 parking spaces have dimensions of 2.6m width x 5.2m length with a **6.7m drive aisle**

1 parking space has dimensions of **2.5m width** (effective width on an angle to the driveway) x 5.2m length with a 7.0m drive aisle

The design vehicle is based on an empirical review of the modern passenger vehicle fleet in Canada. Based on a statistical review of the top 100 vehicle models and sales in Canada between the years 2005 to 2014, the 95th percentile passenger design vehicle has the dimensions of approximately 2.0m width x 5.15m length (equivalent to a Dodge Grand Caravan). The practical allowance for door openings is 0.30m on either side for a total of 2.6m. The total module dimension for the 47 parking spaces with a reduced drive aisle, including the parking space length of 5.2m and drive aisle width of 6.7m (11.9m), exceeds typical minimum parking space and drive aisle dimensions in other municipalities including the City of Toronto (11.6m). This provides adequate manoeuvring area for design vehicles, particularly given the fact that a one-way circulation is proposed in this area. The parking space with a reduced effective width of 2.5m is the last parking space in the module, and therefore allows for door openings of design vehicles without obstructions or conflict with adjacent parking spaces. On this basis, the proposed parking space dimensions accommodate the design vehicles and are appropriate. A provision allowing for these reduced dimensions should be included in the site-specific Zoning By-law.

4.0 LOADING

4.1 LOADING REQUIREMENTS

Loading space requirements for the proposed development are summarized in **Table 8**. Application of the prevailing City of Mississauga Zoning By-Law 0225-2007 to the proposed development results in a requirement for three (3) loading spaces with minimum dimensions of 3.5 metres by 9.0 metres.

TABLE 8 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 LOADING SPACE REQUIREMENTS

Use	Building	Number of Units	Minimum Requirement	Number of Loading Spaces
Residential	A	126	1 loading space for apartment dwelling containing > 30 units	1
	B	127		1
	C	250		1
Total				3

4.2 PROPOSED LOADING SUPPLY

The two (2) existing loading spaces will be maintained and two (2) additional loading spaces will be provided in an enclosed loading areas in Building C.

The four (4) loading spaces will exceed the City of Mississauga Zoning By-Law requirements. The site plan can appropriately accommodate the needs of the design vehicles. Vehicle Manoeuvring Diagrams illustrating the inbound and outbound manoeuvres of a Peel Region garbage collection vehicle and a Single Unit (SU) truck are attached in **Appendix C**.

5.0 BICYCLE PARKING

The existing buildings do not have any bicycle parking spaces. The recommended bicycle parking supply rates of the City of Mississauga Cycling Master Plan have been applied to Building C. Application of these rates would result in the requirement for a total of 195 spaces (of which 175 are long-term and 20 are short-term spaces), as summarized in **Table 9**.

TABLE 9 MISSISSAUGA CYCLING MASTER PLAN BICYCLE PARKING REQUIREMENTS

Use	Building	Number of Units	Minimum Rate	Number of Bicycle Parking Spaces
Residential	C	250	Long-term: 0.70 spaces per unit Short-term: 0.08 spaces per unit Total: 0.78 spaces per unit	175 <u>20</u> 195

Notes:

- For the calculation of the required residential parking, the appropriate resident and / or visitor rate or ratio shall be calculated for each component and then rounded. Fractions of less than 0.5 shall be rounded down to the nearest whole number. Fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

A total of 216 bicycle parking spaces are proposed for Building C, including 176 long-term spaces and 40 short-term spaces. The proposed number of bicycle parking spaces exceeds the requirements for Building C based on recommended rates. Due to the rental tenure of the buildings, the bicycle parking spaces may be allocated to residents of the existing buildings (Buildings A and B) or the proposed building (Building C), based on location and availability.

6.0 TRAFFIC VOLUME FORECASTING

6.1 EXISTING TRAFFIC VOLUMES

Base existing turning movement volumes were established for intersections within the area road network for the weekday morning and afternoon peak hours, and are based on recent traffic count information collected by Spectrum Traffic Inc. on behalf of BA Group.

Traffic counts adopted as the basis for the traffic operations analysis are summarized in **Table 10**. Turning movement count data is provided in **Appendix D**.

TABLE 10 TRAFFIC DATA INFORMATION

Intersection	Date	Conducted By
Dundas Street West / Parkerhill Road	Tuesday, October 22, 2019	Spectrum Traffic Data Inc.
Dundas Street West / Argyle Road		
Dundas Street West / Rugby Road / Plaza Driveway		
Dundas Street West / Confederation Parkway		
Argyle Road / North Site Access		
Argyle Road / Middle Site Access		
Argyle Road / South Site Access		
Confederation Parkway / King Street West		
Confederation Parkway / Dunbar Road		

Existing turning movement volumes were rounded to the nearest five (5) vehicles and reviewed in detail to ensure a general consistency in the traffic volumes on links between intersections. Where necessary, minor volume adjustments were made to balance traffic volumes between intersections to provide a representative traffic volume base for the purposes of the traffic operations analyses.

The existing, rounded and balanced baseline area traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 6**.

6.2 FUTURE BACKGROUND TRAFFIC VOLUMES

The development of future background traffic volumes is discussed in the following sections. Future background traffic volumes are illustrated on **Figure 7**.

6.2.1 Corridor Growth

A corridor growth rate of 2% per annum has been assumed and applied to through traffic volumes along Dundas Street and Confederation Parkway and applied linearly per year.

6.2.2 Background Developments

Allowances were made to account for new traffic generated by other development proposals in proximity to the site that are either under construction, approved or under review. A total of three (3) background developments have been considered including a total of 806 residential units and 5,650 m² retail Gross Floor Area (GFA). A summary of the background developments are provided in **Table 11**.

Trip generation and traffic assignments adopted for each background development are based upon information documented in the traffic impact studies prepared for each project.

TABLE 11 BACKGROUND DEVELOPMENTS

Development Address	Development Statistics	Report Source	Trip Generation / Distribution Source
2512-2532 Argyle Road	112 residential units	Nextrans Consulting	TIS Report October 2018
86-90 Dundas Street East	289 residential units 160 m ² retail GFA	GHD Consulting	TIS Report October 2018
89-95 Dundas Street East	405 residential units 5,490 m ² retail GFA	GHD Consulting	TIS Report October 2019

6.3 SITE TRAFFIC VOLUMES

6.3.1 Existing Site Trip Generation

Existing residential site trip generation is calculated based on the collected turning movement data from Spectrum Traffic Inc. on Tuesday, October 22, 2019 at the site driveways. The existing site trip generation rates are summarized in **Table 12**.

There are in the order of 90 and 95 existing two-way residential trips in the weekday morning and afternoon peak hours, respectively.

TABLE 12 EXISTING SITE TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Existing Site Trips ¹ (253 existing units)	25	65	90	50	45	95
Existing Site Trip Rate (trips/unit)	0.10	0.26	0.36	0.20	0.18	0.38

Notes:

- Existing site trips are rounded to the nearest five (5).

6.3.2 New Site Trip Generation

The trip generation potential of the proposed development is calculated based on the existing trip rates. The site trip generation is summarized in **Table 13**. New site trips are illustrated on **Figure 8**.

The site is expected to generate in the order of 90 and 95 new two-way trips in the weekday morning and afternoon peak hours, respectively.

TABLE 13 PROPOSED DEVELOPMENT SITE TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Existing Site Trip Rate (trips/unit)	0.10	0.26	0.36	0.20	0.18	0.38
Proposed Development Site Trips (250 new units)	25	65	90	50	45	95

Notes:

- Site trips are rounded to the nearest five (5).

6.3.3 Total Site Trip Generation

The site is expected to generate in the order of 180 and 190 total two-way trips in the weekday morning and afternoon peak hours, respectively. The site total trip generation potential is summarized in **Table 14**. Total site trips are illustrated on **Figure 9**.

TABLE 14 TOTAL SITE TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Existing Site Trips (253 existing units)	25	65	90	50	45	95
Proposed Development Site Trips (250 new units)	25	65	90	50	45	95
Total Site Trips (503 units)	50	130	180	100	90	190

Notes:

1. Site trips are rounded to the nearest five (5).

6.3.4 Site Trip Distribution

New site traffic has been assigned onto the area road network based on existing site travel patterns observed at the site driveways and a review of travel information provided by the 2016 Transportation for Tomorrow Survey (TTS) for home-based trips in the site environs. The site traffic distribution is summarized in **Table 15**.

TABLE 15 RESIDENTIAL SITE TRAFFIC DISTRIBUTION

To / From	Corridor	Inbound Distribution	Outbound Distribution
East	Dundas Street West	30%	30%
West	Dundas Street West	20%	20%
North	Confederation Parkway	10%	10%
South	Confederation Parkway	40%	40%
Total		100%	100%

Notes:

1. 2006 TTS zones considered include 3656, 3657, 3665 and 3666.
2. Inbound and outbound distributions are based on collected data from the weekday afternoon and morning peak hours, respectively.

6.4 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes established by adding the new site traffic volumes (**Figure 8**) to future background traffic volumes (**Figure 7**) are illustrated on **Figure 10**.

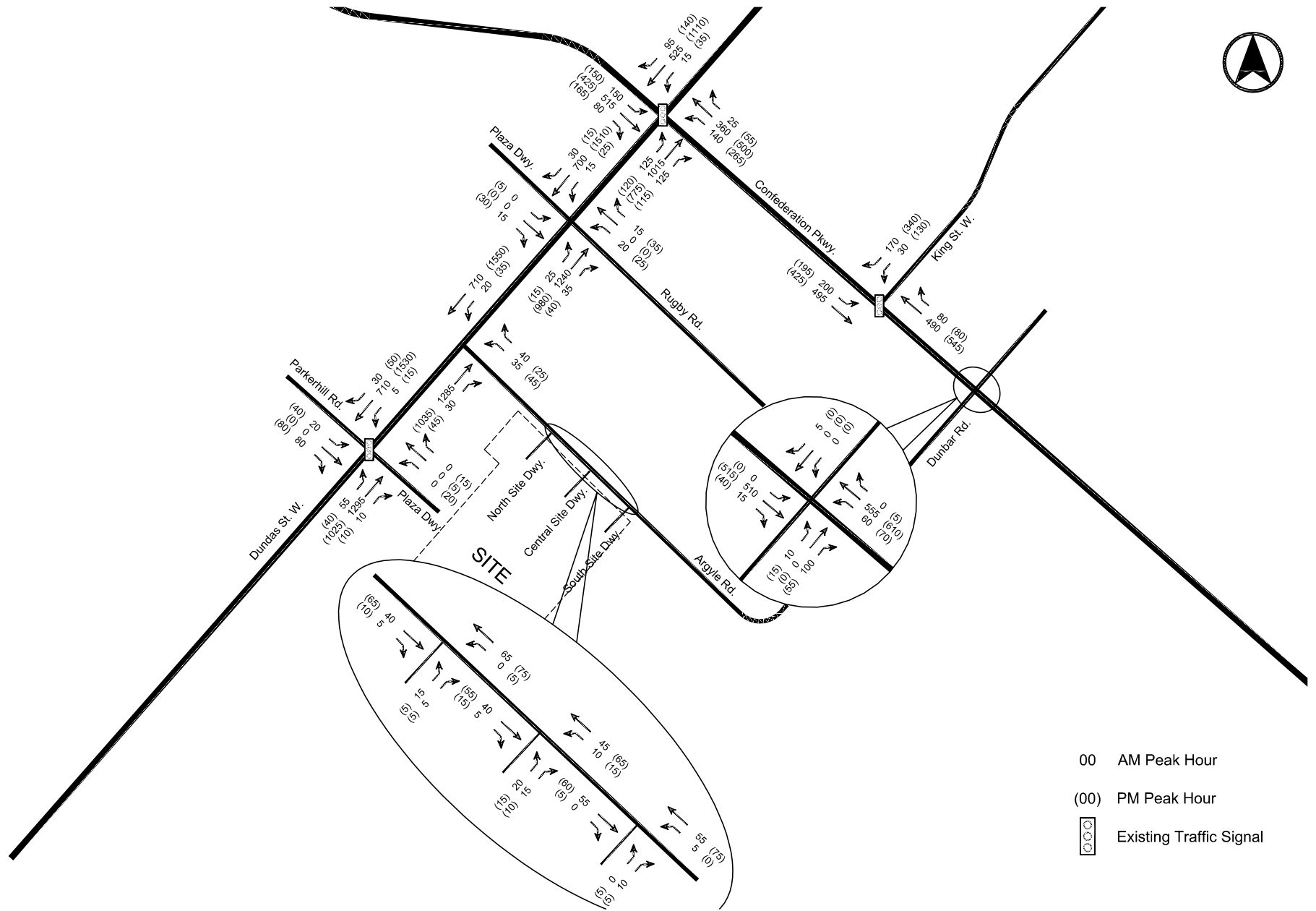


FIGURE 6 EXISTING TRAFFIC VOLUMES

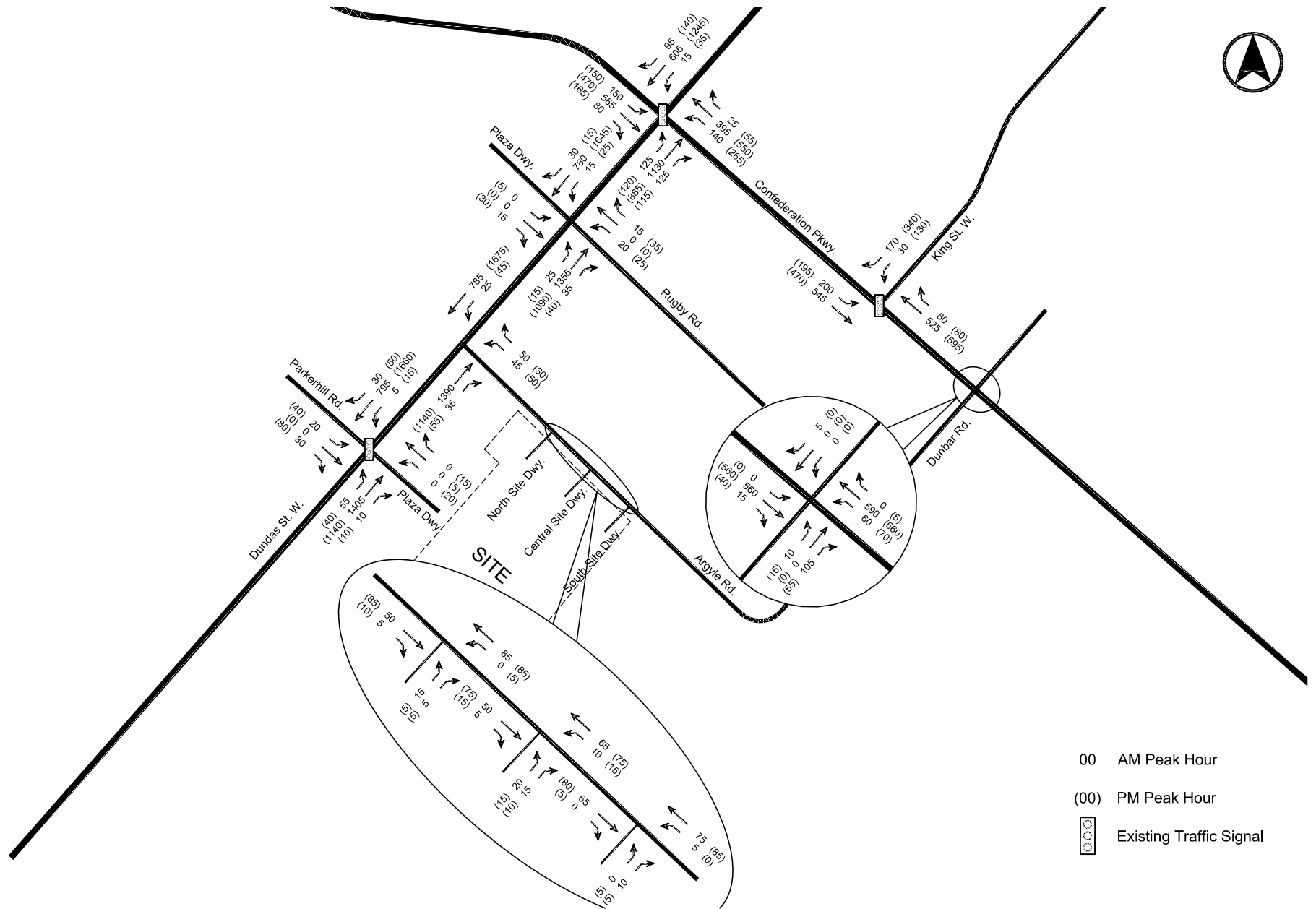


FIGURE 7 FUTURE BACKGROUND TRAFFIC VOLUMES

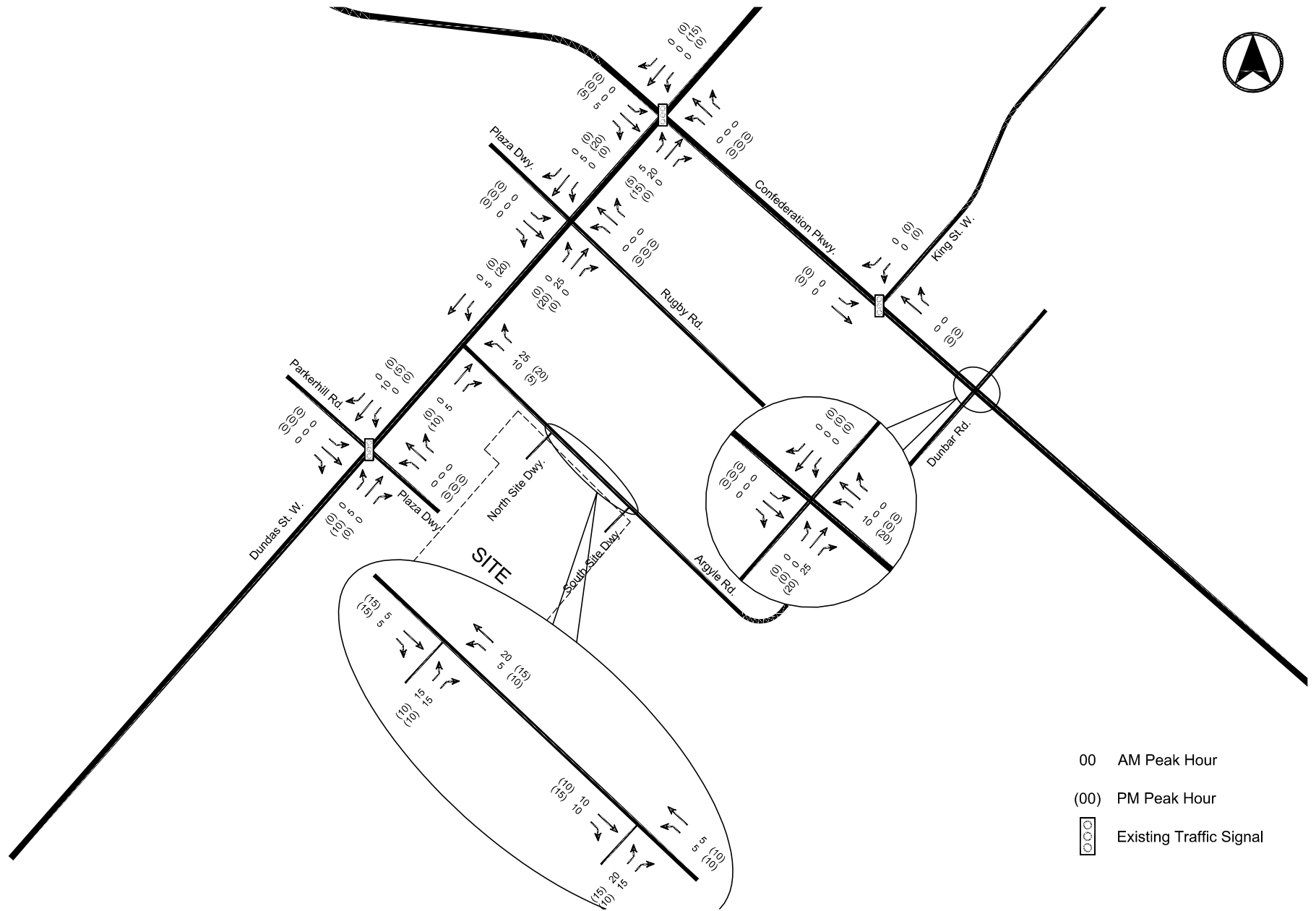


FIGURE 8 NEW SITE TRAFFIC VOLUMES

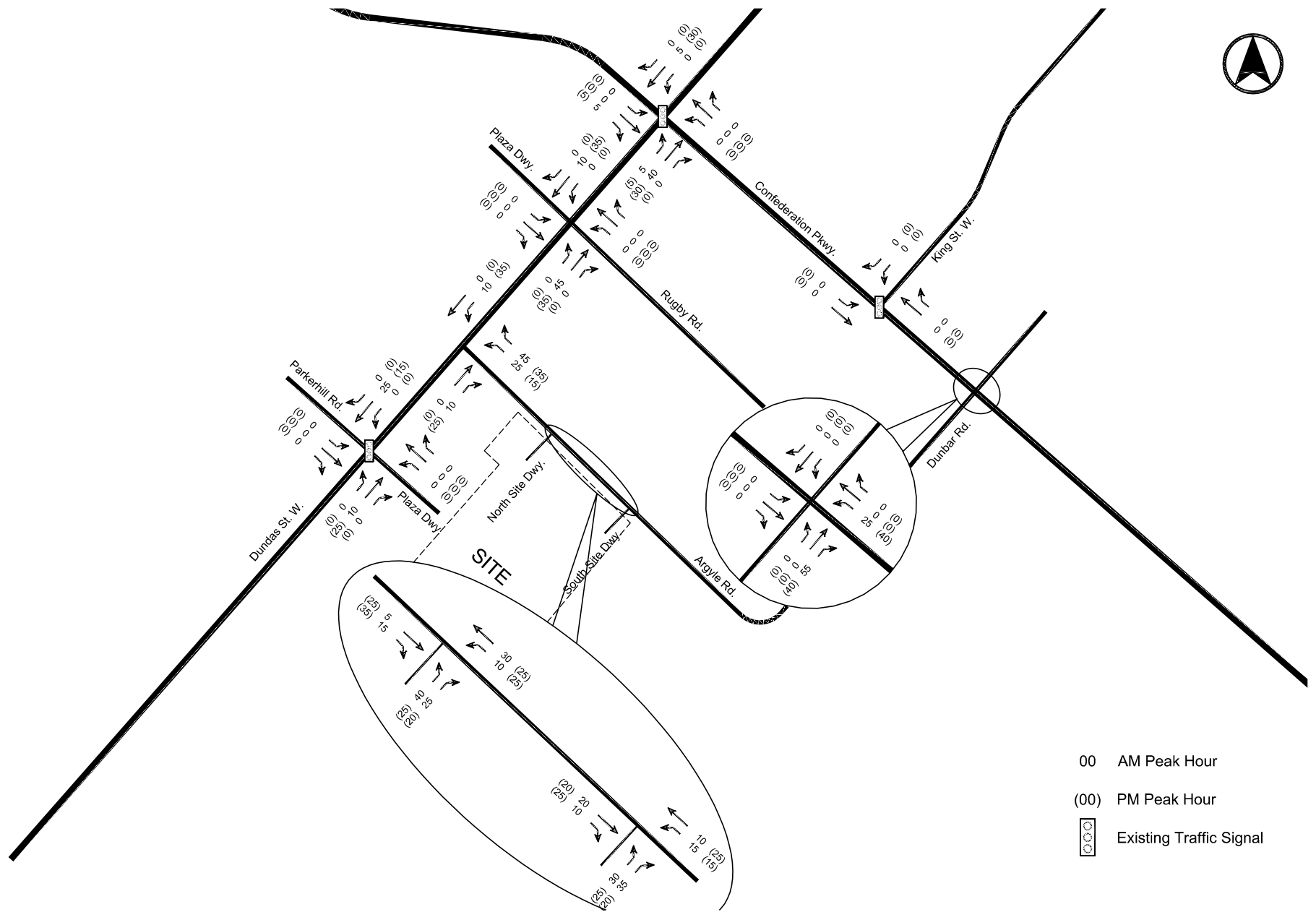
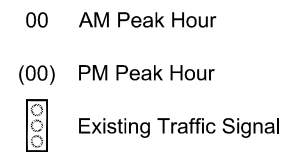


FIGURE 9 TOTAL SITE TRAFFIC VOLUMES



SEPTEMBER 2020

7.0 TRAFFIC OPERATIONS ANALYSIS

The following section provides a summary of traffic operations analysis undertaken for existing, future background and future total traffic conditions.

7.1 METHODOLOGY

Intersection capacity analysis has been completed using Synchro Version 9.2 and the Highway Capacity Manual (HCM) methodology.

For signalized intersections, the volume-to-capacity ratio (v/c) is an indicator of the capacity utilization for the key movements in the intersection. A v/c of 1.0 indicates that certain governing traffic movements through the intersection are operating at or near maximum capacity. The primary overall level of service (LOS) indicator is delay, both on individual movements and expressed as an average for all vehicles processed. Many busy urban intersections operate at LOS D to E, which reflect average (control) delays in the range of 35 to 80 seconds.

For unsignalized intersections, level of service (LOS) characterizes operational conditions for key movements in terms of delay within the traffic stream. LOS A represents a good level of service with short delays. LOS F represents a poor level of service with long delays. The volume to capacity ratio (v/c) is an indicator of the capacity utilization for key movements at the intersection and resultant residual capacity potential.

7.2 INPUT AND CALIBRATION PARAMETERS

Key parameters used in the analysis include:

- Existing lane configurations are assumed for all scenarios;
- Existing signal timings as provided by the City of Mississauga and confirmed by observations in the field (provided in **Appendix E**);
- Heavy vehicle percentages, peak hour factors and pedestrian and bicycle crossings as derived from existing traffic counts;
- Synchro defaults for all other parameters.

7.3 SIGNALIZED INTERSECTIONS OPERATIONS ANALYSIS

The following sections summarize the operations analysis for signalized intersections. Synchro reports are attached in **Appendix F**.

7.3.1 Dundas Street West/Parkerhill Road

The intersection of Dundas Street West/Parkerhill Road currently operates with cycle lengths of 160 seconds during both the weekday morning and afternoon peak hours. The results of the traffic analysis for this intersection are summarized in **Table 16**.

Under existing traffic conditions, the intersection operates at overall v/c of 0.47 and 0.52 during the weekday morning and afternoon peak hours, respectively.

Under future background traffic conditions, the intersection will continue to operate at overall v/c of 0.50 and 0.56 during the weekday morning and afternoon peak hours, respectively.

With the addition of site-generated traffic under future total traffic conditions, the intersection will continue to operate at overall v/c of 0.50 and 0.57 during the weekday morning and afternoon peak hours, respectively.

TABLE 16 DUNDAS STREET WEST/PARKERHILL ROAD

Movement	Existing Traffic Conditions		Future Background Traffic Conditions		Future Total Traffic Conditions	
	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.11 (0.19)	A (A)	0.12 (0.22)	A (A)	0.13 (0.22)	A (A)
EBTR	0.48 (0.35)	A (A)	0.52 (0.39)	A (A)	0.52 (0.39)	A (A)
WBL	0.02 (0.04)	A (A)	0.02 (0.04)	A (A)	0.02 (0.04)	A (A)
WBTR	0.28 (0.53)	A (B)	0.31 (0.58)	A (B)	0.32 (0.58)	A (B)
NBLTR	0.00 (0.24)	A (E)	0.00 (0.24)	A (E)	0.00 (0.24)	A (E)
SBL	0.30 (0.38)	E (E)	0.30 (0.38)	E (E)	0.30 (0.38)	E (E)
SBR	0.06 (0.20)	E (E)	0.06 (0.33)	E (E)	0.06 (0.34)	E (E)
Overall	0.47 (0.52)	A (B)	0.50 (0.56)	A (B)	0.50 (0.57)	A (B)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

The Dundas Street West/Parkerhill Road intersection is located approximately 80m west of the Dundas Street West/Argyle Road intersection (centreline to centreline measurement). The available storage distance in the westbound lane group is approximately 60m from the stop bar at Parkerhill Road to the west curb on Argyle Road. Existing queue lengths for the westbound lane group based on observations undertaken on October 22, 2019, and Synchro results are summarized in **Table 17**, for comparison.

Based on Synchro results, the queue length in the westbound left turn lane is accommodated in the available storage distance. These results are confirmed by existing observations. Based on Synchro results, the shared westbound through and right turn queue length extends beyond Argyle Road for part of the signal cycle. Observed queue lengths are shorter than Synchro results due to the upstream signal metering at Dundas Street West/Confederation Parkway, but queues may extend beyond Argyle Road during part of the signal cycle. Intermittent blockage of Argyle Road is mitigated by courtesy gaps.

Under future background conditions, queue lengths are projected to increase. The queue length in the westbound left turn lane will continue to be accommodated in the available storage distance. The shared westbound through and right turn queue length will continue to extend beyond Argyle Road during part of the signal cycle. Motorists making the northbound left turn from Argyle Road will continue to rely on courtesy gaps.

Under future total conditions, queue lengths are projected to increase by less than one (1) vehicle length as compared to future background conditions. The queue length in the westbound left turn lane will continue to be accommodated in the available storage distance. The shared westbound through and right turn queue length will continue to extend beyond Argyle Road during part of the signal cycle. Motorists making the northbound left turn from Argyle Road will continue to rely on courtesy gaps.

No mitigation measures are recommended.

TABLE 17 QUEUE ANALYSIS RESULTS

	Storage Length (m)	Existing Traffic Conditions Observed ²		Existing Traffic Conditions Synchro Results		Future Background Traffic Conditions Synchro Results		Future Total Traffic Conditions Synchro Results	
		50 th ile	95 th ile	50 th ile	95 th ile	50 th ile	95 th ile	50 th ile	95 th ile
WBL	60	0.9 (0.4)	7.5 (7.5)	0.6 (1.2)	1.2 (2.4)	0.5 (1.1)	0.0 (2.5)	0.5 (1.1)	1.4 (2.4)
WBTR	--	12.6 (33.2)	32.3 (74.6)	60.7 (165.4)	101.2 (250.8)	62.4 (190.8)	125.3 (267.2)	62.2 (194.0)	125.3 (269.3)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. Average vehicle length of 7.5m adopted.

7.3.2 Dundas Street West/Confederation Parkway

The intersection of Dundas Street West/Confederation Parkway currently operates with cycle lengths of 160 seconds during both the weekday morning and afternoon peak hours. The results of the traffic analysis for this intersection are summarized in **Table 18**.

Under existing traffic conditions, the intersection operates at overall v/c of 0.69 and 0.83 during the weekday morning and afternoon peak hours, respectively.

Under future background traffic conditions, the intersection will continue to operate at overall v/c of 0.74 and 0.91 during the weekday morning and afternoon peak hours, respectively.

With the addition of site-generated traffic under future total traffic conditions, the intersection will continue to operate at overall v/c of 0.75 and 0.92 during the weekday morning and afternoon peak hours, respectively.

No mitigation measures are recommended.

TABLE 18 DUNDAS STREET WEST/CONFEDERATION PARKWAY

Movement	Existing Traffic Conditions		Future Background Traffic Conditions		Future Total Traffic Conditions	
	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.36 (0.51)	C (C)	0.38 (0.60)	C (D)	0.39 (0.64)	C (D)
EBTR	0.77 (0.52)	D (C)	0.81 (0.59)	D (C)	0.82 (0.60)	D (C)
WBL	0.12 (0.11)	C (B)	0.14 (0.13)	C (C)	0.15 (0.13)	C (C)
WBTR	0.49 (0.78)	C (D)	0.52 (0.87)	C (D)	0.53 (0.88)	C (D)
NBL	0.53 (0.94)	C (E)	0.63 (1.00)	D (F)	0.63 (1.00)	D (F)
NBT	0.30 (0.44)	C (D)	0.35 (0.48)	C (D)	0.35 (0.48)	C (D)
NBR	0.02 (0.04)	A (C)	0.02 (0.04)	A (C)	0.02 (0.04)	A (C)
SBL	0.62 (0.77)	E (F)	0.68 (0.78)	E (F)	0.68 (0.78)	E (F)
SBT	0.57 (0.52)	D (E)	0.67 (0.56)	E (E)	0.67 (0.56)	E (E)
SBR	0.09 (0.32)	D (D)	0.09 (0.31)	D (D)	0.11 (0.33)	D (D)
Overall	0.69 (0.83)	D (D)	0.74 (0.91)	D (D)	0.75 (0.92)	D (D)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

7.3.3 Confederation Parkway/King Street West

The intersection of Confederation Parkway/King Street West currently operates with a cycle length of 160 seconds during both the weekday morning and afternoon peak hours. The results of the traffic analysis for this intersection are summarized in **Table 18**.

Under existing traffic conditions, the intersection operates at overall v/c of 0.38 and 0.45 during the weekday morning and afternoon peak hours, respectively.

Under future background traffic conditions, the intersection will continue to operate at overall v/c of 0.40 and 0.48 during the weekday morning and afternoon peak hours, respectively.

With the addition of site-generated traffic under future total traffic conditions, the intersection will continue to operate at overall v/c of 0.40 and 0.48 during the weekday morning and afternoon peak hours, respectively.

No mitigation measures are recommended.

TABLE 19 CONFEDERATION PARKWAY/KING STREET WEST

Movement	Existing Traffic Conditions		Future Background Traffic Conditions		Future Total Traffic Conditions	
	V/C	LOS	V/C	LOS	V/C	LOS
WBL	0.30 (0.70)	E (E)	0.30 (0.70)	E (E)	0.30 (0.70)	E (E)
WBR	0.12 (0.23)	E (E)	0.12 (0.23)	E (E)	0.12 (0.23)	E (E)
NBT	0.38 (0.42)	A (A)	0.41 (0.46)	A (A)	0.41 (0.46)	A (A)
NBR	0.07 (0.07)	A (A)	0.07 (0.07)	A (A)	0.07 (0.07)	A (A)
SBL	0.31 (0.32)	A (A)	0.32 (0.34)	A (A)	0.32 (0.34)	A (A)
SBT	0.35 (0.30)	A (A)	0.38 (0.33)	A (A)	0.38 (0.33)	A (A)
Overall	0.38 (0.45)	B (C)	0.40 (0.48)	B (C)	0.40 (0.48)	B (C)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).

7.4 UNSIGNALIZED INTERSECTIONS OPERATIONS ANALYSIS

This section summarizes operations analysis for unsignalized intersections. Synchro reports are attached in **Appendix F**. Key lane groups at the study area unsignalized intersections operate at LOS E or better under existing and future conditions.

TABLE 20 UNSIGNALIZED INTERSECTIONS

Lane Group	Existing Traffic Conditions			Future Background Traffic Conditions			Future Total Traffic Conditions		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Dundas Street West/Rugby Road									
EBL	0.03 (0.04)	9.0 (13.3)	A (B)	0.03 (0.04)	9.2 (14.5)	A (B)	0.03 (0.04)	9.2 (14.7)	A (B)
WBL	0.03 (0.04)	12.7 (11.0)	B (B)	0.04 (0.05)	13.6 (11.6)	B (B)	0.04 (0.05)	13.9 (11.8)	B (B)
NBL	0.14 (0.12)	31.7 (24.7)	D (C)	0.16 (0.14)	37.3 (28.4)	E (D)	0.17 (0.15)	38.9 (29.3)	E (D)
NBR	0.03 (0.07)	12.8 (12.7)	B (B)	0.03 (0.08)	13.1 (13.2)	B (B)	0.04 (0.08)	13.3 (13.3)	B (B)
SBLTR	0.02 (0.08)	9.1 (13.5)	A (B)	0.02 (0.09)	9.1 (14.7)	A (B)	0.02 (0.09)	9.1 (14.9)	A (B)
Confederation Parkway/Dunbar Road									
EBLTR	0.34 (0.26)	19.9 (21.8)	C (C)	0.40 (0.29)	23.0 (25.2)	C (D)	0.47 (0.35)	24.4 (25.5)	C (D)
WBLTR	0.01 (0.00)	12.9 (0.0)	B (A)	0.01 (0.00)	13.4 (0.0)	B (A)	0.01 (0.00)	13.4 (0.0)	B (A)
NBL	0.07 (0.08)	9.1 (9.1)	A (A)	0.08 (0.08)	9.3 (9.3)	A (A)	0.09 (0.10)	9.4 (9.5)	A (A)
Dundas Street West/Argyle Road									
WBL	0.05 (0.06)	13.1 (11.0)	B (B)	0.06 (0.08)	14.2 (11.8)	B (B)	0.08 (0.12)	14.4 (12.2)	B (B)
NBL	0.18 (0.17)	26.1 (20.5)	D (C)	0.26 (0.21)	31.8 (23.8)	D (C)	0.33 (0.24)	34.2 (24.7)	D (C)
NBR	0.09 (0.05)	13.1 (12.0)	B (B)	0.12 (0.06)	13.8 (12.6)	B (B)	0.17 (0.10)	14.4 (13.0)	B (B)
Argyle Road/North Site Driveway									
EBLR	0.03 (0.01)	9.2 (9.3)	A (A)	0.03 (0.01)	9.4 (9.5)	A (A)	0.09 (0.07)	9.8 (10.2)	A (B)
NBLT	0.00 (0.00)	0.0 (0.5)	A (A)	0.04 (0.00)	0.0 (0.5)	A (A)	0.01 (0.02)	0.8 (1.8)	A (A)

Argyle Road/Centre Site Driveway ²									
EBLR	0.05 (0.04)	9.3 (9.5)	A (A)	0.05 (0.04)	9.5 (9.7)	A (A)	Access does not exist.		
NBLT	0.01 (0.01)	1.4 (1.5)	A (A)	0.01 (0.01)	1.1 (1.3)	A (A)			
Argyle Road/South Site Driveway									
EBLR	0.01 (0.01)	8.8 (9.2)	A (A)	0.01 (0.01)	8.9 (9.4)	A (A)	0.10 (0.08)	9.8 (10.1)	A (B)
NBLT	0.00 (0.00)	0.6 (0.0)	A (A)	0.00 (0.00)	0.5 (0.0)	A (A)	0.01 (0.01)	1.3 (1.2)	A (A)

Notes:

1. XX (XX) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour).
2. The central site driveway will be closed with the development of the site.

At the Dundas Street West/Argyle Road intersection, the shared westbound through and right turn queue length extending from the signalized Dundas Street West/Parkerhill Road intersection will continue to extend beyond Argyle Road for part of the signal cycle. Motorists making the northbound left turn from Argyle Road will continue to rely on courtesy gaps (discussed further in **Section 7.3.1**). Upstream and downstream signals along Dundas Street West also provide gaps in the corridor traffic stream. Maintenance of northbound left turn v/c ratios of 0.33 and 0.24 in the weekday morning and weekday afternoon peak hours, respectively, confirms sufficient capacity will be available to serve projected traffic volumes.

At the Dundas Street West/Rugby Road and Confederation Parkway/Dunbar Road intersections, similar effects with upstream and downstream signals along the major corridors provide gaps in the traffic stream, maintaining sufficient capacity on the minor approaches.

No mitigation measures are recommended.

8.0 TRANSPORTATION DEMAND MANAGEMENT FRAMEWORK

This section summarizes Transportation Demand Management (TDM) strategies that can be implemented to help decrease automobile usage on-site. TDM plans are developed with a focus on reducing single-occupant vehicle trips and supporting alternative modes of transportation including walking, cycling and transit. A TDM plan will be developed at the Site Plan stage of the project. The following initiatives will be considered as part of the TDM plan:

Auto Travel Management

Intent: Reduced parking standards within the proposed development avoid an over-supply of parking which may incentivise higher auto use.

Implementation: Residential parking is proposed to be supplied at a reduced minimum rate of 1.00 spaces/unit, compared to the minimum standards of the City of Mississauga Zoning By-Law 0225-2007. The Zoning By-law overstates the parking needs of a residential apartment building in this location. The site is an excellent candidate for a reduced resident parking standard.

Transit Incentives

Intent: Support for and the promotion of the use of area transit services for both short and long-distance travel by residents and visitors will reduce the overall use of a vehicle and the need to own one.

Implementation: The site is conveniently located adjacent to existing bus stops at a walking distance of approximately 150-250m to the northwest at the intersection of Dundas Street/Argyle Road. The existing transit network includes major bus routes on Dundas Street, Confederation Parkway and Hurontario Street. The future transit network, which includes plans for the Hurontario Light Rail Transit (HuLRT), will provide an even greater level of transit accessibility in the short-term.

Bicycle Parking and Services

Intent: Provide cycling infrastructure that supports and promotes cycling as a convenient and viable travel alternative to the personal automobile.

Implementation: The site is located in close proximity to dedicated bike lanes which are provided along both sides of Confederation Parkway. In addition, bicycle lanes are proposed along Dundas Street West and King Street West. A total of 216 bicycle parking spaces are proposed for Building C, including 176 long-term spaces and 40 short-term spaces. The proposed number of bicycle parking spaces exceeds the requirements for Building C based on recommended rates. Due to the rental tenure of the buildings, the bicycle parking spaces may be allocated to residents of the existing buildings (Buildings A and B) or the proposed building (Building C), based on location and availability.

9.0 SUMMARY AND CONCLUSIONS

BA Group is retained by Rane Management to provide transportation consulting services related to the proposed development of lands municipally known as 2570-2590 Argyle Road in the City of Mississauga (referred to herein as “the site”).

Existing Site

The existing site consists of two 12-storey rental apartment buildings with a total of 253 residential units. The two buildings (referred to herein as “Building A” and “Building B”), are located on the northeast and southeast portions of the site, respectively.

Vehicular access to the site is provided via three unsignalized driveway connections to Argyle Road:

- The North Driveway is located approximately 100m south of Dundas Street West (centreline to centreline measurement).
- The Centre Driveway is located approximately 145m south of Dundas Street West.
- The South Driveway is located approximately 195m south of Dundas Street West.

Proposed Development

The proposed development includes one additional rental apartment building (referred to herein as “Building C”) to be constructed on the west portion of the site with 250 residential units. The two existing rental apartment buildings will be retained, for a total of 503 units on the site.

Vehicular access to the site is proposed to be maintained via the North and South Driveways. The Centre Driveway is proposed to be closed in order to provide enhanced pedestrian and cyclist connections through the site.

Key findings are summarized as follows:

Site Travel Context

1. The site is conveniently located adjacent to existing bus stops at a walking distance of approximately 150-250m to the northwest at the intersection of Dundas Street/Argyle Road. The existing transit network includes major bus routes on Dundas Street, Confederation Parkway and Hurontario Street. The future transit network, which includes plans for the Hurontario Light Rail Transit (HuLRT), will provide an even greater level of transit accessibility in the short-term.
2. A review of the survey data confirms that a high proportion of residents travel by non-auto means (in the order of 43% of the total site trips in each direction).

Vehicle Parking Considerations

3. Application of the By-law 0225-2007 results in the requirement of 750 parking spaces including 649 spaces for residents and 101 spaces for visitors.

Resident Parking

4. Parking space rental records were obtained from the building owner/operator. The rental records confirm that the existing buildings are typically fully occupied year-round (i.e. 100%) and reflect an overall parking demand ratio of 1.00 space/occupied unit.
5. In addition to the above, BA Group has also undertaken a series of resident parking demand surveys at the existing buildings located on the site. A conservative assumption of 95% building occupancy was adopted in the calculation of 'observed' parking demand, despite the rental records showing 100% occupancy. This assumption creates a buffer (i.e. more spaces than the minimum) between the observed parking demand rate and the target parking supply rate.
6. Peak resident parking demand recorded during the survey period was consistently 233 occupied spaces (0.97 spaces/occupied unit). Based on the observed parking demand at the existing buildings, the existing resident parking supply of 288 spaces exceeds the practical needs of the site.
7. Based on the foregoing, a resident parking supply rate of 1.00 spaces/unit is proposed for all buildings on the site.

Visitor Parking

8. A total of 34 visitor spaces are provided on the site. The effective visitor parking supply ratio is 0.13 spaces/unit.
9. Peak visitor parking demand recorded during the survey period varied between 32 occupied spaces (0.13 spaces/occupied unit) to 34 occupied spaces (0.14 spaces/occupied unit). Based on the observed parking demand at the existing buildings, the existing visitor parking supply of 34 spaces (0.14 spaces/occupied unit or 0.13 spaces/unit) meets the parking needs of the site.
10. With the proposed development of the site, a visitor parking supply of 0.20 spaces/unit is proposed for all buildings on the site, which meets the minimum supply requirement of Zoning By-law 0225-2007. The proposed supply exceeds the maximum observed visitor parking demand on the site.

Total Parking Supply

11. Application of the minimum proposed rates to the site yields the following requirements:

- Resident parking supply rate: 503 units x 1.00 spaces / unit = 503 spaces
- Visitor parking supply rate: 503 units x 0.20 spaces / unit = 101 spaces

In total, 604 parking spaces are required.

12. The development concept plan illustrates 604 parking spaces including 503 spaces for residents and 101 spaces for visitors.

Loading Considerations

13. Application of the prevailing City of Mississauga Zoning By-Law 0225-2007 to the proposed development results in a requirement for three (3) loading spaces with minimum dimensions of 3.5 metres by 9.0 metres.

14. Two (2) existing loading spaces will be maintained and two (2) additional loading spaces will be provided in an enclosed loading areas in Building C. The four (4) loading spaces will meet and exceed the City of Mississauga Zoning By-Law requirements.

Bicycle Parking Considerations

15. The existing buildings do not have any bicycle parking spaces. The recommended bicycle parking supply rates of the City of Mississauga Cycling Master Plan have been applied to Building C. Application of these rates would result in the requirement for a total of 195 spaces (of which 175 are long-term and 20 are short-term spaces).

16. A total of 216 bicycle parking spaces are proposed for Building C, including 176 long-term spaces and 40 short-term spaces. The proposed number of bicycle parking spaces exceeds the requirements for Building C based on recommended rates. Due to the rental tenure of the buildings, the bicycle parking spaces may be allocated to residents of the existing buildings (Buildings A and B) or the proposed building (Building C), based on location and availability.

Traffic Volume Forecasting

17. There are in the order of 90 and 95 existing two-way residential trips in the weekday morning and afternoon peak hours, respectively.

18. With the addition of Building C, the site is expected to generate in the order of 90 and 95 new two-way trips in the weekday morning and afternoon peak hours, respectively.

19. The site is expected to generate in the order of 180 and 190 total two-way trips in the weekday morning and afternoon peak hours, respectively.

Traffic Operations Analysis

20. With the addition of site-generated traffic under future total traffic conditions, the Dundas Street West/Parkerhill Road intersection will continue to operate at overall v/c of 0.50 and 0.57 during the weekday morning and afternoon peak hours, respectively. Queue lengths are projected to increase by less than one (1) vehicle length as compared to future background conditions. The westbound queue length in the left turn lane will be accommodated in the available storage distance; however, the shared westbound through and right turn queue length will continue to extend beyond Argyle Road for part of the signal cycle. Motorists making the northbound left turn from Argyle Road will continue to rely on courtesy gaps.
21. With the addition of site-generated traffic under future total traffic conditions, the Dundas Street West/Confederation Parkway intersection will continue to operate at overall v/c of 0.75 and 0.92 during the weekday morning and afternoon peak hours, respectively.
22. With the addition of site-generated traffic under future total traffic conditions, the Confederation Parkway/King Street West intersection will continue to operate at overall v/c of 0.40 and 0.48 during the weekday morning and afternoon peak hours, respectively.
23. Key lane groups at the study area unsignalized intersections operate at LOS E or better under existing and future conditions. At the Dundas Street West/Argyle Road intersection, the shared westbound through and right turn queue length extending from the signalized Dundas Street West/Parkerhill Road intersection will continue to extend beyond Argyle Road for part of the signal cycle. Motorists making the northbound left turn from Argyle Road will continue to rely on courtesy gaps. Upstream and downstream signals along Dundas Street West also provide gaps in the corridor traffic stream. Maintenance of northbound left turn v/c ratios of 0.33 and 0.24 in the weekday morning and weekday afternoon peak hours, respectively, confirms sufficient capacity will be available to serve projected traffic volumes. No mitigation measures are recommended.

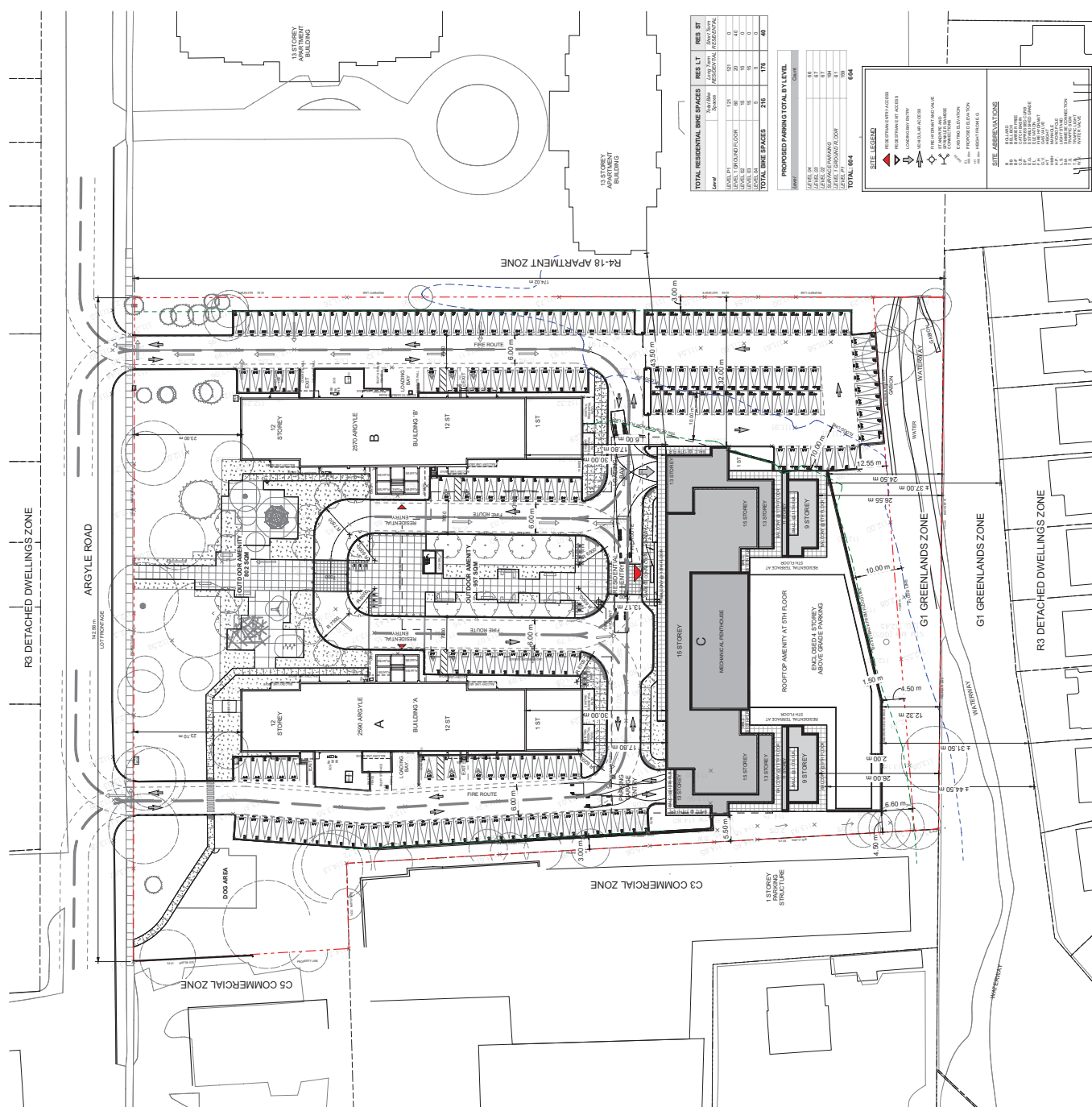
Transportation Demand Management Framework

24. A TDM plan will be developed at the Site Plan stage of the project. The following initiatives will be considered as part of the TDM plan:
- *Auto Travel Management:* Reduced parking standards within the proposed development avoid an over-supply of parking which may incentivise higher auto use. As aforementioned, the Zoning By-law overstates the parking needs of a residential apartment building in this location. The site is an excellent candidate for a reduced resident parking standard.

- *Transit Incentives:* Support for and the promotion of the use of area transit services for both short and long-distance travel by residents and visitors will reduce the overall use of a vehicle and the need to own one. The site is conveniently located adjacent to existing bus stops at a walking distance of approximately 150-250m to the northwest at the intersection of Dundas Street/Argyle Road. The existing transit network includes major bus routes on Dundas Street, Confederation Parkway and Hurontario Street. The future transit network, which includes plans for the Hurontario Light Rail Transit (HuLRT), will provide an even greater level of transit accessibility in the short-term.
- *Bicycle Parking and Services:* Provide cycling infrastructure that supports and promotes cycling as a convenient and viable travel alternative to the personal automobile. The site is located in close proximity to dedicated bike lanes which are provided along both sides of Confederation Parkway. In addition, bicycle lanes are proposed along Dundas Street West and King Street West.

Based on the foregoing, the proposed development can be appropriately accommodated on the area road network.

APPENDIX A: Reduced-Scale Architectural Plans

[illegible]

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LEGEND, SHOWING VARIOUS TRAFFIC SIGNS

Sign 1: AHEAD OF TRUCKS
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 2: AHEAD OF BUSES
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 3: AHEAD OF MOTORCYCLES
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 4: AHEAD OF BICYCLES
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 5: AHEAD OF PEDESTRIANS
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 6: AHEAD OF HORSES
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 7: AHEAD OF CATTLE
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 8: AHEAD OF SHEEP
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 9: AHEAD OF GOATS
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

Sign 10: AHEAD OF PIGS
 Dimensions: 10' x 10' (Area: 100 sq. ft.)

[illegible]

	REGISTRATION: Survey Notes, The Project Title Block, and the Survey Map Entered On: 04/20/2013 10:56 AM Registered On: 04/20/2013 10:56 AM Registered User:	
	PROJECT NO. 1200205	
PROJECT NAME: ARCYLE 2870 - 2900 A.A. RD. CITY OF MISSISSAUGA, ON PART OF BLOCK A REGISTERED PLANE - 23		
DRAWN BY:	CHECKED BY:	APPROVED BY:
PROJECT MAP:	PROJECT TITLE:	SHEET NUMBER:
UNDERGROUND GARAGE PLAN - LEVEL P1		1





APPENDIX B: Parking Demand Survey Data

Visitor Parking Surveys

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Friday October 4, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
16:00	14	15
17:00	13	16
18:00	12	16
19:00	11	15
20:00	14	15
21:00	13	14
22:00	17	15

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
16:00	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	1	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	1	0	3	0	0	1	0	5
20:00	0	0	0	0	0	3	0	0	1	0	4
21:00	0	0	0	1	0	6	0	0	0	0	7
22:00	0	0	0	1	0	7	0	0	0	0	8

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Saturday October 5, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
14:00	15	10
15:00	15	14
16:00	13	16
17:00	15	14
18:00	16	11
19:00	17	15
20:00	14	15
21:00	16	15
22:00	13	15

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
14:00	0	0	0	1	0	6	0	0	1	0	8
15:00	0	0	0	3	0	9	0	1	1	0	14
16:00	0	0	1	2	0	10	0	0	1	0	14
17:00	0	0	0	1	0	7	0	0	1	0	9
18:00	0	0	0	1	0	8	0	0	0	0	9
19:00	0	0	0	2	0	8	0	0	0	0	10
20:00	0	1	0	5	0	9	0	0	0	0	15
21:00	0	1	0	5	0	14	0	0	1	0	21
22:00	0	1	0	4	0	12	0	0	0	0	17

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Sunday October 6, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
14:00	15	8
15:00	16	14
16:00	16	15
17:00	15	14
18:00	17	16
19:00	17	15
20:00	17	17
21:00	17	16
22:00	17	16

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
14:00	0	0	0	2	0	8	0	0	1	0	11
15:00	0	0	0	2	0	6	0	0	1	0	9
16:00	0	0	0	4	0	6	0	0	1	0	11
17:00	0	0	0	4	0	8	0	0	1	0	13
18:00	0	0	0	4	0	9	0	0	1	0	14
19:00	0	0	0	3	0	10	0	1	1	0	15
20:00	0	0	0	5	0	6	0	0	0	0	11
21:00	0	0	0	3	0	4	0	0	1	0	8
22:00	0	0	0	4	0	4	0	0	1	0	9

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Friday October 18, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
16:00	14	16
17:00	16	16
18:00	13	16
19:00	17	11
20:00	16	14
21:00	16	16
22:00	17	16

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
16:00	0	0	0	0	0	0	0	0	0	0	0
17:00	0	1	0	0	0	2	0	0	1	0	4
18:00	0	0	0	1	0	1	0	0	1	0	3
19:00	0	0	0	3	0	1	0	0	2	0	6
20:00	0	0	0	4	0	2	0	0	1	0	7
21:00	0	0	0	2	0	6	0	0	0	0	8
22:00	0	0	0	0	0	9	0	0	3	0	12

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Saturday October 19, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
14:00	17	12
15:00	16	14
16:00	15	16
17:00	17	17
18:00	17	17
19:00	14	16
20:00	16	16
21:00	16	16
22:00	16	17

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
14:00	0	1	0	0	0	7	0	0	1	0	9
15:00	0	0	0	2	0	10	0	0	2	1	15
16:00	0	0	0	3	0	15	0	0	1	1	20
17:00	0	0	0	4	0	16	0	0	0	1	21
18:00	0	1	0	7	0	17	0	0	1	2	28
19:00	0	1	0	8	0	14	0	0	1	2	26
20:00	0	1	0	10	0	18	0	0	2	2	33
21:00	0	1	0	8	0	19	0	0	2	1	31
22:00	0	1	0	5	0	13	0	0	2	1	22

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Sunday October 20, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
14:00	17	16
15:00	17	10
16:00	15	16
17:00	16	17
18:00	15	16
19:00	17	17
20:00	16	16
21:00	17	17
22:00	14	15

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
14:00	0	0	0	0	0	8	0	0	0	0	8
15:00	0	0	0	0	1	11	0	0	0	0	12
16:00	0	0	0	0	0	10	0	0	0	0	10
17:00	0	0	0	0	0	9	0	0	0	0	9
18:00	0	0	0	2	0	10	0	0	0	0	12
19:00	0	0	0	3	0	11	0	0	0	0	14
20:00	0	0	0	4	0	13	0	0	0	0	17
21:00	0	0	0	5	0	6	0	0	0	0	11
22:00	0	0	0	4	0	4	0	0	0	0	8

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Friday October 25, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
16:00	14	14
17:00	14	17
18:00	16	15
19:00	16	16
20:00	15	17
21:00	17	16
22:00	16	13

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
16:00	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	1	0	1
18:00	0	0	0	0	0	1	0	0	1	0	2
19:00	0	0	0	0	0	2	0	0	1	0	3
20:00	0	0	0	3	0	2	0	0	1	0	6
21:00	0	0	0	5	0	4	0	0	1	0	10
22:00	0	0	0	5	0	4	0	0	0	0	9

Project: 2570 - 2590 Argyle Road
Project No: 8015-02
Location: 2570 - 2590 Argyle Road
Date: Saturday October 26, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
14:00	16	12
15:00	14	14
16:00	15	14
17:00	13	15
18:00	12	16
19:00	17	16
20:00	17	16
21:00	17	17
22:00	17	17

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
14:00	0	0	0	3	0	5	0	0	1	0	9
15:00	0	0	0	5	0	4	0	0	0	0	9
16:00	0	1	0	5	0	2	0	0	0	0	8
17:00	0	0	0	3	0	4	0	0	1	0	8
18:00	0	1	0	4	0	5	1	0	1	0	12
19:00	0	1	0	3	0	6	0	0	1	0	11
20:00	0	1	0	7	0	3	0	0	1	0	12
21:00	0	1	0	7	0	2	0	0	1	0	11
22:00	0	0	0	10	0	4	0	0	1	0	15

Project: 2570 - 2590 Argyle Road
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Road
 Date: Sunday October 27, 2019

Visitor Parking Summary

Area	2570 Argyle	2590 Argyle
Supply	17	17
14:00	13	14
15:00	16	12
16:00	16	13
17:00	15	17
18:00	16	14
19:00	17	15
20:00	17	15
21:00	17	13
22:00	15	13

On Street Parking

Area	1 East	1 West	2 East	2 West	3 East	3 West	4 North	4 South	5 North	5 South	Total
Supply	-	1	-	12	-	15	6	10	4	6	54
14:00	0	0	0	2	0	5	1	0	0	0	8
15:00	0	0	0	3	0	9	0	0	0	0	12
16:00	0	0	0	2	0	8	0	0	0	0	10
17:00	0	0	0	4	0	8	0	0	0	0	12
18:00	0	0	0	4	0	5	0	0	2	0	11
19:00	0	0	0	4	0	8	0	0	0	0	12
20:00	0	0	0	7	0	6	0	0	0	0	13
21:00	0	0	0	5	0	5	0	0	0	0	10
22:00	0	0	0	5	0	4	0	0	0	0	9

Resident Parking Surveys

Project: 2570 - 2590 Argyle Rd
Project No: 8015-02
Location: 2570 - 2590 Argyle Rd
Date: Tuesday October 22, 2019

3AM Parking Summary

Building	2570 Argyle Rd			2590 Argyle Rd		
Area	Resident	Visitor	Total	Resident	Visitor	Total
Supply	150	17	167	138	17	155
3AM	111	16	127	122	14	136

Project: 2570 - 2590 Argyle Rd
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Rd
 Date: Tuesday October 22, 2019

3AM Parking Study
 2570 Argyle Rd

Surface Resident						Surface Visitor	
Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied
1	1	51	1	101	1	18	1
2	1	52	1	102	1	19	1
3		53	1	103	1	20	1
4	1	54	1	104	1	21	1
5	1	55		105	1	22	1
6	1	56	1	106	1	23	1
7	1	57	1	107	1	24	1
8		58	1	108	1	25	1
9		59	1	109	1	26	1
10	1	60	1	110		27	1
11	1	61	1	111		28	1
12	1	62	1	112		29	1
13	1	63		113		30	1
14	1	64	1	114	1	31	1
15	1	65	1	115	1	32	1
16	1	66		116	1	33	
17	1	67	1	117	1	34	1
18	1	68		118			
19	1	69	1	119			
20	1	70		120	1		
21	1	71		121	1		
22	1	72	1	122	1		
23		73	1	123	1		
24	1	74	1	124	1		
25	1	75	1	125	1		
26	1	76	1	126	1		
27	1	77	1	127			
28		78		128			
29	1	79	1	129	1		
30	1	80	1	130	1		
31	1	81	1	131	1		
32		82		132	1		
33	1	83	1	133			
34	1	84	1	134			
35	1	85	1	135	1		
36	1	86	1	136	1		
37	1	87	1	137	1		
38	1	88	1	138	1		
39	1	89	1	139	1		
40		90	1	140			
41	1	91	1	141	1		
42		92	1	142			
43	1	93		143			
44	1	94	1	144			
45	1	95	1	145			
46	1	96	1	146			
47	1	97		147			
48	1	98	1	148			
49	1	99	1	149			
50		100	1	150			
Total					111		16

Project: 2570 - 2590 Argyle Rd
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Rd
 Date: Tuesday October 22, 2019

3AM Parking Study
 2590 Argyle Rd

Surface Resident						Surface Visitor	
Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied
1	1	51	1	105	1	1	
2	1	52	1	106	1	2	1
3	1	53	1	107	1	3	1
4	1	54	1	108	1	4	1
5		55	1	109		5	1
6	1	56	1	110	1	6	1
7	1	57	1	111	1	7	1
8	1	58	1	112	1	8	1
9	1	59	1	113	1	9	1
10	1	60	1	114	1	10	
11	1	61		115		11	1
12	1	62	1	116	1	12	
13		63	1	117	1	13	1
14	1	64	1	136		14	1
15	1	65	1	137	1	15	1
16	1	66	1	138	1	16	1
17	1	67	1	139		17	1
18	1	68	1	140	1		
19	1	69	1	141	1		
20	1	70	1	142	1		
21	1	71	1	143	1		
22	1	74	1	144	1		
23	1	75		145	1		
24	1	76	1	146	1		
25	1	77		147	1		
26	1	78	1	148			
27	1	79	1	149	1		
28	1	80	1	150	1		
29	1	81	1	151	1		
30	1	82	1	152	1		
31	1	83	1	153	1		
32	1	84	1	A			
33	1	85	1	AA	1		
34		86	1	B	1		
35	1	87	1	C	1		
36	1	88	1	D	1		
37	1	89	1	F	1		
38	1	90	1	33A	1		
39	1	91					
40	1	92					
41	1	93	1				
42	1	94	1				
43	1	95	1				
44	1	96	1				
45	1	97	1				
46		98	1				
47	1	99	1				
48	1	100					
49	1	101	1				
50	1	104	1				
					122		14

Project: 2570 - 2590 Argyle Rd
Project No: 8015-02
Location: 2570 - 2590 Argyle Rd
Date: Wednesday October 23, 2019

3AM Parking Summary

Building	2570 Argyle Rd			2590 Argyle Rd		
Area	Resident	Visitor	Total	Resident	Visitor	Total
Supply	150	17	167	138	17	155
3AM	115	11	126	118	13	131

Project: 2570 - 2590 Argyle Rd
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Rd
 Date: Wednesday October 23, 2019

3AM Parking Study
 2570 Argyle Rd

Surface Resident						Surface Visitor	
Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied
1	1	51	1	101	1	18	1
2	1	52	1	102	1	19	1
3		53	1	103	1	20	1
4	1	54	1	104	1	21	
5	1	55		105	1	22	1
6	1	56	1	106	1	23	
7		57	1	107	1	24	1
8	1	58	1	108	1	25	1
9	1	59	1	109	1	26	1
10	1	60	1	110		27	1
11	1	61	1	111		28	1
12	1	62	1	112		29	
13	1	63	1	113		30	1
14	1	64	1	114	1	31	
15	1	65	1	115	1	32	
16	1	66		116	1	33	
17	1	67	1	117	1	34	1
18	1	68		118			
19	1	69	1	119			
20	1	70		120	1		
21	1	71		121	1		
22	1	72	1	122	1		
23		73	1	123	1		
24	1	74		124	1		
25	1	75	1	125	1		
26	1	76	1	126	1		
27	1	77	1	127			
28		78	1	128	1		
29	1	79	1	129			
30	1	80		130	1		
31	1	81	1	131	1		
32		82	1	132	1		
33	1	83	1	133	1		
34		84	1	134			
35	1	85	1	135	1		
36	1	86	1	136	1		
37	1	87	1	137	1		
38	1	88	1	138			
39	1	89	1	139	1		
40	1	90	1	140	1		
41	1	91	1	141			
42		92	1	142			
43	1	93		143			
44	1	94	1	144			
45	1	95	1	145			
46	1	96	1	146			
47	1	97		147	1		
48	1	98	1	148			
49	1	99	1	149			
50	1	100	1	150			
Total					115		11

Project: 2570 - 2590 Argyle Rd
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Rd
 Date: Wednesday October 23, 2019

3AM Parking Study
 2590 Argyle Rd

Surface Resident						Surface Visitor	
Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied
1	1	51	1	105	1	1	
2	1	52	1	106	1	2	1
3	1	53	1	107		3	1
4	1	54	1	108	1	4	1
5		55	1	109		5	1
6	1	56		110	1	6	1
7	1	57	1	111	1	7	1
8	1	58	1	112	1	8	1
9	1	59	1	113	1	9	1
10	1	60	1	114	1	10	1
11	1	61		115		11	1
12	1	62	1	116	1	12	1
13		63	1	117	1	13	1
14	1	64	1	136		14	
15	1	65	1	137	1	15	
16	1	66	1	138	1	16	
17	1	67		139		17	1
18	1	68	1	140	1		
19	1	69	1	141	1		
20	1	70	1	142	1		
21	1	71	1	143	1		
22		74	1	144	1		
23	1	75		145	1		
24	1	76	1	146	1		
25	1	77	1	147	1		
26	1	78	1	148			
27	1	79	1	149	1		
28	1	80	1	150	1		
29	1	81	1	151	1		
30	1	82	1	152	1		
31		83	1	153	1		
32	1	84	1	A			
33		85	1	AA	1		
34	1	86	1	B	1		
35	1	87	1	C	1		
36	1	88	1	D	1		
37	1	89	1	F	1		
38	1	90	1	33A	1		
39	1	91					
40	1	92					
41	1	93	1				
42	1	94	1				
43	1	95	1				
44	1	96	1				
45	1	97	1				
46		98	1				
47	1	99	1				
48	1	100					
49	1	101	1				
50	1	104	1				
					118		13

Project: 2570 - 2590 Argyle Rd
Project No: 8015-02
Location: 2570 - 2590 Argyle Rd
Date: Thursday October 24, 2019

3AM Parking Summary

Building	2570 Argyle Rd			2590 Argyle Rd		
Area	Resident	Visitor	Total	Resident	Visitor	Total
Supply	150	17	167	138	17	155
3AM	116	12	128	117	16	133

Project: 2570 - 2590 Argyle Rd
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Rd
 Date: Thursday October 24, 2019

3AM Parking Study
 2570 Argyle Rd

Surface Resident						Surface Visitor	
Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied
1	1	51	1	101	1	18	
2	1	52		102	1	19	1
3		53	1	103	1	20	1
4	1	54	1	104	1	21	1
5	1	55		105	1	22	
6	1	56	1	106	1	23	1
7	1	57	1	107	1	24	
8	1	58	1	108	1	25	1
9		59	1	109	1	26	1
10	1	60	1	110		27	1
11	1	61	1	111		28	1
12	1	62	1	112		29	
13	1	63		113		30	1
14	1	64	1	114	1	31	
15	1	65	1	115	1	32	1
16	1	66	1	116		33	1
17	1	67	1	117	1	34	1
18	1	68		118			
19	1	69	1	119			
20	1	70		120	1		
21	1	71		121	1		
22	1	72	1	122	1		
23		73	1	123	1		
24	1	74		124	1		
25	1	75	1	125	1		
26	1	76	1	126	1		
27	1	77	1	127			
28		78	1	128	1		
29	1	79	1	129			
30	1	80	1	130	1		
31	1	81	1	131	1		
32		82	1	132	1		
33	1	83	1	133	1		
34	1	84		134			
35	1	85	1	135	1		
36	1	86	1	136	1		
37	1	87	1	137	1		
38	1	88	1	138	1		
39	1	89	1	139	1		
40	1	90	1	140	1		
41	1	91	1	141	1		
42	1	92	1	142			
43	1	93		143			
44	1	94	1	144			
45	1	95	1	145			
46	1	96	1	146			
47	1	97		147			
48	1	98	1	148			
49	1	99	1	149			
50	1	100	1	150			
Total					116		12

Project: 2570 - 2590 Argyle Rd
 Project No: 8015-02
 Location: 2570 - 2590 Argyle Rd
 Date: Thursday October 24, 2019

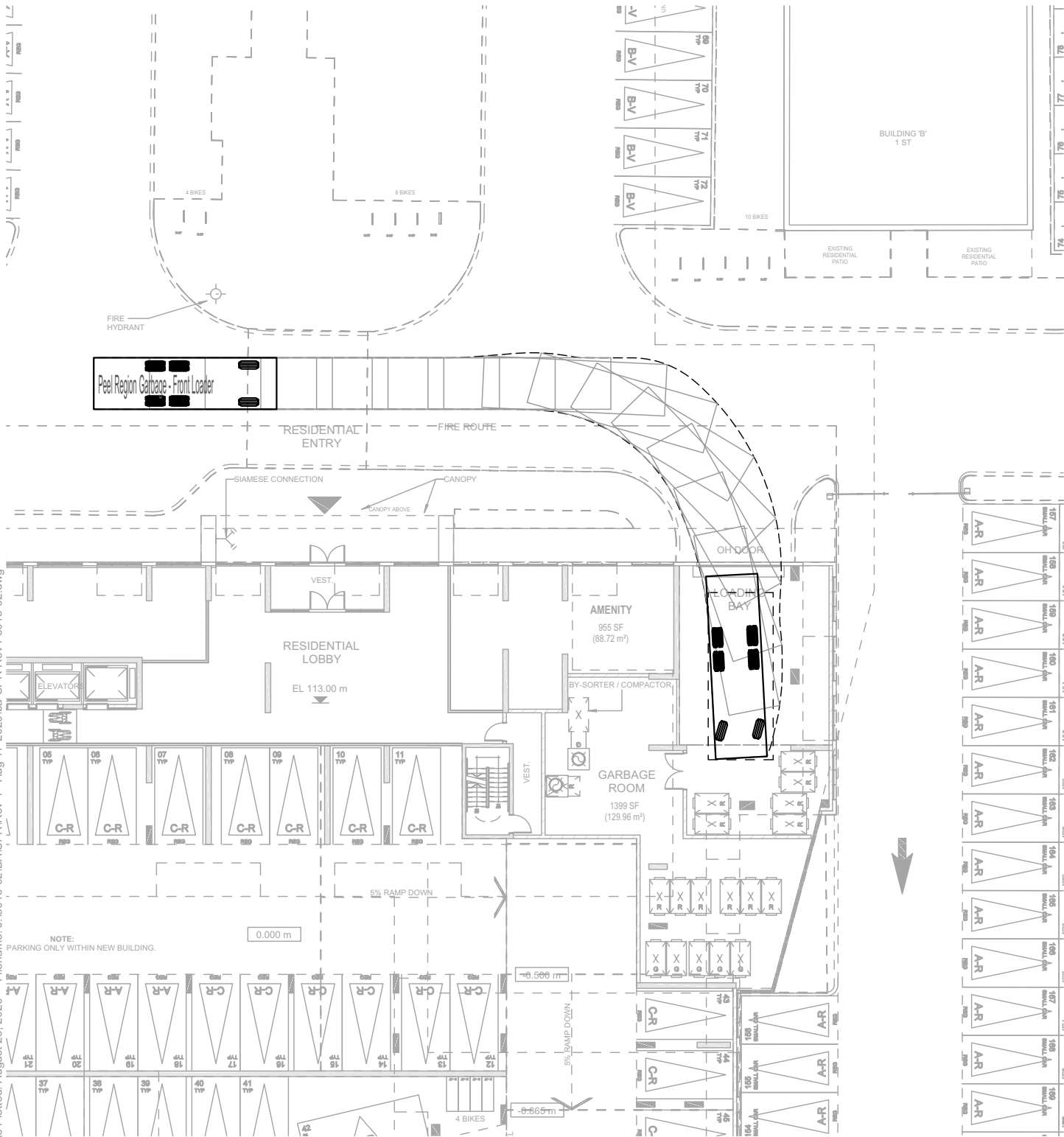
3AM Parking Study
 2590 Argyle Rd

Surface Resident						Surface Visitor	
Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied	Stall No.	Occupied
1	1	51	1	105	1	1	1
2	1	52	1	106	1	2	1
3	1	53	1	107	1	3	1
4	1	54	1	108	1	4	1
5		55	1	109		5	
6	1	56		110	1	6	1
7	1	57	1	111	1	7	1
8	1	58	1	112	1	8	1
9	1	59	1	113	1	9	1
10	1	60	1	114	1	10	1
11	1	61		115		11	1
12	1	62		116	1	12	1
13		63	1	117	1	13	1
14	1	64	1	136		14	1
15	1	65	1	137	1	15	1
16	1	66	1	138	1	16	1
17	1	67	1	139		17	1
18	1	68	1	140	1		
19	1	69	1	141	1		
20	1	70	1	142	1		
21	1	71	1	143	1		
22		74	1	144	1		
23	1	75		145	1		
24	1	76	1	146	1		
25	1	77		147	1		
26	1	78	1	148			
27	1	79	1	149	1		
28	1	80	1	150	1		
29	1	81	1	151	1		
30	1	82	1	152	1		
31		83	1	153	1		
32	1	84	1	A			
33	1	85	1	AA	1		
34		86		B	1		
35	1	87	1	C	1		
36	1	88	1	D	1		
37	1	89	1	F	1		
38	1	90	1	33A	1		
39	1	91					
40	1	92					
41	1	93	1				
42	1	94	1				
43	1	95	1				
44	1	96	1				
45	1	97	1				
46		98	1				
47	1	99	1				
48	1	100					
49	1	101	1				
50	1	104	1				
					117		16

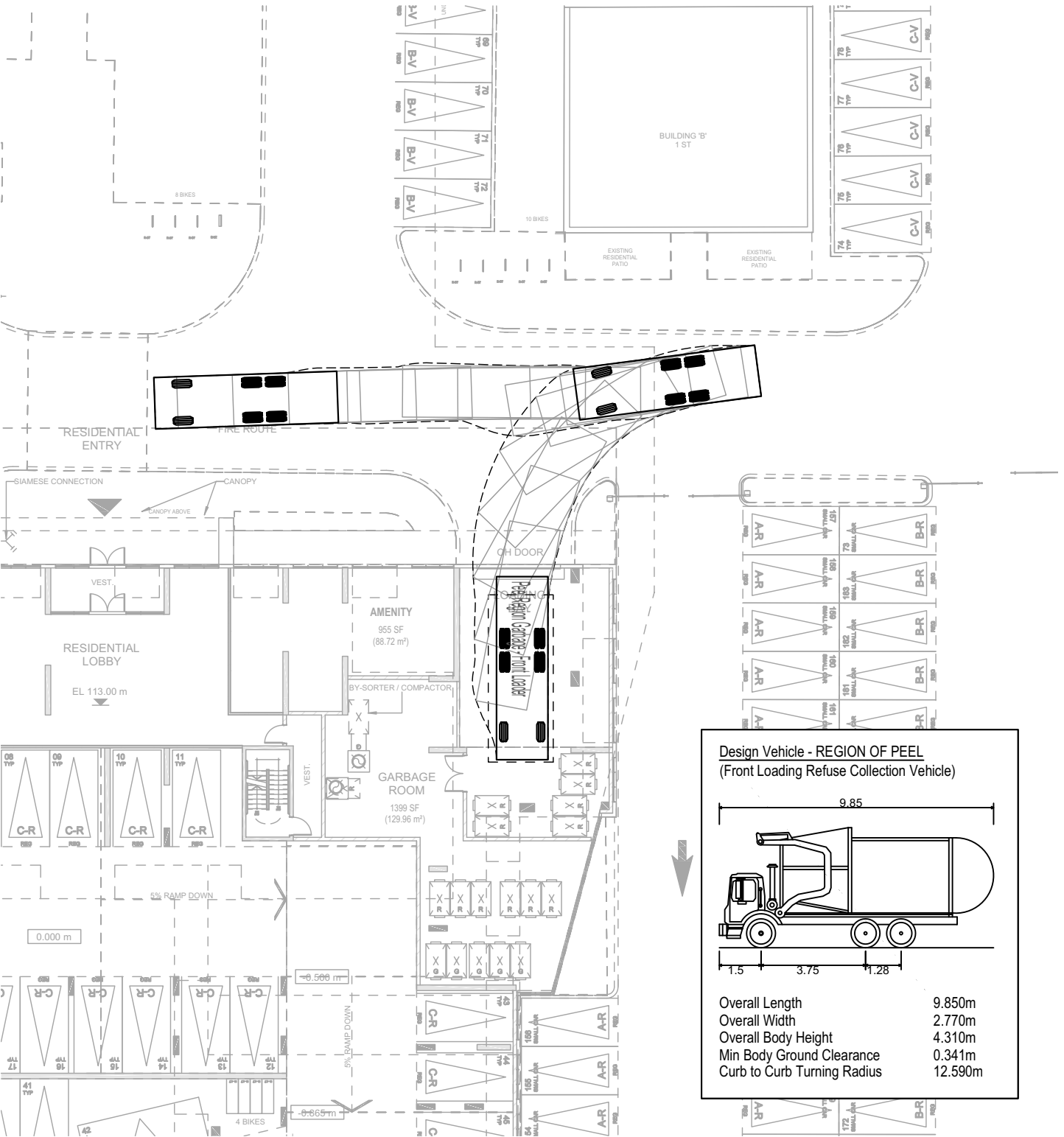
APPENDIX C: Vehicle Manoeuvring Diagrams



INBOUND



OUTBOUND



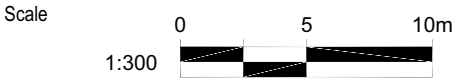
Design Vehicle - REGION OF PEEL
(Front Loading Refuse Collection Vehicle)

Overall Length 9.850m
Overall Width 2.770m
Overall Body Height 4.310m
Min Body Ground Clearance 0.341m
Curb to Curb Turning Radius 12.590m



2570-2590 Argyle Road
Region of Peel Refuse Truck Design Vehicle
Inbound / Outbound Manoeuvres

Project: 2570-2590 Argyle Rd
Project No. 8015-02
Date: February 5, 2020
Revised: August 17, 2020



Drawing No.

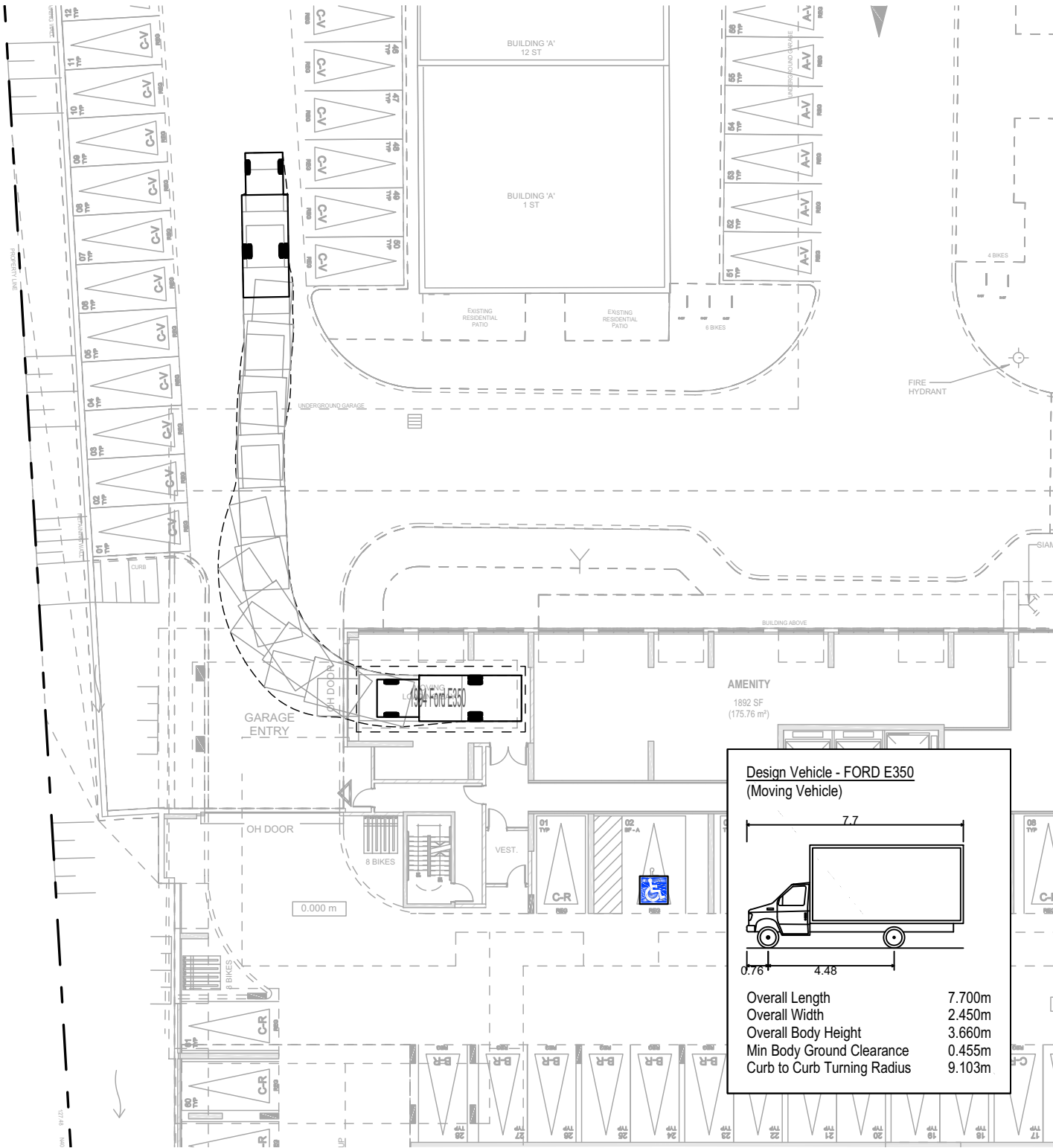
VMD-1

Date Plotted: August 25, 2020 Filename: J:\8015-02\BA\SPR\Rev 4 - Aug 17-2020\ba-SPR\Rev4-8015-02.dwg

INBOUND



OUTBOUND



Design Vehicle - FORD E350
(Moving Vehicle)

Overall Length	7.700m
Overall Width	2.450m
Overall Body Height	3.660m
Min Body Ground Clearance	0.455m
Curb to Curb Turning Radius	9.103m



2570-2590 Argyle Road
Moving/Delivery Design Vehicle
Inbound / Outbound Manoeuvres

Project: 2570-2590 Argyle Rd
Project No. 8015-02
Date: February 5, 2020
Revised: August 17, 2020

Scale
0 5 10m
1:300

Drawing No.

VMD-2

APPENDIX D: Turning Movement Count Data





Turning Movement Count (8 . ARGYLE RD & MIDDLE SITE DRIVEWAY)

Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:30:00	0	4	0	0	0	4	0	0	0	0	1	0	0	12	1	0	0	13	4	0	5	0	1	9	26	
07:45:00	2	9	0	0	2	11	0	0	0	0	0	0	0	13	0	0	0	13	1	0	6	0	4	7	31	
08:00:00	0	8	0	0	1	8	0	0	0	0	1	0	0	15	1	0	0	16	3	0	5	0	4	8	32	
08:15:00	2	12	0	0	0	14	0	0	0	0	0	0	0	11	2	0	0	13	1	0	3	0	0	4	31	120
08:30:00	1	8	0	0	0	9	0	0	1	0	1	1	0	6	2	0	0	8	4	0	5	0	4	9	27	121
08:45:00	4	10	0	0	0	14	0	0	0	0	0	0	1	12	3	0	0	16	6	0	7	0	7	13	43	133
09:00:00	0	7	1	0	0	8	0	0	1	0	0	1	0	12	4	0	0	16	4	0	3	0	4	7	32	133
09:15:00	2	6	0	0	0	8	0	0	0	0	0	0	0	6	1	0	0	7	1	0	7	0	2	8	23	125
BREAK																										
16:00:00	4	10	0	0	3	14	0	0	0	0	1	0	0	12	3	0	0	15	1	0	2	0	5	3	32	
16:15:00	7	11	0	0	0	18	0	0	0	0	0	0	0	14	1	0	0	15	4	0	5	0	7	9	42	
16:30:00	7	8	0	1	0	16	0	0	0	0	1	0	0	13	2	0	0	15	2	0	3	0	3	5	36	
16:45:00	2	10	0	0	0	12	0	0	0	0	0	0	0	21	6	0	2	27	3	0	6	0	5	9	48	158
17:00:00	4	6	0	0	0	10	0	0	0	0	0	0	0	13	5	0	1	18	3	0	1	0	5	4	32	158
17:15:00	5	17	0	0	2	22	0	0	0	0	0	0	0	10	1	0	2	11	2	0	3	0	7	5	38	154
17:30:00	5	9	0	1	0	15	0	0	0	0	0	0	0	20	3	0	2	23	0	0	5	0	5	5	43	161
17:45:00	5	14	0	1	0	20	0	0	0	0	0	0	0	11	6	0	0	17	4	0	1	0	4	5	42	155
Grand Total	50	149	1	3	8	203	0	0	2	0	5	2	1	201	41	0	7	243	43	0	67	0	67	110	558	-
Approach%	24.6%	73.4%	0.5%	1.5%		-	0%	0%	100%	0%		-	0.4%	82.7%	16.9%	0%		-	39.1%	0%	60.9%	0%		-	-	-
Totals %	9%	26.7%	0.2%	0.5%		36.4%	0%	0%	0.4%	0%		0.4%	0.2%	36%	7.3%	0%		43.5%	7.7%	0%	12%	0%		19.7%	-	-
Heavy	0	4	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-	-
Heavy %	0%	2.7%	0%	0%		-	0%	0%	0%	0%		-	0%	0.5%	0%	0%		-	0%	0%	0%	0%		-	-	-
Bicycles	0	1	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-	-
Bicycle %	0%	0.7%	0%	0%		-	0%	0%	0%	0%		-	0%	0.5%	0%	0%		-	0%	0%	0%	0%		-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Light Rain (13.65 °C)

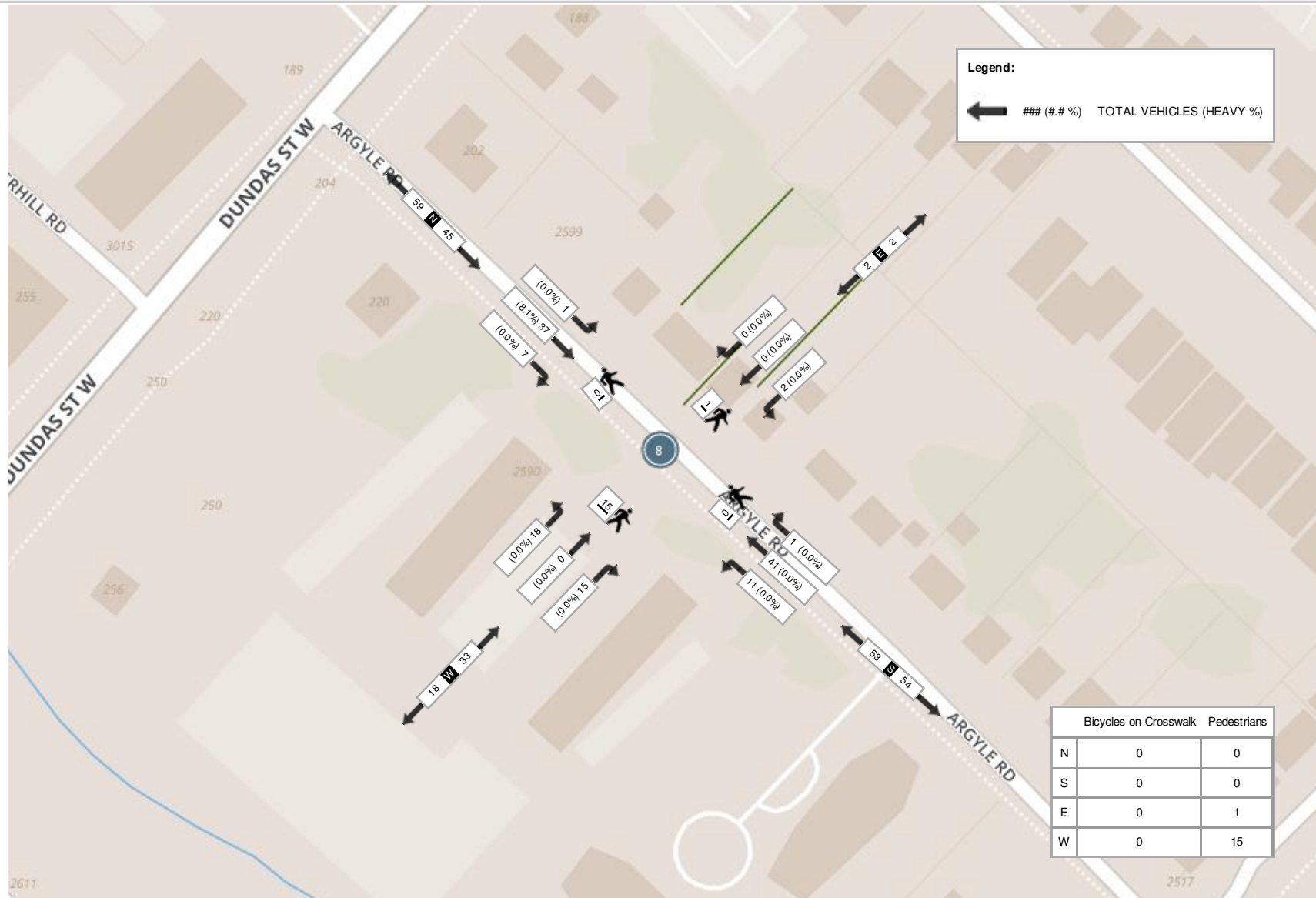
Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:15:00	2	12	0	0	0	14	0	0	0	0	0	0	0	11	2	0	0	13	1	0	3	0	0	4	31
08:30:00	1	8	0	0	0	9	0	0	1	0	1	1	0	6	2	0	0	8	4	0	5	0	4	9	27
08:45:00	4	10	0	0	0	14	0	0	0	0	0	0	1	12	3	0	0	16	6	0	7	0	7	13	43
09:00:00	0	7	1	0	0	8	0	0	1	0	0	1	0	12	4	0	0	16	4	0	3	0	4	7	32
Grand Total	7	37	1	0	0	45	0	0	2	0	1	2	1	41	11	0	0	53	15	0	18	0	15	33	133
Approach%	15.6%	82.2%	2.2%	0%		-	0%	0%	100%	0%		-	1.9%	77.4%	20.8%	0%		-	45.5%	0%	54.5%	0%		-	-
Totals %	5.3%	27.8%	0.8%	0%		33.8%	0%	0%	1.5%	0%		1.5%	0.8%	30.8%	8.3%	0%		39.8%	11.3%	0%	13.5%	0%		24.8%	-
PHF	0.44	0.77	0.25	0		0.8	0	0	0.5	0		0.5	0.25	0.85	0.69	0		0.83	0.63	0	0.64	0		0.63	-
Heavy	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Heavy %	0%	8.1%	0%	0%		6.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	7	34	1	0		42	0	0	2	0		2	1	41	11	0		53	15	0	18	0		33	-
Lights %	100%	91.9%	100%	0%		93.3%	0%	0%	100%	0%		100%	100%	100%	100%	0%		100%	100%	0%	100%	0%		100%	-
Buses	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	0%	8.1%	0%	0%		6.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	15	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	6.3%	-	-	-	-	-	0%	-	-	-	-	-	93.8%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



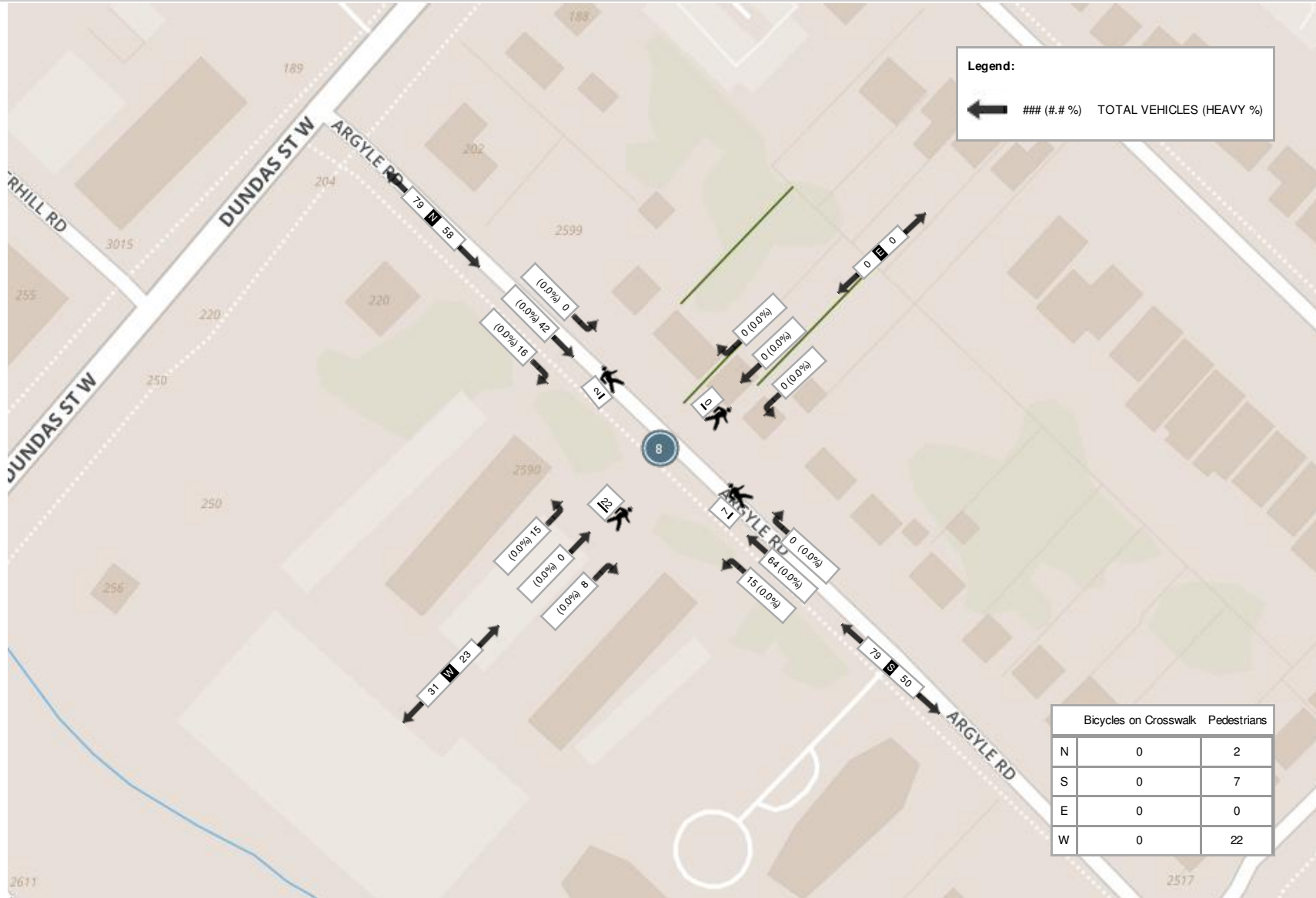
Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	2	10	0	0	0	12	0	0	0	0	0	0	0	21	6	0	2	27	3	0	6	0	5	9	48
17:00:00	4	6	0	0	0	10	0	0	0	0	0	0	0	13	5	0	1	18	3	0	1	0	5	4	32
17:15:00	5	17	0	0	2	22	0	0	0	0	0	0	0	10	1	0	2	11	2	0	3	0	7	5	38
17:30:00	5	9	0	1	0	15	0	0	0	0	0	0	0	20	3	0	2	23	0	0	5	0	5	5	43
Grand Total	16	42	0	1	2	59	0	0	0	0	0	0	0	64	15	0	7	79	8	0	15	0	22	23	161
Approach%	27.1%	71.2%	0%	1.7%	-	-	0%	0%	0%	0%	-	-	0%	81%	19%	0%	-	-	34.8%	0%	65.2%	0%	-	-	-
Totals %	9.9%	26.1%	0%	0.6%	-	36.6%	0%	0%	0%	0%	-	-	0%	39.8%	9.3%	0%	-	49.1%	5%	0%	9.3%	0%	-	14.3%	-
PHF	0.8	0.62	0	0.25	-	0.67	0	0	0	0	-	-	0	0.76	0.63	0	-	0.73	0.67	0	0.63	0	-	0.64	-
Heavy	0	0	0	0	-	0	0	0	0	0	-	-	0	0	0	0	-	0	0	0	0	0	-	0	-
Heavy %	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	-
Lights	16	42	0	1	-	59	0	0	0	0	-	-	0	64	15	0	-	79	8	0	15	0	-	23	-
Lights %	100%	100%	0%	100%	-	100%	0%	0%	0%	0%	-	-	0%	100%	100%	0%	-	100%	100%	0%	100%	0%	-	100%	-
Buses	0	0	0	0	-	0	0	0	0	0	-	-	0	0	0	0	-	0	0	0	0	0	-	0	-
Buses %	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	22	-	-
Pedestrians%	-	-	-	-	6.5%	-	-	-	-	-	0%	-	-	-	-	-	22.6%	-	-	-	-	-	71%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Light Rain (13.65 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (7 . ARGYLE RD & NORTH SITE DRIVEWAY)

Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:30:00	0	4	0	0	0	4	0	0	0	0	1	0	1	16	0	0	0	17	0	0	7	0	2	7	28		
07:45:00	1	10	0	0	0	11	0	0	0	0	0	0	0	20	0	0	0	20	0	0	3	0	2	3	34		
08:00:00	1	9	0	0	0	10	0	0	0	0	1	0	0	22	0	0	0	22	0	0	3	0	3	3	35		
08:15:00	1	13	0	0	0	14	0	0	0	0	0	0	0	14	0	0	0	14	0	0	1	0	1	1	29	126	
08:30:00	1	6	1	0	0	8	0	0	1	0	0	1	0	11	0	0	0	11	2	0	5	0	4	7	27	125	
08:45:00	0	12	0	0	1	12	0	0	0	0	0	0	0	18	1	0	0	19	2	0	4	0	8	6	37	128	
09:00:00	1	8	0	0	0	9	0	0	0	0	0	0	0	11	4	0	0	15	0	0	1	0	5	1	25	118	
09:15:00	0	8	0	0	0	8	0	0	0	0	0	0	0	12	1	0	0	13	0	0	1	0	2	1	22	111	
BREAK																											
16:00:00	1	14	0	0	0	15	0	0	0	0	1	0	0	13	0	0	0	13	1	0	0	0	6	1	29		
16:15:00	3	18	0	0	0	21	0	0	0	0	0	0	0	18	0	0	0	18	0	0	0	0	7	0	39		
16:30:00	0	16	0	0	0	16	0	0	0	0	0	0	0	16	3	0	0	19	0	0	1	0	11	1	36		
16:45:00	0	12	0	0	1	12	0	0	0	0	0	0	0	27	0	0	0	27	0	0	1	0	5	1	40	144	
17:00:00	2	12	0	0	1	14	0	0	0	0	0	0	0	14	0	0	0	14	0	0	1	0	3	1	29	144	
17:15:00	2	20	0	0	0	22	0	0	0	0	0	0	0	12	1	0	0	13	0	0	1	0	7	1	36	141	
17:30:00	2	13	0	0	0	15	0	0	0	0	0	0	0	23	3	0	0	26	2	0	0	0	4	2	43	148	
17:45:00	5	18	0	0	0	23	0	0	0	0	0	0	1	12	0	0	0	13	1	0	3	0	6	4	40	148	
Grand Total	20	193	1	0	3	214	0	0	1	0	3	1	2	259	13	0	0	274	8	0	32	0	76	40	529	-	
Approach%	9.3%	90.2%	0.5%	0%		-	0%	0%	100%	0%		-	0.7%	94.5%	4.7%	0%		-	20%	0%	80%	0%		-	-	-	
Totals %	3.8%	36.5%	0.2%	0%		40.5%	0%	0%	0.2%	0%		0.2%	0.4%	49%	2.5%	0%		51.8%	1.5%	0%	6%	0%		7.6%	-	-	
Heavy	0	4	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-	-	
Heavy %	0%	2.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0.4%	0%	0%		-	0%	0%	0%	0%		-	-	-	
Bicycles	0	1	0	0		-	0	0	0	0		-	0	2	0	0		-	0	0	0	0		-	-	-	
Bicycle %	0%	0.5%	0%	0%		-	0%	0%	0%	0%		-	0%	0.8%	0%	0%		-	0%	0%	0%	0%		-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)

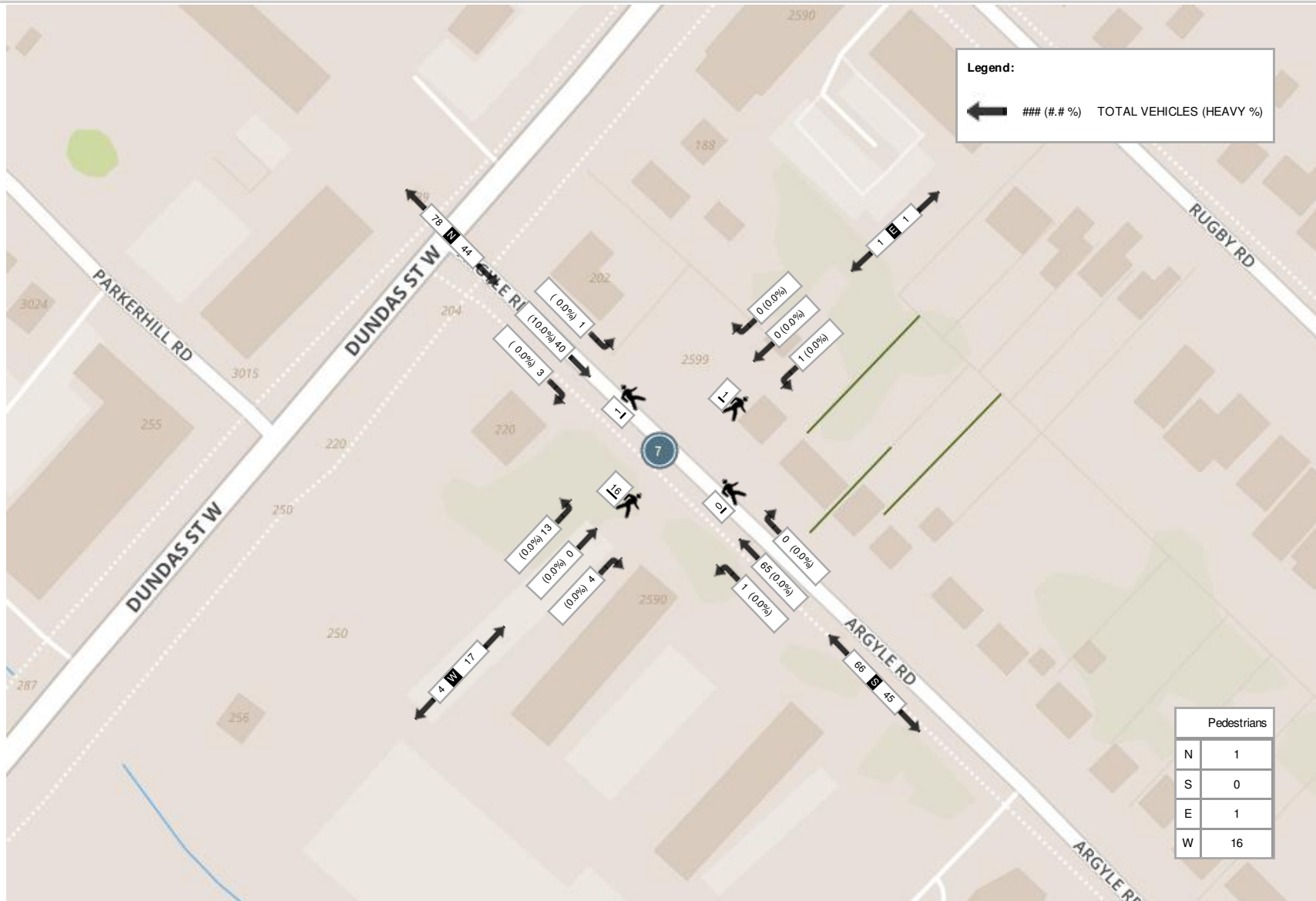
Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)	
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total		
08:00:00	1	9	0	0	0	10	0	0	0	0	1	0	0	22	0	0	0	0	22	0	0	3	0	3	3	35
08:15:00	1	13	0	0	0	14	0	0	0	0	0	0	0	14	0	0	0	0	14	0	0	1	0	1	1	29
08:30:00	1	6	1	0	0	8	0	0	1	0	0	1	0	11	0	0	0	0	11	2	0	5	0	4	7	27
08:45:00	0	12	0	0	1	12	0	0	0	0	0	0	0	18	1	0	0	0	19	2	0	4	0	8	6	37
Grand Total	3	40	1	0	1	44	0	0	1	0	1	1	0	65	1	0	0	0	66	4	0	13	0	16	17	128
Approach%	6.8%	90.9%	2.3%	0%		-	0%	0%	100%	0%		-	0%	98.5%	1.5%	0%		-	23.5%	0%	76.5%	0%		-	-	
Totals %	2.3%	31.3%	0.8%	0%		34.4%	0%	0%	0.8%	0%		0.8%	0%	50.8%	0.8%	0%		51.6%	3.1%	0%	10.2%	0%		13.3%	-	
PHF	0.75	0.77	0.25	0		0.79	0	0	0.25	0		0.25	0	0.74	0.25	0		0.75	0.5	0	0.65	0		0.61	-	
Heavy	0	4	0	0		4	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-	
Heavy %	0%	10%	0%	0%		9.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-	
Lights	3	36	1	0		40	0	0	1	0		1	0	65	1	0		66	4	0	13	0		17	-	
Lights %	100%	90%	100%	0%		90.9%	0%	0%	100%	0%		100%	0%	100%	100%	0%		100%	100%	0%	100%	0%		100%	-	
Buses	0	4	0	0		4	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-	
Buses %	0%	10%	0%	0%		9.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-	
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	16	-	-	
Pedestrians%	-	-	-	-	5.6%	-	-	-	-	-	5.6%	-	-	-	-	-	0%	-	-	-	-	-	88.9%	-	-	
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-	
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	



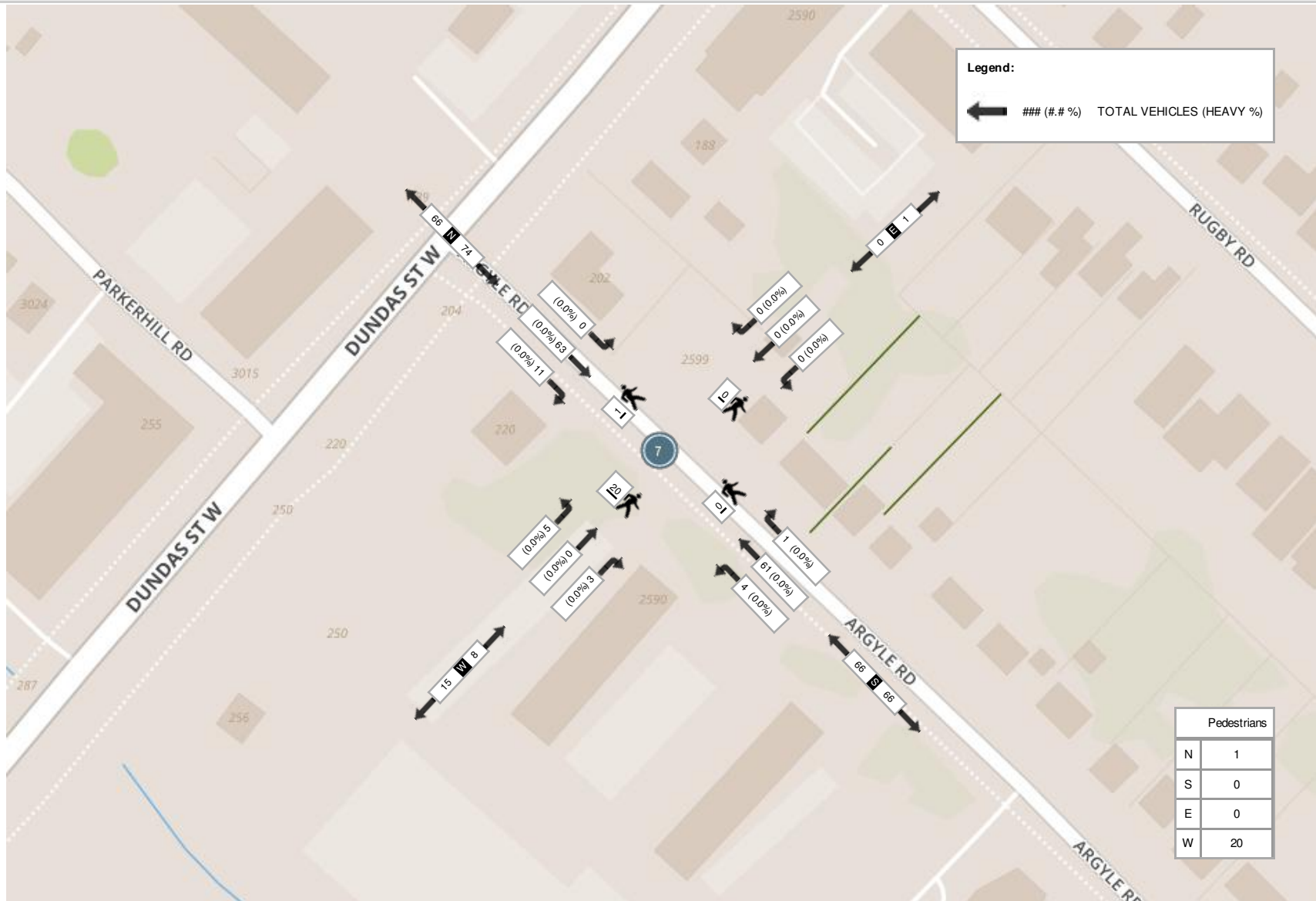
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	2	12	0	0	1	14	0	0	0	0	0	0	0	14	0	0	0	14	0	0	1	0	3	1	29
17:15:00	2	20	0	0	0	22	0	0	0	0	0	0	0	12	1	0	0	13	0	0	1	0	7	1	36
17:30:00	2	13	0	0	0	15	0	0	0	0	0	0	0	23	3	0	0	26	2	0	0	0	4	2	43
17:45:00	5	18	0	0	0	23	0	0	0	0	0	0	1	12	0	0	0	13	1	0	3	0	6	4	40
Grand Total	11	63	0	0	1	74	0	0	0	0	0	0	1	61	4	0	0	66	3	0	5	0	20	8	148
Approach%	14.9%	85.1%	0%	0%	-	-	0%	0%	0%	0%	-	-	1.5%	92.4%	6.1%	0%	-	-	37.5%	0%	62.5%	0%	-	-	-
Totals %	7.4%	42.6%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0.7%	41.2%	2.7%	0%	44.6%	44.6%	2%	0%	3.4%	0%	5.4%	5.4%	-
PHF	0.55	0.79	0	0	0.8	0.8	0	0	0	0	0	0	0.25	0.66	0.33	0	0.63	0.63	0.38	0	0.42	0	0.5	0.5	-
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Lights	11	63	0	0	74	74	0	0	0	0	0	0	1	61	4	0	66	66	3	0	5	0	8	8	-
Lights %	100%	100%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	100%	100%	100%	0%	100%	0%	100%	100%	-
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	20	-	-
Pedestrians%	-	-	-	-	4.8%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	95.2%	-	-
Bicycles on Road	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (9 . ARGYLE RD & SOUTH SITE DRIVEWAY)

Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:30:00	0	8	0	0	0	8	0	0	0	0	0	0	0	12	0	0	0	12	0	0	1	0	1	1	21		
07:45:00	1	8	0	0	0	9	0	0	0	0	0	0	0	13	0	0	0	13	1	0	0	0	1	1	23		
08:00:00	1	9	0	0	0	10	0	0	0	0	1	0	0	16	0	0	0	16	2	0	0	0	9	2	28		
08:15:00	0	14	0	0	0	14	0	0	0	0	0	0	0	12	1	0	0	13	3	0	0	0	0	3	30	102	
08:30:00	0	13	0	0	0	13	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	12	0	21	102	
08:45:00	0	16	0	0	0	16	0	0	0	0	0	0	0	16	1	0	0	17	4	0	0	0	11	4	37	116	
09:00:00	0	11	0	0	0	11	0	0	0	0	0	0	0	15	3	0	0	18	2	0	2	0	4	4	33	121	
09:15:00	0	7	0	0	0	7	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	2	0	14	105	
BREAK																											
16:00:00	0	11	0	0	1	11	0	0	0	0	1	0	0	15	1	0	0	16	0	0	0	0	5	0	27		
16:15:00	1	14	0	0	0	15	0	0	0	0	1	0	0	14	0	0	0	14	0	0	0	0	9	0	29		
16:30:00	2	8	0	0	0	10	0	0	0	0	0	0	0	15	1	0	0	16	0	0	0	0	3	0	26		
16:45:00	1	12	0	0	0	13	0	0	0	0	0	0	0	26	1	0	0	27	3	0	1	0	2	4	44	126	
17:00:00	0	9	0	0	0	9	0	0	0	0	0	0	0	18	0	0	0	18	1	0	0	0	2	1	28	127	
17:15:00	2	17	0	0	0	19	0	0	0	0	0	0	0	8	0	0	0	8	1	0	1	0	8	2	29	127	
17:30:00	1	8	0	0	0	9	0	0	0	0	0	0	0	21	1	1	0	23	0	0	2	0	3	2	34	135	
17:45:00	0	15	0	0	0	15	0	0	1	0	0	1	0	17	3	0	0	20	0	0	0	0	7	0	36	127	
Grand Total	9	180	0	0	1	189	0	0	1	0	3	1	0	233	12	1	0	246	17	0	7	0	79	24	460	-	
Approach%	4.8%	95.2%	0%	0%		-	0%	0%	100%	0%		-	0%	94.7%	4.9%	0.4%		-	70.8%	0%	29.2%	0%		-	-	-	
Totals %	2%	39.1%	0%	0%		41.1%	0%	0%	0.2%	0%	0.2%	0%	50.7%	2.6%	0.2%		53.5%	3.7%	0%	1.5%	0%		5.2%	-	-		
Heavy	0	5	0	0		-	0	0	0	0		-	0	1	0	0		-	0	0	0	0		-	-	-	
Heavy %	0%	2.8%	0%	0%		-	0%	0%	0%	0%		-	0%	0.4%	0%	0%		-	0%	0%	0%	0%		-	-	-	
Bicycles	1	0	0	0		-	0	0	0	0		-	0	2	0	0		-	0	0	0	0		-	-	-	
Bicycle %	11.1%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.9%	0%	0%		-	0%	0%	0%	0%		-	-	-	



Peak Hour: 08:15 AM - 09:15 AM Weather: Light Rain (13.65 °C)

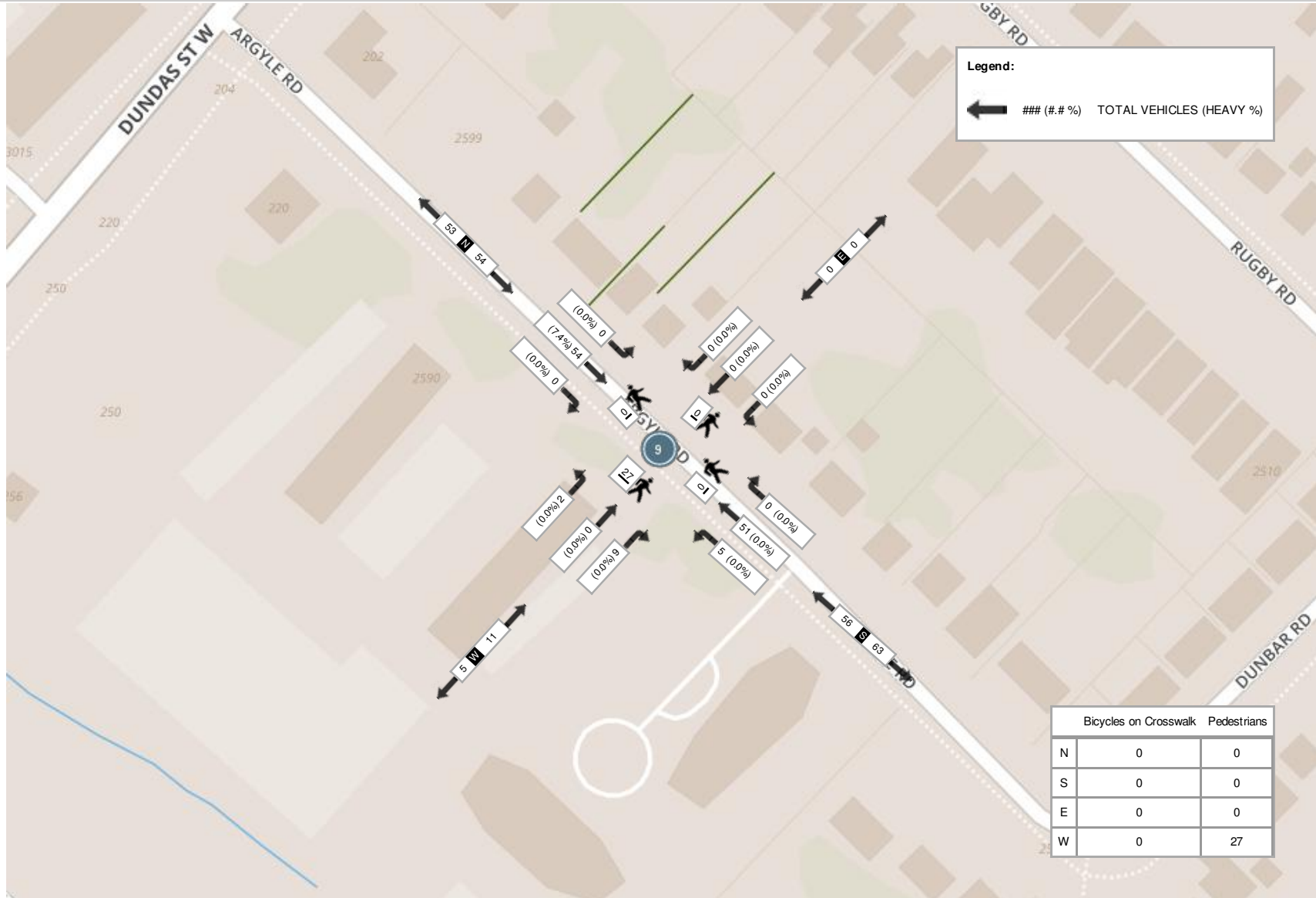
Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:15:00	0	14	0	0	0	14	0	0	0	0	0	0	0	12	1	0	0	13	3	0	0	0	0	3	30
08:30:00	0	13	0	0	0	13	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	12	0	21
08:45:00	0	16	0	0	0	16	0	0	0	0	0	0	0	16	1	0	0	17	4	0	0	0	11	4	37
09:00:00	0	11	0	0	0	11	0	0	0	0	0	0	0	15	3	0	0	18	2	0	2	0	4	4	33
Grand Total	0	54	0	0	0	54	0	0	0	0	0	0	0	51	5	0	0	56	9	0	2	0	27	11	121
Approach%	0%	100%	0%	0%		-	0%	0%	0%	0%		-	0%	91.1%	8.9%	0%		-	81.8%	0%	18.2%	0%		-	-
Totals %	0%	44.6%	0%	0%		44.6%	0%	0%	0%	0%		0%	0%	42.1%	4.1%	0%		46.3%	7.4%	0%	1.7%	0%		9.1%	-
PHF	0	0.84	0	0		0.84	0	0	0	0		0	0	0.8	0.42	0		0.78	0.56	0	0.25	0		0.69	-
Heavy	0	4	0	0		4	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Heavy %	0%	7.4%	0%	0%		7.4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	0	50	0	0		50	0	0	0	0		0	0	51	5	0		56	9	0	2	0		11	-
Lights %	0%	92.6%	0%	0%		92.6%	0%	0%	0%	0%		0%	0%	100%	100%	0%		100%	100%	0%	100%	0%		100%	-
Single-Unit Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	1.9%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	0%	5.6%	0%	0%		5.6%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	27	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	100%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



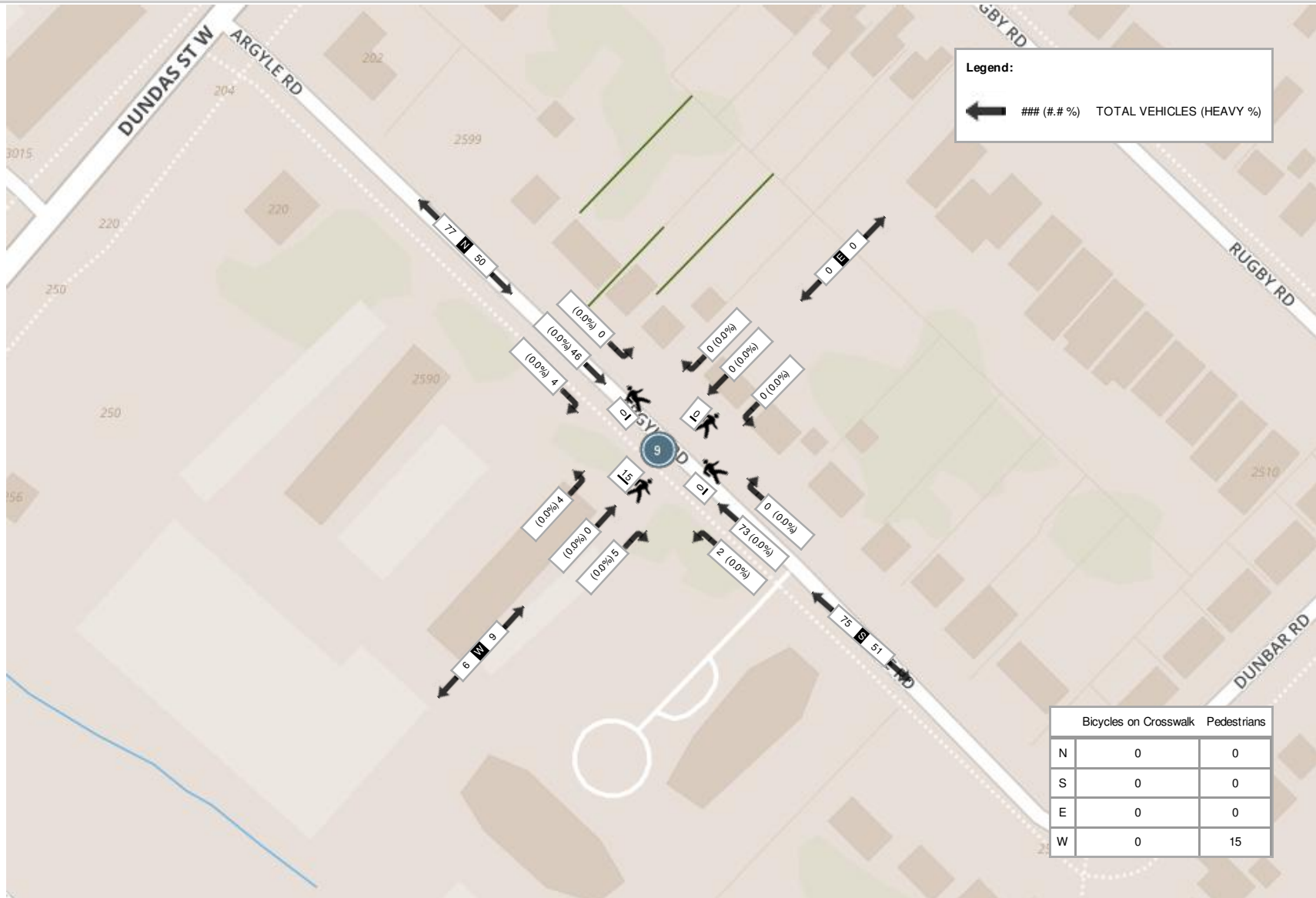
Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach ARGYLE RD						E Approach EAST DRIVEWAY						S Approach ARGYLE RD						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	1	12	0	0	0	13	0	0	0	0	0	0	0	26	1	0	0	27	3	0	1	0	2	4	44
17:00:00	0	9	0	0	0	9	0	0	0	0	0	0	0	18	0	0	0	18	1	0	0	0	2	1	28
17:15:00	2	17	0	0	0	19	0	0	0	0	0	0	0	8	0	0	0	8	1	0	1	0	8	2	29
17:30:00	1	8	0	0	0	9	0	0	0	0	0	0	0	21	1	1	0	23	0	0	2	0	3	2	34
Grand Total	4	46	0	0	0	50	0	0	0	0	0	0	0	73	2	1	0	76	5	0	4	0	15	9	135
Approach%	8%	92%	0%	0%		-	0%	0%	0%	0%		-	0%	96.1%	2.6%	1.3%		-	55.6%	0%	44.4%	0%		-	-
Totals %	3%	34.1%	0%	0%		37%	0%	0%	0%	0%		0%	0%	54.1%	1.5%	0.7%		56.3%	3.7%	0%	3%	0%		6.7%	-
PHF	0.5	0.68	0	0		0.66	0	0	0	0		0	0	0.7	0.5	0.25		0.7	0.42	0	0.5	0		0.56	-
Heavy	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	4	46	0	0		50	0	0	0	0		0	0	73	2	1		76	5	0	4	0		9	-
Lights %	100%	100%	0%	0%		100%	0%	0%	0%	0%		0%	0%	100%	100%	100%		100%	100%	0%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	15	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	100%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Light Rain (13.65 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (6 . CONFEDERATION PKWY & DUNBAR RD)

Start Time	N Approach CONFEDERATION PKWY						E Approach DUNBAR RD						S Approach CONFEDERATION PKWY						W Approach DUNBAR RD						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:30:00	3	104	0	0	0	107	0	0	0	0	5	0	0	97	7	0	0	104	18	0	2	0	2	20	231		
07:45:00	2	135	0	0	0	137	0	0	1	0	1	1	0	121	2	0	0	123	12	0	2	0	0	14	275		
08:00:00	2	139	0	0	0	141	0	0	0	0	5	0	0	107	2	0	0	109	17	0	5	0	4	22	272		
08:15:00	5	123	0	0	0	128	1	0	0	0	4	1	0	96	6	0	0	102	21	0	3	0	2	24	255	1033	
08:30:00	4	115	0	0	0	119	0	0	0	0	9	0	0	125	11	0	0	136	21	0	1	0	2	22	277	1079	
08:45:00	4	134	0	0	0	138	1	0	0	0	3	1	0	134	10	0	2	144	35	0	3	0	1	38	321	1125	
09:00:00	3	119	2	1	1	125	3	0	0	0	4	3	0	158	29	0	1	187	30	0	4	0	4	34	349	1202	
09:15:00	2	99	0	0	0	101	1	0	0	0	2	1	1	138	9	0	0	148	13	0	1	0	3	14	264	1211	
BREAK																											
16:00:00	10	99	1	0	0	110	0	0	1	0	8	1	1	182	18	0	0	201	10	0	2	0	4	12	324		
16:15:00	11	123	1	0	3	135	0	0	0	0	6	0	0	156	13	0	0	169	18	0	1	0	1	19	323		
16:30:00	11	110	0	0	0	121	0	0	0	0	5	0	0	143	13	0	0	156	12	0	1	0	1	13	290		
16:45:00	9	130	2	0	0	141	3	0	0	0	7	3	3	131	17	0	1	151	19	0	3	0	5	22	317	1254	
17:00:00	9	107	1	0	0	117	1	0	1	0	7	2	0	162	24	0	0	186	14	0	7	0	10	21	326	1256	
17:15:00	7	155	0	0	0	162	0	0	0	0	7	0	0	143	10	0	0	153	13	0	5	0	2	18	333	1266	
17:30:00	10	136	1	0	1	147	0	0	1	0	6	1	2	118	15	0	2	135	8	0	3	0	9	11	294	1270	
17:45:00	12	117	0	0	0	129	0	0	0	0	6	0	1	160	20	0	0	181	21	0	1	0	7	22	332	1285	
Grand Total	104	1945	8	1	5	2058	10	0	4	0	85	14	8	2171	206	0	6	2385	282	0	44	0	57	326	4783	-	
Approach%	5.1%	94.5%	0.4%	0%		-	71.4%	0%	28.6%	0%		-	0.3%	91%	8.6%	0%		-	86.5%	0%	13.5%	0%		-	-	-	
Totals %	2.2%	40.7%	0.2%	0%		43%	0.2%	0%	0.1%	0%		0.3%	0.2%	45.4%	4.3%	0%		49.9%	5.9%	0%	0.9%	0%		6.8%	-	-	
Heavy	1	45	0	0		-	0	0	0	0		-	0	42	1	0		-	5	0	2	0		-	-	-	
Heavy %	1%	2.3%	0%	0%		-	0%	0%	0%	0%		-	0%	1.9%	0.5%	0%		-	1.8%	0%	4.5%	0%		-	-	-	
Bicycles	1	2	0	0		-	0	0	1	0		-	0	2	0	0		-	0	0	1	0		-	-	-	
Bicycle %	1%	0.1%	0%	0%		-	0%	0%	25%	0%		-	0%	0.1%	0%	0%		-	0%	0%	2.3%	0%		-	-	-	



Peak Hour: 08:30 AM - 09:30 AM Weather: Light Rain (13.65 °C)

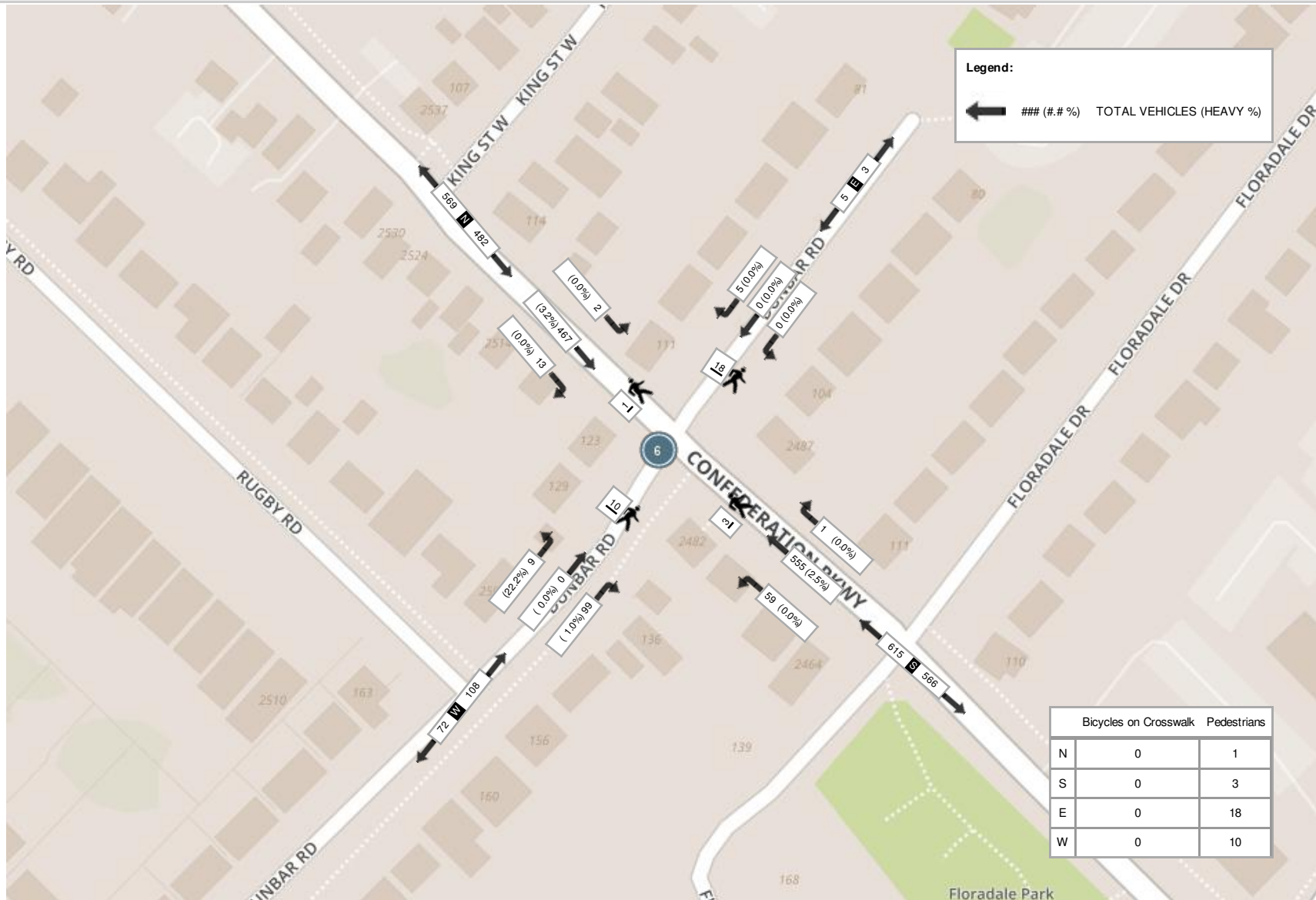
Start Time	N Approach CONFEDERATION PKWY						E Approach DUNBAR RD						S Approach CONFEDERATION PKWY						W Approach DUNBAR RD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:30:00	4	115	0	0	0	119	0	0	0	0	9	0	0	125	11	0	0	136	21	0	1	0	2	22	277
08:45:00	4	134	0	0	0	138	1	0	0	0	3	1	0	134	10	0	2	144	35	0	3	0	1	38	321
09:00:00	3	119	2	1	1	125	3	0	0	0	4	3	0	158	29	0	1	187	30	0	4	0	4	34	349
09:15:00	2	99	0	0	0	101	1	0	0	0	2	1	1	138	9	0	0	148	13	0	1	0	3	14	264
Grand Total	13	467	2	1	1	483	5	0	0	0	18	5	1	555	59	0	3	615	99	0	9	0	10	108	1211
Approach%	2.7%	96.7%	0.4%	0.2%	-	-	100%	0%	0%	0%	-	-	0.2%	90.2%	9.6%	0%	-	-	91.7%	0%	8.3%	0%	-	-	-
Totals %	1.1%	38.6%	0.2%	0.1%	39.9%	0.4%	0%	0%	0%	0.4%	0.1%	45.8%	4.9%	0%	50.8%	8.2%	0%	0.7%	0%	8.9%	-	-	-	-	-
PHF	0.81	0.87	0.25	0.25	0.88	0.42	0	0	0	0.42	0.25	0.88	0.51	0	0.82	0.71	0	0.56	0	0.71	-	-	-	-	-
Heavy	0	15	0	0	15	0	0	0	0	0	0	0	0	14	0	0	14	1	0	2	0	3	-	-	-
Heavy %	0%	3.2%	0%	0%	3.1%	0%	0%	0%	0%	0%	0%	0%	0%	2.5%	0%	0%	2.3%	1%	0%	22.2%	0%	2.8%	-	-	-
Lights	13	452	2	1	468	5	0	0	0	5	1	541	59	0	601	98	0	7	0	105	-	-	-	-	-
Lights %	100%	96.8%	100%	100%	96.9%	100%	0%	0%	0%	100%	100%	97.5%	100%	0%	97.7%	99%	0%	77.8%	0%	97.2%	-	-	-	-	-
Single-Unit Trucks	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	-	-	-	-	-
Single-Unit Trucks %	0%	0.2%	0%	0%	0.2%	0%	0%	0%	0%	0%	0%	0.7%	0%	0%	0.7%	0%	0%	11.1%	0%	0.9%	-	-	-	-	-
Buses	0	14	0	0	14	0	0	0	0	0	0	10	0	0	10	1	0	1	0	2	-	-	-	-	-
Buses %	0%	3%	0%	0%	2.9%	0%	0%	0%	0%	0%	0%	1.8%	0%	0%	1.6%	1%	0%	11.1%	0%	1.9%	-	-	-	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	18	-	-	-	-	3	-	-	-	-	10	-	-	-	-	-
Pedestrians%	-	-	-	-	3.1%	-	-	-	-	56.3%	-	-	-	-	9.4%	-	-	-	-	31.3%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	0	0	-	-	-	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-



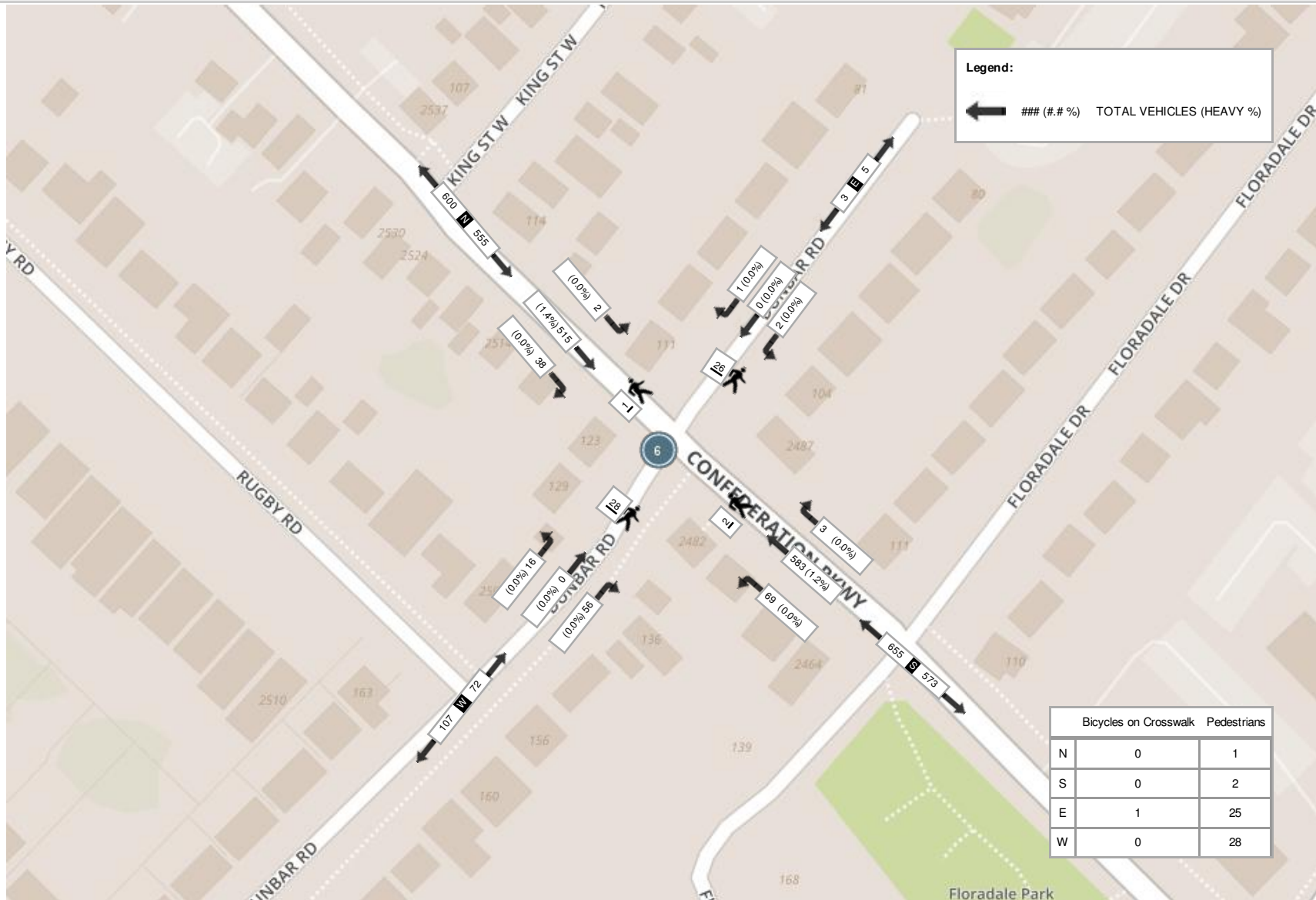
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach CONFEDERATION PKWY						E Approach DUNBAR RD						S Approach CONFEDERATION PKWY						W Approach DUNBAR RD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	9	107	1	0	0	117	1	0	1	0	7	2	0	162	24	0	0	186	14	0	7	0	10	21	326
17:15:00	7	155	0	0	0	162	0	0	0	0	7	0	0	143	10	0	0	153	13	0	5	0	2	18	333
17:30:00	10	136	1	0	1	147	0	0	1	0	6	1	2	118	15	0	2	135	8	0	3	0	9	11	294
17:45:00	12	117	0	0	0	129	0	0	0	0	6	0	1	160	20	0	0	181	21	0	1	0	7	22	332
Grand Total	38	515	2	0	1	555	1	0	2	0	26	3	3	583	69	0	2	655	56	0	16	0	28	72	1285
Approach%	6.8%	92.8%	0.4%	0%		-	33.3%	0%	66.7%	0%		-	0.5%	89%	10.5%	0%		-	77.8%	0%	22.2%	0%		-	-
Totals %	3%	40.1%	0.2%	0%		43.2%	0.1%	0%	0.2%	0%		0.2%	0.2%	45.4%	5.4%	0%		51%	4.4%	0%	1.2%	0%		5.6%	-
PHF	0.79	0.83	0.5	0		0.86	0.25	0	0.5	0		0.38	0.38	0.9	0.72	0		0.88	0.67	0	0.57	0		0.82	-
Heavy	0	7	0	0		7	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	-
Heavy %	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	0%	0%	0%	0%		0%	-
Lights	38	508	2	0		548	1	0	2	0		3	3	576	69	0		648	56	0	16	0		72	-
Lights %	100%	98.6%	100%	0%		98.7%	100%	0%	100%	0%		100%	100%	98.8%	100%	0%		98.9%	100%	0%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	-
Buses	0	7	0	0		7	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	-
Buses %	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	1%	0%	0%		0.9%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	25	-	-	-	-	-	2	-	-	-	-	-	28	-	-
Pedestrians%	-	-	-	-	1.8%	-	-	-	-	-	43.9%	-	-	-	-	-	3.5%	-	-	-	-	-	49.1%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	1.8%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:30 AM - 09:30 AM Weather: Light Rain (13.65 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (5 . CONFEDERATION PKWY & KING ST W)

Start Time	N Approach CONFEDERATION PKWY					E Approach KING ST W					S Approach CONFEDERATION PKWY					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	U-Turn S:S	Peds S:	Approach Total		
07:30:00	110	41	0	1	151	24	7	0	6	31	11	79	0	2	90	272	
07:45:00	117	35	0	1	152	26	10	0	2	36	14	110	0	1	124	312	
08:00:00	133	43	0	1	176	23	8	0	3	31	17	101	0	2	118	325	
08:15:00	127	49	0	0	176	47	10	0	3	57	15	83	0	1	98	331	1240
08:30:00	105	43	0	0	148	42	5	0	2	47	20	104	0	3	124	319	1287
08:45:00	133	60	0	0	193	45	8	0	1	53	19	114	0	0	133	379	1354
09:00:00	130	49	0	2	179	35	8	0	1	43	28	143	0	3	171	393	1422
09:15:00	74	40	0	2	114	38	11	0	1	49	24	113	0	1	137	300	1391
BREAK																	
16:00:00	86	38	0	5	124	94	27	0	5	121	19	156	0	1	175	420	
16:15:00	97	55	0	0	152	86	32	0	4	118	18	150	0	1	168	438	
16:30:00	87	47	0	2	134	81	35	0	6	116	22	120	0	3	142	392	
16:45:00	111	54	0	0	165	80	37	0	5	117	20	118	0	6	138	420	1670
17:00:00	76	32	0	0	108	100	35	0	5	135	16	154	0	6	170	413	1663
17:15:00	128	46	0	0	174	71	35	0	9	106	22	121	0	2	143	423	1648
17:30:00	107	43	0	2	150	95	37	0	9	132	21	102	0	3	123	405	1661
17:45:00	96	47	0	3	143	75	37	0	6	112	31	132	0	12	163	418	1659
Grand Total	1717	722	0	19	2439	962	342	0	68	1304	317	1900	0	47	2217	5960	-
Approach%	70.4%	29.6%	0%		-	73.8%	26.2%	0%		-	14.3%	85.7%	0%		-	-	-
Totals %	28.8%	12.1%	0%		40.9%	16.1%	5.7%	0%		21.9%	5.3%	31.9%	0%		37.2%	-	-
Heavy	44	12	0		-	12	2	0		-	2	41	0		-	-	-
Heavy %	2.6%	1.7%	0%		-	1.2%	0.6%	0%		-	0.6%	2.2%	0%		-	-	-
Bicycles	2	1	0		-	1	0	0		-	1	1	0		-	-	-
Bicycle %	0.1%	0.1%	0%		-	0.1%	0%	0%		-	0.3%	0.1%	0%		-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Light Rain (13.65 °C)

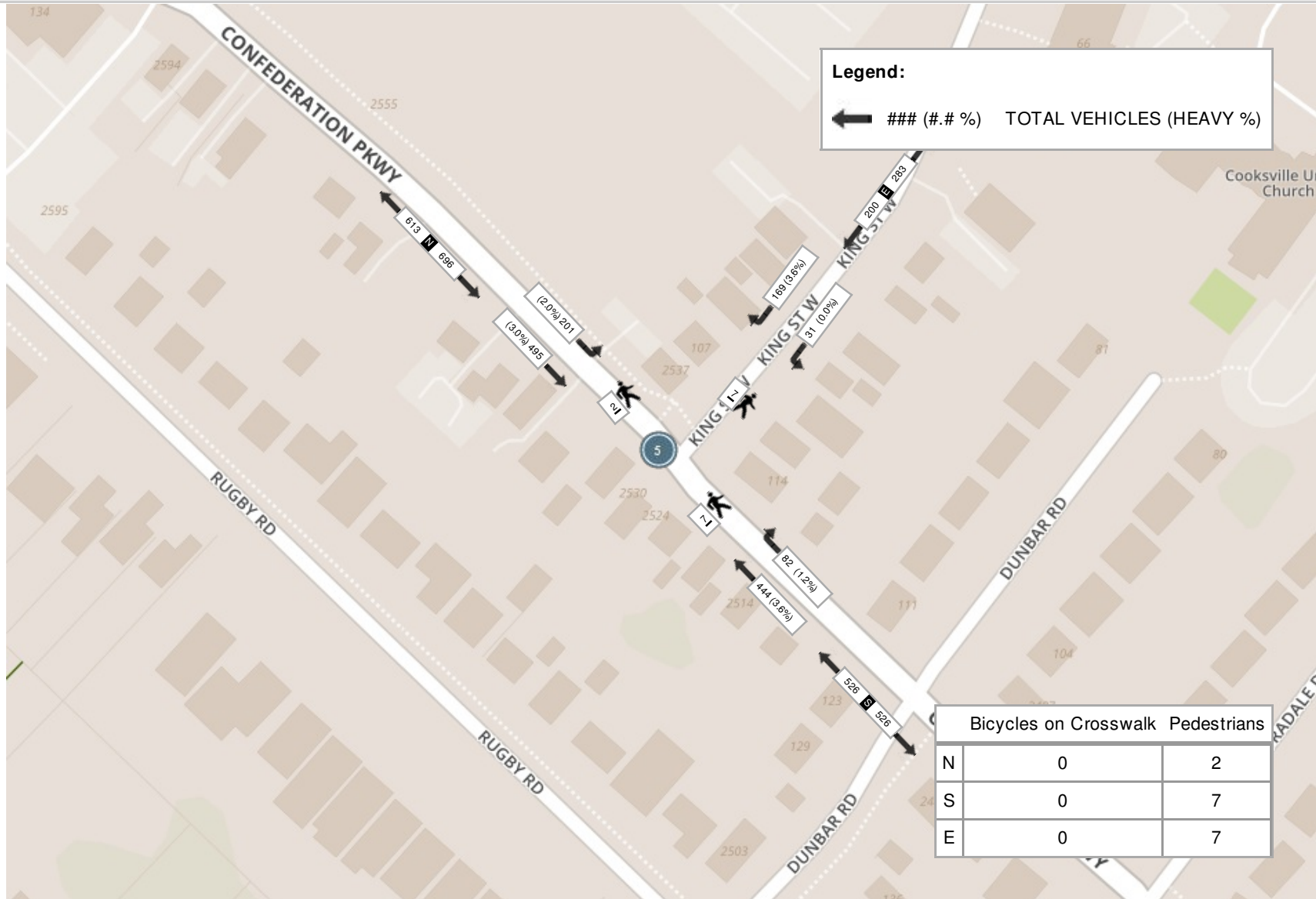
Start Time	N Approach CONFEDERATION PKWY					E Approach KING ST W					S Approach CONFEDERATION PKWY					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
08:15:00	127	49	0	0	176	47	10	0	3	57	15	83	0	1	98	331
08:30:00	105	43	0	0	148	42	5	0	2	47	20	104	0	3	124	319
08:45:00	133	60	0	0	193	45	8	0	1	53	19	114	0	0	133	379
09:00:00	130	49	0	2	179	35	8	0	1	43	28	143	0	3	171	393
Grand Total	495	201	0	2	696	169	31	0	7	200	82	444	0	7	526	1422
Approach%	71.1%	28.9%	0%		-	84.5%	15.5%	0%		-	15.6%	84.4%	0%		-	-
Totals %	34.8%	14.1%	0%		48.9%	11.9%	2.2%	0%		14.1%	5.8%	31.2%	0%		37%	-
PHF	0.93	0.84	0		0.9	0.9	0.78	0		0.88	0.73	0.78	0		0.77	-
Heavy	15	4	0		19	6	0	0		6	1	16	0		17	-
Heavy %	3%	2%	0%		2.7%	3.6%	0%	0%		3%	1.2%	3.6%	0%		3.2%	-
Lights	480	197	0		677	163	31	0		194	81	428	0		509	-
Lights %	97%	98%	0%		97.3%	96.4%	100%	0%		97%	98.8%	96.4%	0%		96.8%	-
Single-Unit Trucks	1	2	0		3	1	0	0		1	0	2	0		2	-
Single-Unit Trucks %	0.2%	1%	0%		0.4%	0.6%	0%	0%		0.5%	0%	0.5%	0%		0.4%	-
Buses	14	2	0		16	5	0	0		5	1	14	0		15	-
Buses %	2.8%	1%	0%		2.3%	3%	0%	0%		2.5%	1.2%	3.2%	0%		2.9%	-
Pedestrians	-	-	-	2	-	-	-	-	7	-	-	-	-	7	-	-
Pedestrians%	-	-	-	12.5%	-	-	-	-	43.8%	-	-	-	-	43.8%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



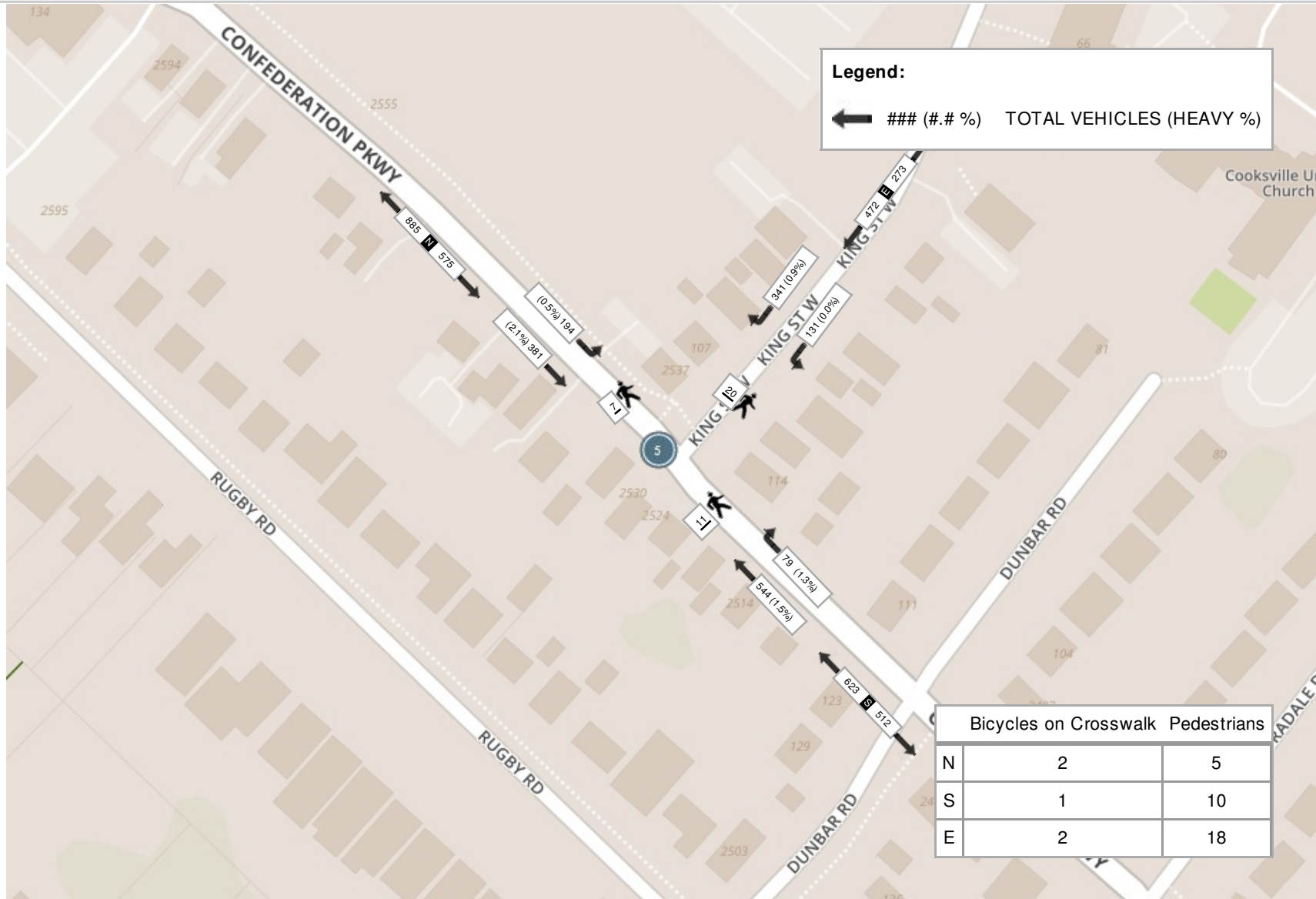
Peak Hour: 04:00 PM - 05:00 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach CONFEDERATION PKWY					E Approach KING ST W					S Approach CONFEDERATION PKWY					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:00:00	86	38	0	5	124	94	27	0	5	121	19	156	0	1	175	420
16:15:00	97	55	0	0	152	86	32	0	4	118	18	150	0	1	168	438
16:30:00	87	47	0	2	134	81	35	0	6	116	22	120	0	3	142	392
16:45:00	111	54	0	0	165	80	37	0	5	117	20	118	0	6	138	420
Grand Total	381	194	0	7	575	341	131	0	20	472	79	544	0	11	623	1670
Approach%	66.3%	33.7%	0%		-	72.2%	27.8%	0%		-	12.7%	87.3%	0%		-	-
Totals %	22.8%	11.6%	0%		34.4%	20.4%	7.8%	0%		28.3%	4.7%	32.6%	0%		37.3%	-
PHF	0.86	0.88	0		0.87	0.91	0.89	0		0.98	0.9	0.87	0		0.89	-
Heavy	8	1	0		9	3	0	0		3	1	8	0		9	-
Heavy %	2.1%	0.5%	0%		1.6%	0.9%	0%	0%		0.6%	1.3%	1.5%	0%		1.4%	-
Lights	373	193	0		566	338	131	0		469	78	536	0		614	-
Lights %	97.9%	99.5%	0%		98.4%	99.1%	100%	0%		99.4%	98.7%	98.5%	0%		98.6%	-
Single-Unit Trucks	2	1	0		3	1	0	0		1	0	2	0		2	-
Single-Unit Trucks %	0.5%	0.5%	0%		0.5%	0.3%	0%	0%		0.2%	0%	0.4%	0%		0.3%	-
Buses	6	0	0		6	2	0	0		2	1	6	0		7	-
Buses %	1.6%	0%	0%		1%	0.6%	0%	0%		0.4%	1.3%	1.1%	0%		1.1%	-
Pedestrians	-	-	-	5	-	-	-	-	18	-	-	-	-	10	-	-
Pedestrians%	-	-	-	13.2%	-	-	-	-	47.4%	-	-	-	-	26.3%	-	-
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	2	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	5.3%	-	-	-	-	5.3%	-	-	-	-	2.6%	-	-
Bicycles on Road	2	1	0	0	-	1	0	0	0	-	1	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Light Rain (13.65 °C)



Peak Hour: 04:00 PM - 05:00 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (2 . DUNDAS ST W & ARGYLE ST)

Start Time	E Approach DUNDAS ST W					S Approach ARGYLE ST					W Approach DUNDAS ST W					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	U-Turn W:W	Peds W:	Approach Total		
07:30:00	144	2	0	0	146	12	10	0	2	22	3	299	0	0	302	470	
07:45:00	123	3	0	0	126	19	5	0	6	24	10	318	0	0	328	478	
08:00:00	164	2	0	1	166	10	11	0	7	21	9	342	0	0	351	538	
08:15:00	155	6	0	0	161	9	8	0	0	17	9	284	0	0	293	471	1957
08:30:00	221	5	0	0	226	11	6	0	0	17	4	292	0	2	296	539	2026
08:45:00	170	5	0	1	175	12	8	0	6	20	8	366	0	0	374	569	2117
09:00:00	167	4	0	3	171	7	9	0	4	16	6	266	0	0	272	459	2038
09:15:00	178	6	0	1	184	7	5	0	4	12	3	296	0	0	299	495	2062
09:30:00	174	6	0	1	180	3	5	0	5	8	6	288	0	0	294	482	2005
09:45:00	181	3	0	0	184	10	4	0	3	14	8	295	0	0	303	501	1937
10:00:00	175	2	0	1	177	9	6	0	0	15	7	277	0	0	284	476	1954
10:15:00	176	5	0	0	181	12	4	0	1	16	2	195	0	0	197	394	1853
10:30:00	168	6	0	0	174	7	8	0	2	15	9	269	0	1	278	467	1838
10:45:00	199	3	0	0	202	8	6	0	4	14	7	198	0	0	205	421	1758
11:00:00	202	5	0	0	207	6	5	0	4	11	6	238	0	0	244	462	1744
11:15:00	209	7	0	1	216	8	11	0	3	19	8	242	1	0	251	486	1836
11:30:00	211	7	0	1	218	11	8	0	4	19	5	225	0	0	230	467	1836
11:45:00	212	8	0	2	220	7	6	0	3	13	3	228	0	0	231	464	1879
12:00:00	232	7	0	2	239	9	8	0	6	17	5	196	0	0	201	457	1874
12:15:00	231	5	0	1	236	9	4	0	6	13	10	242	0	0	252	501	1889
12:30:00	243	4	0	0	247	14	6	0	2	20	6	199	0	0	205	472	1894
12:45:00	229	7	0	0	236	8	10	0	9	18	11	206	0	0	217	471	1901
13:00:00	245	11	0	0	256	7	4	0	1	11	10	212	0	0	222	489	1933



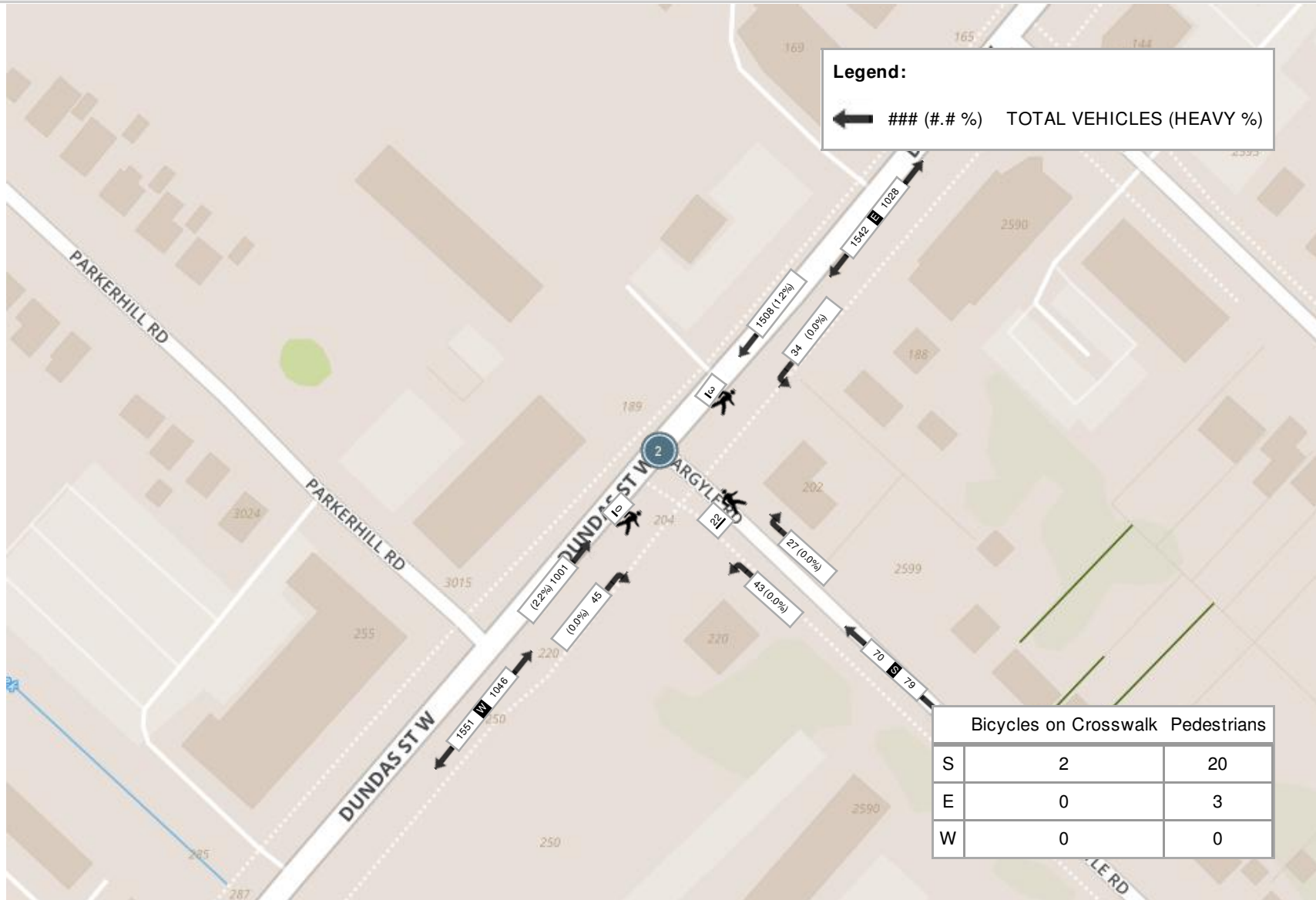
13:15:00	252	2	0	6	254	11	5	0	6	16	9	215	0	0	224	494	1926
13:30:00	223	3	0	2	226	10	8	0	6	18	5	201	0	0	206	450	1904
13:45:00	237	12	0	0	249	8	12	0	8	20	4	222	0	0	226	495	1928
14:00:00	255	4	0	1	259	8	9	0	4	17	14	205	0	0	219	495	1934
14:15:00	262	6	0	0	268	8	11	0	12	19	4	199	0	0	203	490	1930
14:30:00	262	2	0	0	264	10	11	0	2	21	10	241	0	3	251	536	2016
14:45:00	282	6	0	0	288	9	11	0	15	20	7	200	0	0	207	515	2036
15:00:00	295	7	1	0	303	3	7	0	10	10	8	197	0	0	205	518	2059
15:15:00	300	4	0	0	304	3	10	0	5	13	18	261	0	0	279	596	2165
15:30:00	270	9	0	3	279	7	5	0	5	12	8	223	0	1	231	522	2151
15:45:00	350	8	0	1	358	7	9	0	2	16	8	222	0	0	230	604	2240
16:00:00	323	8	0	0	331	7	11	0	9	18	6	217	0	0	223	572	2294
16:15:00	388	7	0	2	395	7	8	0	1	15	14	252	0	0	266	676	2374
16:30:00	344	7	0	1	351	7	9	0	2	16	9	245	0	2	254	621	2473
16:45:00	333	7	0	0	340	15	19	0	1	34	7	251	0	1	258	632	2501
17:00:00	407	9	0	1	416	6	7	0	6	13	8	252	0	0	260	689	2618
17:15:00	374	13	0	0	387	5	11	0	2	16	7	231	0	0	238	641	2583
17:30:00	360	7	0	2	367	11	14	0	11	25	13	254	0	0	267	659	2621
17:45:00	367	5	0	0	372	5	11	0	3	16	17	264	0	0	281	669	2658
Grand Total	10293	245	1	34	10539	362	345	0	192	707	331	10325	1	10	10657	21903	-

Approach%	97.7%	2.3%	0%	-	51.2%	48.8%	0%	-	3.1%	96.9%	0%	-	-	-
Totals %	47%	1.1%	0%	48.1%	1.7%	1.6%	0%	3.2%	1.5%	47.1%	0%	48.7%	-	-
Heavy	376	6	0	-	4	5	0	-	8	378	0	-	-	-
Heavy %	3.7%	2.4%	0%	-	1.1%	1.4%	0%	-	2.4%	3.7%	0%	-	-	-
Bicycles	1	0	0	-	0	0	0	-	1	1	0	-	-	-
Bicycle %	0%	0%	0%	-	0%	0%	0%	-	0.3%	0%	0%	-	-	-

Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (13.65 °C)

Start Time	E Approach DUNDAS ST W					S Approach ARGYLE ST					W Approach DUNDAS ST W					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
17:00:00	407	9	0	1	416	6	7	0	6	13	8	252	0	0	260	689
17:15:00	374	13	0	0	387	5	11	0	2	16	7	231	0	0	238	641
17:30:00	360	7	0	2	367	11	14	0	11	25	13	254	0	0	267	659
17:45:00	367	5	0	0	372	5	11	0	3	16	17	264	0	0	281	669
Grand Total	1508	34	0	3	1542	27	43	0	22	70	45	1001	0	0	1046	2658
Approach%	97.8%	2.2%	0%		-	38.6%	61.4%	0%		-	4.3%	95.7%	0%		-	-
Totals %	56.7%	1.3%	0%		58%	1%	1.6%	0%		2.6%	1.7%	37.7%	0%		39.4%	-
PHF	0.93	0.65	0		0.93	0.61	0.77	0		0.7	0.66	0.95	0		0.93	-
Heavy	18	0	0		18	0	0	0		0	0	22	0		22	-
Heavy %	1.2%	0%	0%		1.2%	0%	0%	0%		0%	0%	2.2%	0%		2.1%	-
Lights	1490	34	0		1524	27	43	0		70	45	979	0		1024	-
Lights %	98.8%	100%	0%		98.8%	100%	100%	0%		100%	100%	97.8%	0%		97.9%	-
Single-Unit Trucks	4	0	0		4	0	0	0		0	0	6	0		6	-
Single-Unit Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.6%	0%		0.6%	-
Buses	13	0	0		13	0	0	0		0	0	14	0		14	-
Buses %	0.9%	0%	0%		0.8%	0%	0%	0%		0%	0%	1.4%	0%		1.3%	-
Articulated Trucks	1	0	0		1	0	0	0		0	0	2	0		2	-
Articulated Trucks %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0.2%	0%		0.2%	-
Pedestrians	-	-	-	3	-	-	-	-	20	-	-	-	-	0	-	-
Pedestrians%	-	-	-	12%	-	-	-	-	80%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	8%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	1	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (13.65 °C)





Turning Movement Count (4 . DUNDAS ST W & CONFEDERATION PKWY)

Start Time	N Approach CONFEDERATION PKWY						E Approach DUNDAS ST W						S Approach CONFEDERATION PKWY						W Approach DUNDAS ST W						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:30:00	18	120	30	0	10	168	15	106	4	0	12	125	12	77	24	0	23	113	23	259	24	0	19	306	712		
07:45:00	11	117	40	0	9	168	9	82	6	0	13	97	5	96	26	0	9	127	33	254	38	0	8	325	717		
08:00:00	16	129	38	0	16	183	20	117	2	0	10	139	7	79	31	0	23	117	21	267	40	0	17	328	767		
08:15:00	19	139	39	0	14	197	20	126	4	0	5	150	6	80	34	0	13	120	31	229	29	0	12	289	756	2952	
08:30:00	24	103	35	0	17	162	24	149	5	0	9	178	8	96	41	0	12	145	33	229	28	0	22	290	775	3015	
08:45:00	21	144	37	0	8	202	29	134	3	0	8	166	6	106	32	0	11	144	39	291	27	0	10	357	869	3167	
09:00:00	17	140	44	0	10	201	25	105	10	0	4	140	16	116	37	0	14	169	33	199	23	0	24	255	765	3165	
09:15:00	21	73	37	0	15	131	23	123	8	0	12	154	3	92	32	0	30	127	33	246	28	0	21	307	719	3128	
BREAK																											
16:00:00	30	99	36	0	15	165	20	240	10	0	10	270	13	155	65	0	16	233	18	186	26	0	31	230	898		
16:15:00	29	127	31	0	13	187	31	275	7	0	13	313	8	153	73	0	19	234	29	180	26	0	32	235	969		
16:30:00	29	83	28	0	24	140	31	262	8	0	32	301	8	132	57	0	27	197	23	209	23	0	21	255	893		
16:45:00	31	121	31	0	23	183	29	249	5	0	17	283	12	121	68	1	31	202	28	191	24	0	26	243	911	3671	
17:00:00	37	89	38	0	21	164	34	289	7	0	16	330	21	148	70	0	16	239	26	196	27	0	13	249	982	3755	
17:15:00	45	118	47	0	9	210	34	275	6	0	14	315	9	118	63	0	24	190	32	200	29	0	13	261	976	3762	
17:30:00	45	122	27	0	13	194	32	268	6	0	13	306	13	120	65	0	21	198	26	179	32	0	18	237	935	3804	
17:45:00	36	95	36	0	30	167	40	279	14	1	21	334	11	113	65	0	27	189	30	201	34	0	17	265	955	3848	
Grand Total	429	1819	574	0	247	2822	416	3079	105	1	209	3601	158	1802	783	1	316	2744	458	3517	458	0	304	4432	13599	-	
Approach%	15.2%	64.5%	20.3%	0%		-	11.6%	85.5%	2.9%	0%		-	5.8%	65.7%	28.5%	0%		-	10.3%	79.4%	10.3%	0%		-	-	-	
Totals %	3.2%	13.4%	4.2%	0%		20.8%	3.1%	22.6%	0.8%	0%		26.5%	1.2%	13.3%	5.8%	0%		20.2%	3.4%	25.9%	3.4%	0%		32.6%	-	-	
Heavy	15	49	15	0		-	9	118	3	0		-	2	39	11	0		-	4	117	9	0		-	-	-	
Heavy %	3.5%	2.7%	2.6%	0%		-	2.2%	3.8%	2.9%	0%		-	1.3%	2.2%	1.4%	0%		-	0.9%	3.3%	2%	0%		-	-	-	
Bicycles	0	4	0	0		-	0	0	0	0		-	2	6	0	0		-	0	0	0	0		-	-	-	
Bicycle %	0%	0.2%	0%	0%		-	0%	0%	0%	0%		-	1.3%	0.3%	0%	0%		-	0%	0%	0%	0%		-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)

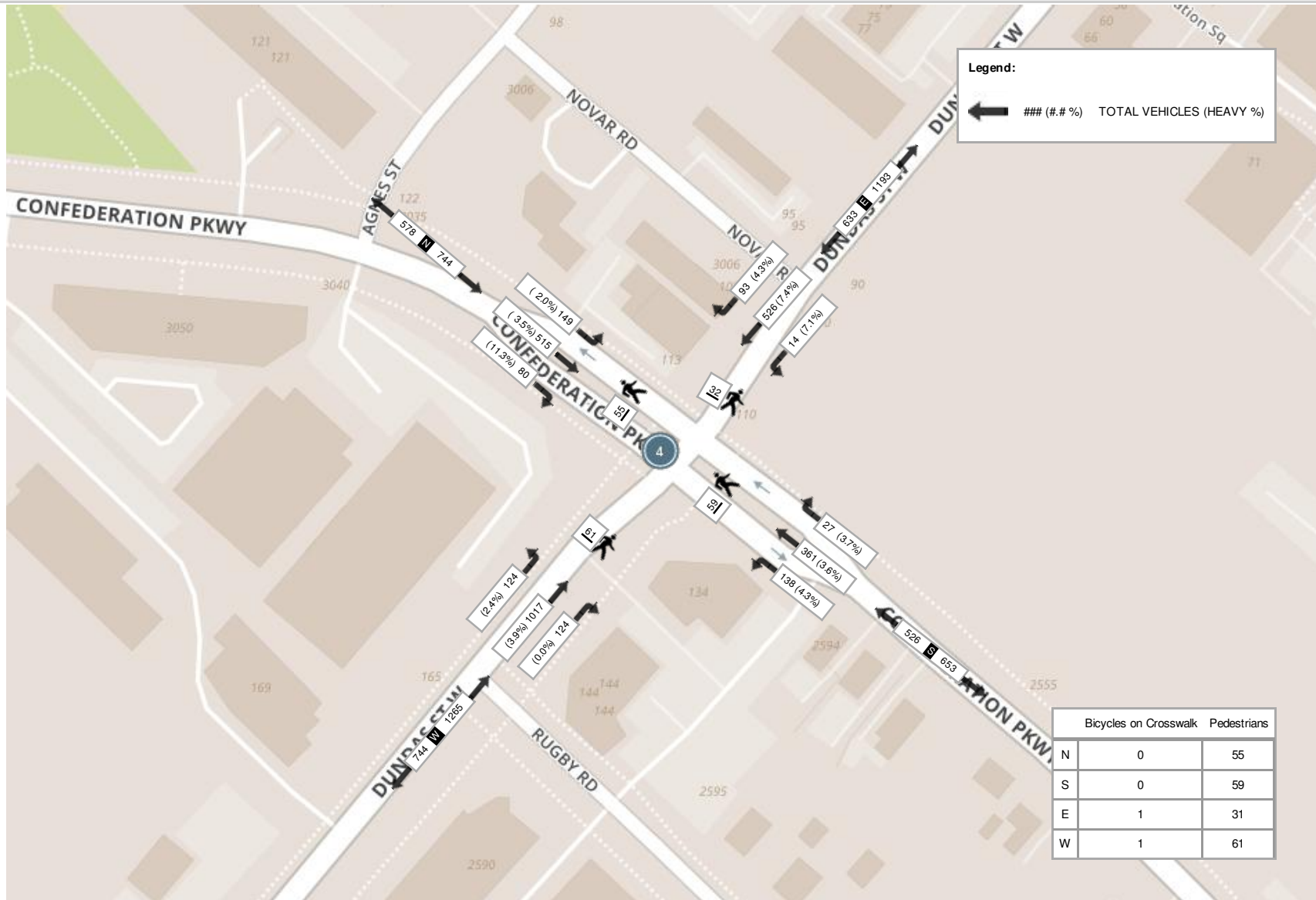
Start Time	N Approach CONFEDERATION PKWY						E Approach DUNDAS ST W						S Approach CONFEDERATION PKWY						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	16	129	38	0	16	183	20	117	2	0	10	139	7	79	31	0	23	117	21	267	40	0	17	328	767
08:15:00	19	139	39	0	14	197	20	126	4	0	5	150	6	80	34	0	13	120	31	229	29	0	12	289	756
08:30:00	24	103	35	0	17	162	24	149	5	0	9	178	8	96	41	0	12	145	33	229	28	0	22	290	775
08:45:00	21	144	37	0	8	202	29	134	3	0	8	166	6	106	32	0	11	144	39	291	27	0	10	357	869
Grand Total	80	515	149	0	55	744	93	526	14	0	32	633	27	361	138	0	59	526	124	1017	124	0	61	1264	3167
Approach%	10.8%	69.2%	20%	0%	-	-	14.7%	83.1%	2.2%	0%	-	-	5.1%	68.6%	26.2%	0%	-	-	9.8%	80.5%	9.8%	0%	-	-	-
Totals %	2.5%	16.3%	4.7%	0%	-	23.5%	2.9%	16.6%	0.4%	0%	-	20%	0.9%	11.4%	4.4%	0%	-	16.6%	3.9%	32.1%	3.9%	0%	-	39.9%	-
PHF	0.83	0.89	0.96	0	-	0.92	0.8	0.88	0.7	0	-	0.89	0.84	0.85	0.84	0	-	0.91	0.79	0.87	0.78	0	-	0.89	-
Heavy	9	18	3	0	-	30	4	39	1	0	-	44	1	13	6	0	-	20	0	40	3	0	-	43	-
Heavy %	11.3%	3.5%	2%	0%	-	4%	4.3%	7.4%	7.1%	0%	-	7%	3.7%	3.6%	4.3%	0%	-	3.8%	0%	3.9%	2.4%	0%	-	3.4%	-
Lights	71	497	146	0	-	714	89	487	13	0	-	589	26	348	132	0	-	506	124	976	121	0	-	1221	-
Lights %	88.8%	96.5%	98%	0%	-	96%	95.7%	92.6%	92.9%	0%	-	93%	96.3%	96.4%	95.7%	0%	-	96.2%	100%	96%	97.6%	0%	-	96.6%	-
Single-Unit Trucks	0	2	2	0	-	4	1	12	1	0	-	14	0	2	2	0	-	4	0	14	0	0	-	14	-
Single-Unit Trucks %	0%	0.4%	1.3%	0%	-	0.5%	1.1%	2.3%	7.1%	0%	-	2.2%	0%	0.6%	1.4%	0%	-	0.8%	0%	1.4%	0%	0%	-	1.1%	-
Buses	9	16	1	0	-	26	3	25	0	0	-	28	1	11	4	0	-	16	0	22	3	0	-	25	-
Buses %	11.3%	3.1%	0.7%	0%	-	3.5%	3.2%	4.8%	0%	0%	-	4.4%	3.7%	3%	2.9%	0%	-	3%	0%	2.2%	2.4%	0%	-	2%	-
Articulated Trucks	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	4	0	0	-	4	-
Articulated Trucks %	0%	0%	0%	0%	-	0%	0%	0.4%	0%	0%	-	0.3%	0%	0%	0%	0%	-	0%	0%	0.4%	0%	0%	-	0.3%	-
Pedestrians	-	-	-	-	55	-	-	-	-	-	31	-	-	-	-	-	59	-	-	-	-	-	61	-	-
Pedestrians%	-	-	-	-	26.4%	-	-	-	-	-	14.9%	-	-	-	-	-	28.4%	-	-	-	-	-	29.3%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0.5%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



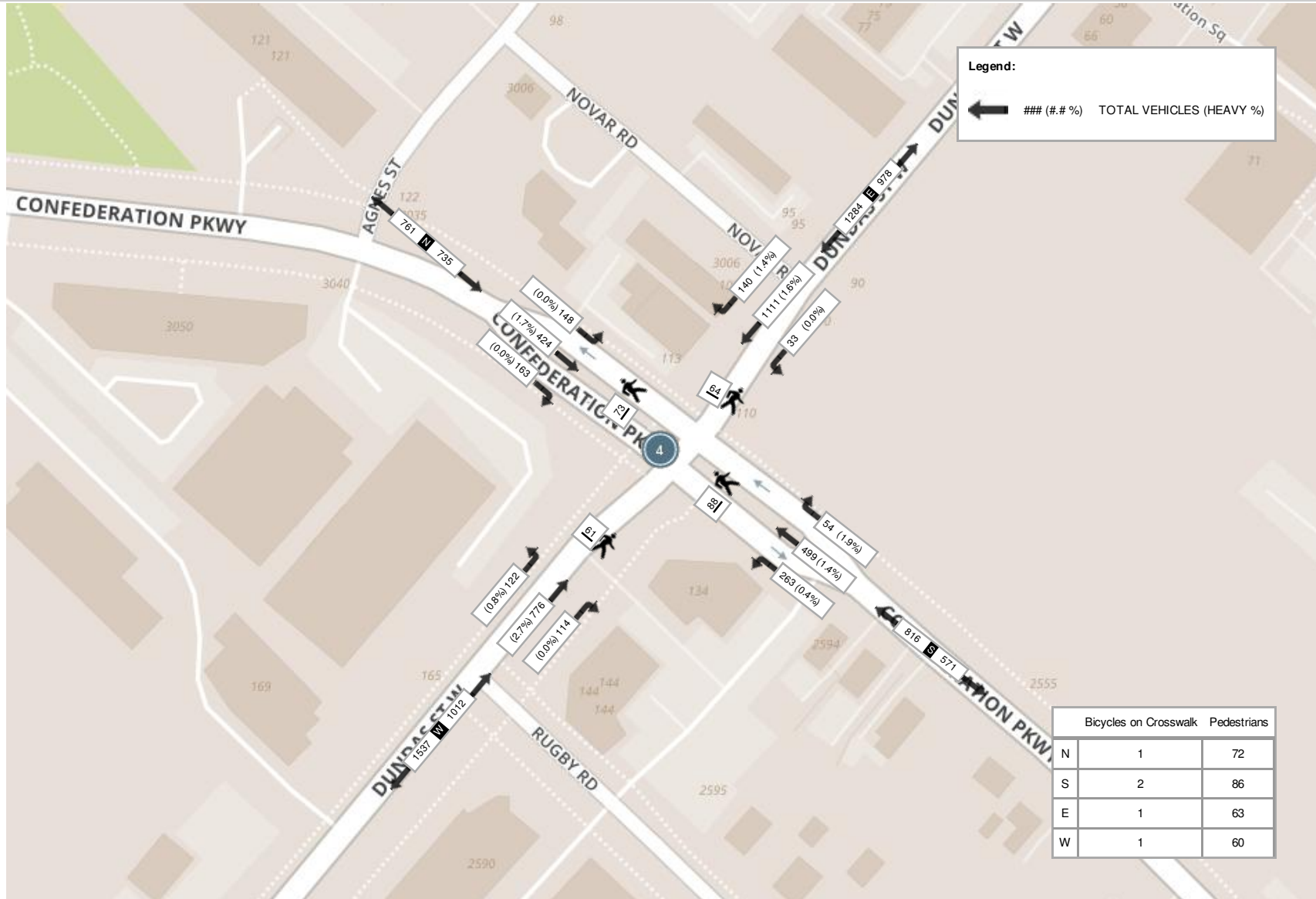
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach CONFEDERATION PKWY						E Approach DUNDAS ST W						S Approach CONFEDERATION PKWY						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	37	89	38	0	21	164	34	289	7	0	16	330	21	148	70	0	16	239	26	196	27	0	13	249	982
17:15:00	45	118	47	0	9	210	34	275	6	0	14	315	9	118	63	0	24	190	32	200	29	0	13	261	976
17:30:00	45	122	27	0	13	194	32	268	6	0	13	306	13	120	65	0	21	198	26	179	32	0	18	237	935
17:45:00	36	95	36	0	30	167	40	279	14	1	21	334	11	113	65	0	27	189	30	201	34	0	17	265	955
Grand Total	163	424	148	0	73	735	140	1111	33	1	64	1285	54	499	263	0	88	816	114	776	122	0	61	1012	3848
Approach%	22.2%	57.7%	20.1%	0%		-	10.9%	86.5%	2.6%	0.1%		-	6.6%	61.2%	32.2%	0%		-	11.3%	76.7%	12.1%	0%		-	-
Totals %	4.2%	11%	3.8%	0%		19.1%	3.6%	28.9%	0.9%	0%		33.4%	1.4%	13%	6.8%	0%		21.2%	3%	20.2%	3.2%	0%		26.3%	-
PHF	0.91	0.87	0.79	0		0.88	0.88	0.96	0.59	0.25		0.96	0.64	0.84	0.94	0		0.85	0.89	0.97	0.9	0		0.95	-
Heavy	0	7	0	0		7	2	18	0	0		20	1	7	1	0		9	0	21	1	0		22	-
Heavy %	0%	1.7%	0%	0%		1%	1.4%	1.6%	0%	0%		1.6%	1.9%	1.4%	0.4%	0%		1.1%	0%	2.7%	0.8%	0%		2.2%	-
Lights	163	417	148	0		728	138	1093	33	1		1265	53	492	262	0		807	114	755	121	0		990	-
Lights %	100%	98.3%	100%	0%		99%	98.6%	98.4%	100%	100%		98.4%	98.1%	98.6%	99.6%	0%		98.9%	100%	97.3%	99.2%	0%		97.8%	-
Single-Unit Trucks	0	0	0	0		0	2	4	0	0		6	1	1	0	0		2	0	7	0	0		7	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	1.4%	0.4%	0%	0%		0.5%	1.9%	0.2%	0%	0%		0.2%	0%	0.9%	0%	0%		0.7%	-
Buses	0	7	0	0		7	0	13	0	0		13	0	6	1	0		7	0	12	1	0		13	-
Buses %	0%	1.7%	0%	0%		1%	0%	1.2%	0%	0%		1%	0%	1.2%	0.4%	0%		0.9%	0%	1.5%	0.8%	0%		1.3%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	-
Pedestrians	-	-	-	-	72	-	-	-	-	-	63	-	-	-	-	-	86	-	-	-	-	-	60	-	-
Pedestrians%	-	-	-	-	25.2%	-	-	-	-	-	22%	-	-	-	-	-	30.1%	-	-	-	-	-	21%	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0.3%	-	-	-	-	-	0.3%	-	-	-	-	-	0.7%	-	-	-	-	-	0.3%	-	-
Bicycles on Road	0	1	0	0	0	-	0	0	0	0	0	-	1	2	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (1 . DUNDAS ST W & PARKERHILL RD)

Start Time	N Approach PARKERHILL RD						E Approach DUNDAS ST W						S Approach SOUTH DRIVEWAY						W Approach DUNDAS ST W						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:30:00	15	0	4	0	3	19	6	143	1	0	2	150	0	0	0	0	0	0	3	299	12	0	0	314	483		
07:45:00	10	0	10	0	4	20	9	119	0	0	3	128	1	0	0	0	1	1	0	322	15	0	0	337	486		
08:00:00	22	1	4	0	5	27	9	165	1	0	0	175	0	0	0	0	2	0	1	342	15	0	0	358	560		
08:15:00	13	0	3	0	3	16	9	151	1	0	0	161	0	0	0	0	4	0	1	305	15	0	0	321	498	2027	
08:30:00	21	0	4	0	6	25	9	216	1	0	0	226	1	0	0	0	0	1	2	279	10	0	0	291	543	2087	
08:45:00	25	0	11	0	2	36	4	171	4	0	2	179	0	0	1	0	6	1	8	362	14	0	1	384	600	2201	
09:00:00	14	0	4	0	3	18	9	159	10	0	2	178	1	1	0	0	3	2	9	283	8	0	3	300	498	2139	
09:15:00	13	0	7	0	6	20	10	158	13	0	3	181	1	0	3	0	9	4	11	272	10	0	2	293	498	2139	
BREAK																											
16:00:00	22	0	8	0	5	30	17	308	4	0	0	329	6	0	3	0	7	9	5	210	9	0	1	224	592		
16:15:00	15	1	13	0	3	29	25	371	4	0	2	400	5	1	8	0	5	14	3	247	9	0	4	259	702		
16:30:00	14	0	7	0	4	21	15	329	6	0	0	350	6	1	2	0	7	9	2	246	8	0	1	256	636		
16:45:00	20	1	13	0	7	34	13	345	2	0	4	360	6	1	4	0	3	11	2	236	9	0	0	247	652	2582	
17:00:00	20	0	6	0	5	26	15	390	6	0	0	411	4	0	7	1	9	12	2	249	10	0	3	261	710	2700	
17:15:00	27	0	10	0	4	37	14	375	1	0	3	390	4	0	5	0	3	9	6	231	12	0	5	249	685	2683	
17:30:00	14	2	10	0	3	26	12	391	4	0	4	407	3	4	2	0	11	9	1	267	8	0	2	276	718	2765	
17:45:00	21	0	12	0	3	33	11	376	3	0	0	390	5	0	5	0	3	10	2	276	9	0	3	287	720	2833	
Grand Total	286	5	126	0	66	417	187	4167	61	0	25	4415	43	8	40	1	73	92	58	4426	173	0	25	4657	9581	-	
Approach%	68.6%	1.2%	30.2%	0%		-	4.2%	94.4%	1.4%	0%		-	46.7%	8.7%	43.5%	1.1%		-	1.2%	95%	3.7%	0%		-	-	-	
Totals %	3%	0.1%	1.3%	0%		4.4%	2%	43.5%	0.6%	0%		46.1%	0.4%	0.1%	0.4%	0%		1%	0.6%	46.2%	1.8%	0%		48.6%	-	-	
Heavy	4	0	3	0		-	8	133	1	0		-	0	1	0	0		-	1	135	3	0		-	-	-	
Heavy %	1.4%	0%	2.4%	0%		-	4.3%	3.2%	1.6%	0%		-	0%	12.5%	0%	0%		-	1.7%	3.1%	1.7%	0%		-	-	-	
Bicycles	0	0	0	0		-	0	0	0	0		-	1	0	0	0		-	0	3	0	0		-	-	-	
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	2.3%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)

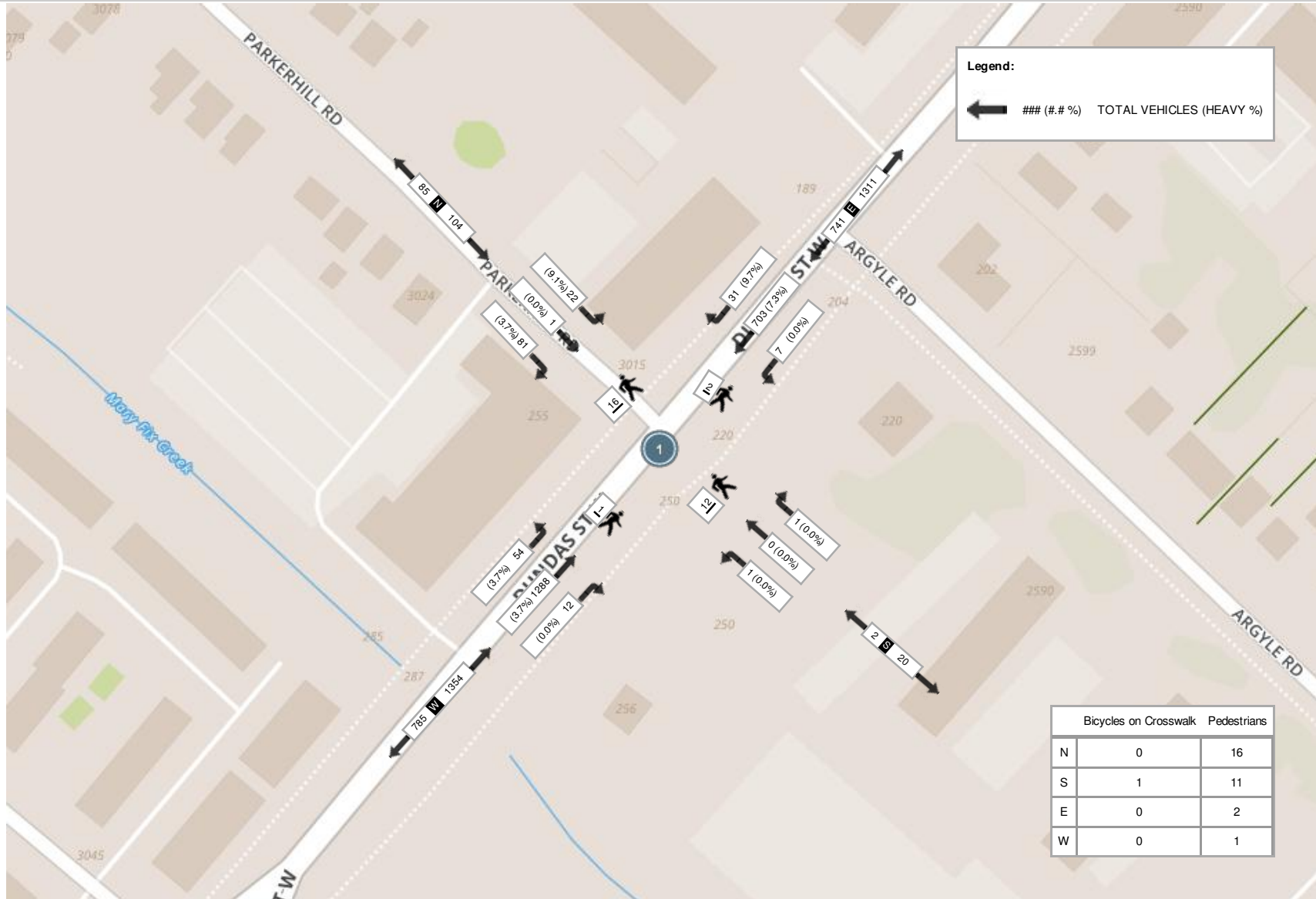
Start Time	N Approach PARKERHILL RD						E Approach DUNDAS ST W						S Approach SOUTH DRIVEWAY						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	22	1	4	0	5	27	9	165	1	0	0	175	0	0	0	0	2	0	1	342	15	0	0	358	560
08:15:00	13	0	3	0	3	16	9	151	1	0	0	161	0	0	0	0	4	0	1	305	15	0	0	321	498
08:30:00	21	0	4	0	6	25	9	216	1	0	0	226	1	0	0	0	0	1	2	279	10	0	0	291	543
08:45:00	25	0	11	0	2	36	4	171	4	0	2	179	0	0	1	0	6	1	8	362	14	0	1	384	600
Grand Total	81	1	22	0	16	104	31	703	7	0	2	741	1	0	1	0	12	2	12	1288	54	0	1	1354	2201
Approach%	77.9%	1%	21.2%	0%	-	-	4.2%	94.9%	0.9%	0%	-	-	50%	0%	50%	0%	-	-	0.9%	95.1%	4%	0%	-	-	-
Totals %	3.7%	0%	1%	0%	4.7%	1.4%	31.9%	0.3%	0%	33.7%	0%	0%	0%	0%	0.1%	0.5%	58.5%	2.5%	0%	61.5%	-	-	-	-	-
PHF	0.81	0.25	0.5	0	0.72	0.86	0.81	0.44	0	0.82	0.25	0	0.25	0	0.5	0.38	0.89	0.9	0	0.88	-	-	-	-	-
Heavy	3	0	2	0	5	3	51	0	0	54	0	0	0	0	0	0	48	2	0	50	-	-	-	-	-
Heavy %	3.7%	0%	9.1%	0%	4.8%	9.7%	7.3%	0%	0%	7.3%	0%	0%	0%	0%	0%	0%	3.7%	3.7%	0%	3.7%	-	-	-	-	-
Lights	78	1	20	0	99	28	652	7	0	687	1	0	1	0	2	12	1240	52	0	1304	-	-	-	-	-
Lights %	96.3%	100%	90.9%	0%	95.2%	90.3%	92.7%	100%	0%	92.7%	100%	0%	100%	0%	100%	100%	96.3%	96.3%	0%	96.3%	-	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	16	0	0	16	-	-	-	-	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	2.6%	0%	0%	2.4%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	1.2%	-	-	-	-	-
Buses	3	0	2	0	5	3	31	0	0	34	0	0	0	0	0	0	28	2	0	30	-	-	-	-	-
Buses %	3.7%	0%	9.1%	0%	4.8%	9.7%	4.4%	0%	0%	4.6%	0%	0%	0%	0%	0%	0%	2.2%	3.7%	0%	2.2%	-	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	-	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	-	-	-	-	-
Pedestrians	-	-	-	-	16	-	-	-	-	2	-	-	-	-	11	-	-	-	-	1	-	-	-	-	-
Pedestrians%	-	-	-	-	51.6%	-	-	-	-	6.5%	-	-	-	-	35.5%	-	-	-	-	3.2%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	3.2%	-	-	-	-	0%	-	-	-	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	2	0	0	-	-	-	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-



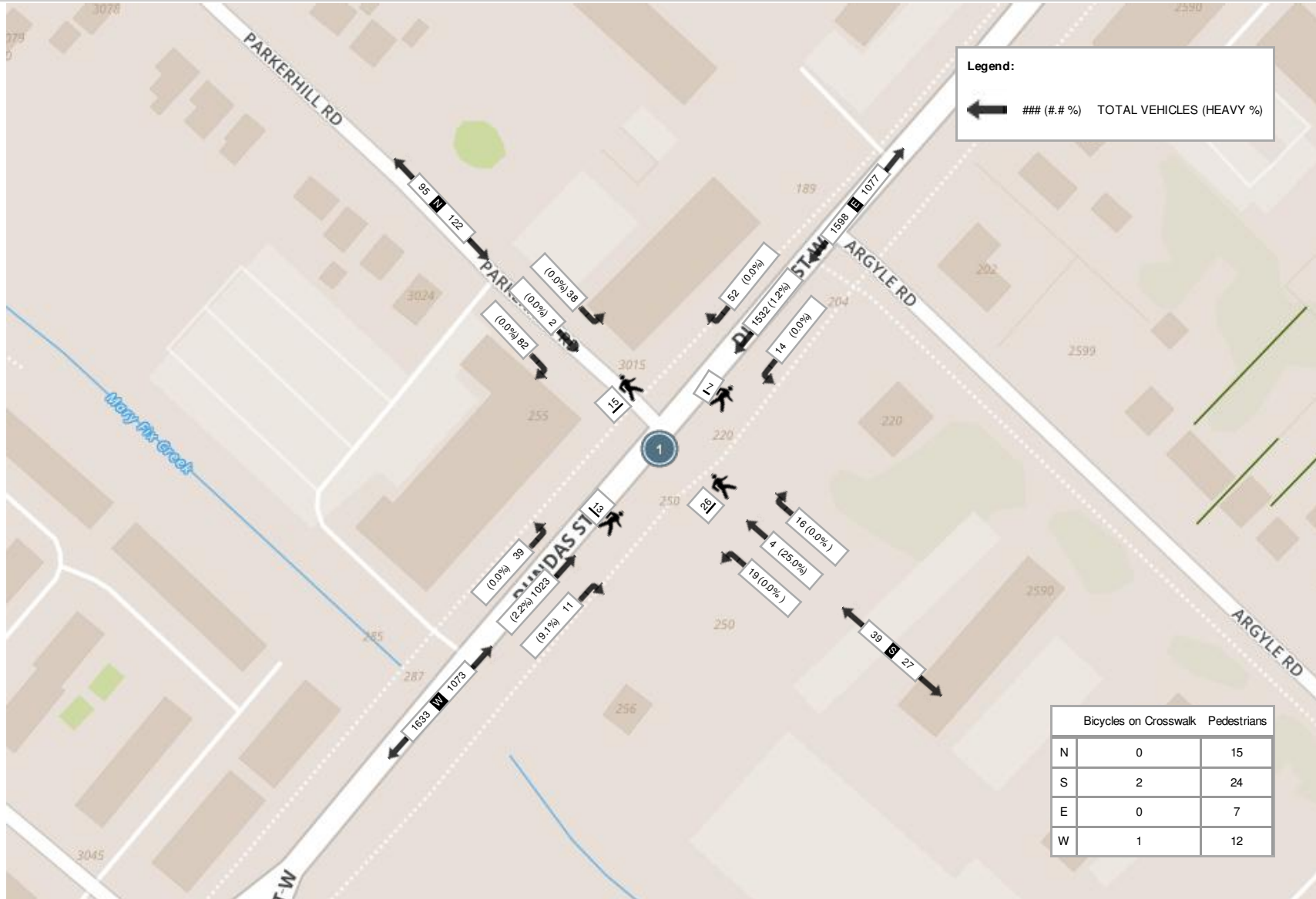
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach PARKERHILL RD						E Approach DUNDAS ST W						S Approach SOUTH DRIVEWAY						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	20	0	6	0	5	26	15	390	6	0	0	411	4	0	7	1	9	12	2	249	10	0	3	261	710
17:15:00	27	0	10	0	4	37	14	375	1	0	3	390	4	0	5	0	3	9	6	231	12	0	5	249	685
17:30:00	14	2	10	0	3	26	12	391	4	0	4	407	3	4	2	0	11	9	1	267	8	0	2	276	718
17:45:00	21	0	12	0	3	33	11	376	3	0	0	390	5	0	5	0	3	10	2	276	9	0	3	287	720
Grand Total	82	2	38	0	15	122	52	1532	14	0	7	1598	16	4	19	1	26	40	11	1023	39	0	13	1073	2833
Approach%	67.2%	1.6%	31.1%	0%	-	-	3.3%	95.9%	0.9%	0%	-	-	40%	10%	47.5%	2.5%	-	-	1%	95.3%	3.6%	0%	-	-	-
Totals %	2.9%	0.1%	1.3%	0%	4.3%	1.8%	54.1%	0.5%	0%	56.4%	0.6%	0.1%	0.7%	0%	1.4%	0.4%	36.1%	1.4%	0%	37.9%	-	-	-	-	-
PHF	0.76	0.25	0.79	0	0.82	0.87	0.98	0.58	0	0.97	0.8	0.25	0.68	0.25	0.83	0.46	0.93	0.81	0	0.93	-	-	-	-	-
Heavy	0	0	0	0	0	0	0	18	0	0	18	0	1	0	0	1	1	22	0	0	23	-	-	-	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	1.1%	0%	25%	0%	0%	2.5%	9.1%	2.2%	0%	0%	2.1%	-	-	-	-
Lights	82	2	38	0	122	52	1514	14	0	1580	16	3	19	1	39	10	1001	39	0	1050	-	-	-	-	-
Lights %	100%	100%	100%	0%	100%	100%	98.8%	100%	0%	98.9%	100%	75%	100%	100%	97.5%	90.9%	97.8%	100%	0%	97.9%	-	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	1	6	0	0	7	-	-	-	-	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0.1%	0%	0.1%	0%	25%	0%	0%	2.5%	9.1%	0.6%	0%	0%	0.7%	-	-	-	-	-
Buses	0	0	0	0	0	0	0	17	0	17	0	0	0	0	0	0	14	0	0	14	-	-	-	-	-
Buses %	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	1.1%	0%	0%	0%	0%	0%	0%	1.4%	0%	0%	1.3%	-	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	-	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	-	-	-	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	7	-	-	-	-	24	-	-	-	-	12	-	-	-	-	-
Pedestrians%	-	-	-	-	24.6%	-	-	-	-	11.5%	-	-	-	-	39.3%	-	-	-	-	19.7%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	3.3%	-	-	-	-	1.6%	-	-	-	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-	-	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)





Turning Movement Count (3 . DUNDAS ST W & RUGBY RD)

Start Time	N Approach NORTH DRIVEWAY						E Approach DUNDAS ST W						S Approach RUGBY RD						W Approach DUNDAS ST W						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:30:00	0	0	0	0	8	0	0	145	4	0	0	149	6	0	6	0	7	12	9	290	0	0	0	299	460		
07:45:00	0	0	0	0	2	0	3	113	0	0	0	116	8	0	5	0	6	13	9	345	3	0	1	357	486		
08:00:00	4	0	0	0	8	4	4	151	8	0	0	163	5	1	6	0	11	12	11	311	9	0	1	331	510		
08:15:00	2	0	2	0	10	4	10	164	2	0	0	176	1	0	2	0	4	3	3	288	5	0	0	296	479	1935	
08:30:00	6	0	0	0	9	6	7	208	4	0	0	219	6	0	7	0	11	13	8	299	5	0	0	312	550	2025	
08:45:00	1	0	0	0	6	1	8	176	2	0	0	186	3	0	4	0	9	7	12	340	6	0	0	358	552	2091	
09:00:00	6	0	0	0	11	6	3	155	9	0	2	167	6	0	8	0	7	14	14	263	12	0	4	289	476	2057	
09:15:00	5	0	1	0	7	6	5	171	2	0	0	178	10	0	7	0	12	17	8	285	9	0	2	302	503	2081	
BREAK																											
16:00:00	7	0	2	0	16	9	4	319	8	0	0	331	9	0	9	0	13	18	8	211	1	0	2	220	578		
16:15:00	7	0	1	0	10	8	2	373	5	0	0	380	7	0	7	0	13	14	10	256	4	0	2	270	672		
16:30:00	9	0	0	0	20	9	2	336	8	0	1	346	10	0	5	0	14	15	9	218	7	1	2	235	605		
16:45:00	1	0	0	0	19	1	1	333	6	0	0	340	4	0	7	0	12	11	12	247	4	0	0	263	615	2470	
17:00:00	11	1	0	0	12	12	5	396	4	0	3	405	10	0	7	0	7	17	8	258	5	0	0	271	705	2597	
17:15:00	7	0	1	0	5	8	4	371	7	0	0	382	9	0	7	0	7	16	13	235	1	0	1	249	655	2580	
17:30:00	6	0	1	0	15	7	4	374	7	0	0	385	7	0	4	0	11	11	7	248	4	0	1	259	662	2637	
17:45:00	7	0	2	0	7	9	2	371	6	0	0	379	7	1	9	0	25	17	11	238	6	0	1	255	660	2682	
Grand Total	79	1	10	0	165	90	64	4156	82	0	6	4302	108	2	100	0	169	210	152	4332	81	1	17	4566	9168	-	
Approach%	87.8%	1.1%	11.1%	0%	-	-	1.5%	96.6%	1.9%	0%	-	-	51.4%	1%	47.6%	0%	-	-	3.3%	94.9%	1.8%	0%	-	-	-	-	
Totals %	0.9%	0%	0.1%	0%	1%	1%	0.7%	45.3%	0.9%	0%	46.9%	1.2%	0%	1.1%	0%	2.3%	1.7%	47.3%	0.9%	0%	49.8%	-	-	-	-		
Heavy	0	0	0	0	-	-	0	147	1	0	-	-	2	0	0	0	-	-	3	132	0	0	-	-	-	-	
Heavy %	0%	0%	0%	0%	-	-	0%	3.5%	1.2%	0%	-	-	1.9%	0%	0%	0%	-	-	2%	3%	0%	0%	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)

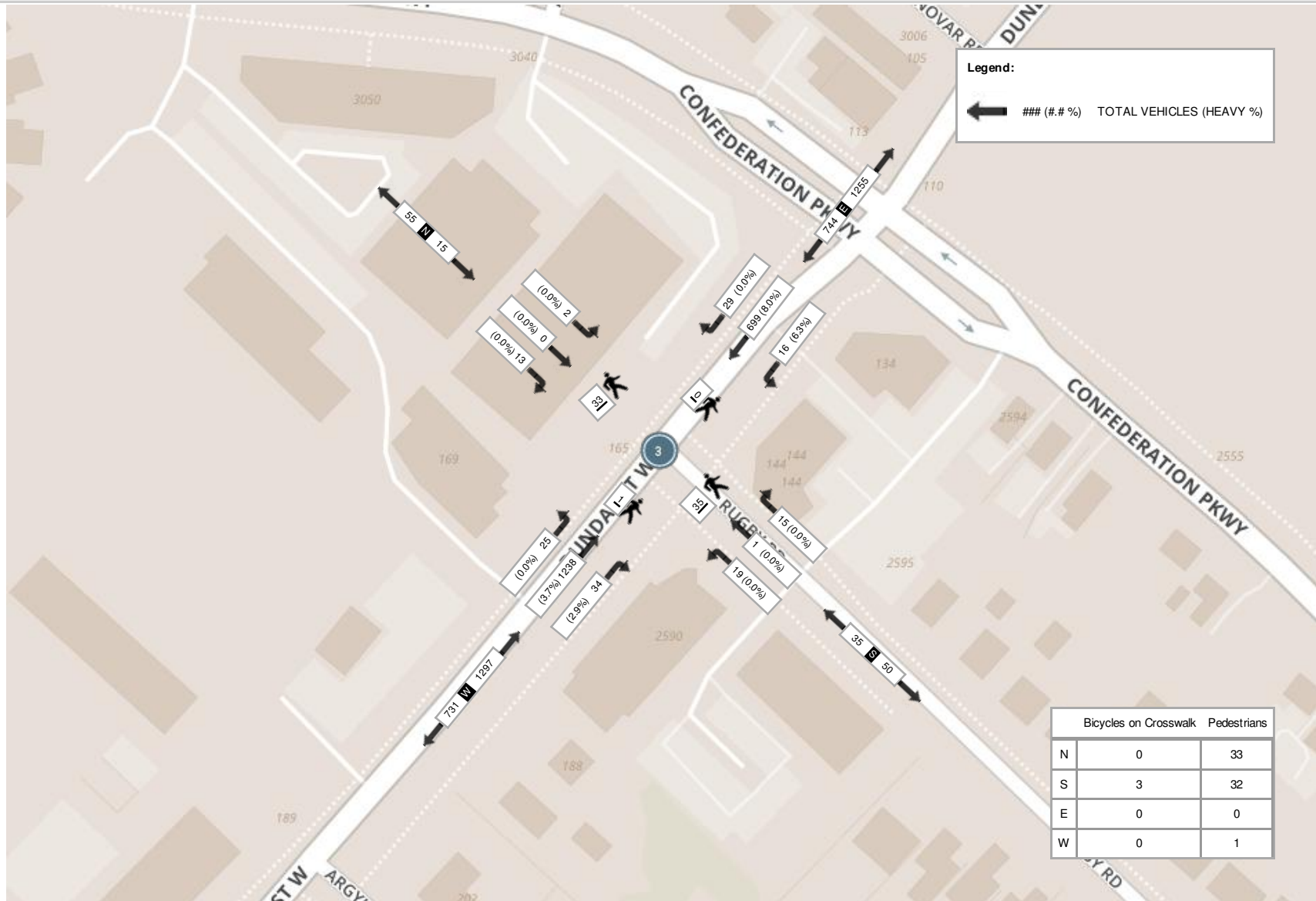
Start Time	N Approach NORTH DRIVEWAY						E Approach DUNDAS ST W						S Approach RUGBY RD						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	4	0	0	0	8	4	4	151	8	0	0	163	5	1	6	0	11	12	11	311	9	0	1	331	510
08:15:00	2	0	2	0	10	4	10	164	2	0	0	176	1	0	2	0	4	3	3	288	5	0	0	296	479
08:30:00	6	0	0	0	9	6	7	208	4	0	0	219	6	0	7	0	11	13	8	299	5	0	0	312	550
08:45:00	1	0	0	0	6	1	8	176	2	0	0	186	3	0	4	0	9	7	12	340	6	0	0	358	552
Grand Total	13	0	2	0	33	15	29	699	16	0	0	744	15	1	19	0	35	35	34	1238	25	0	1	1297	2091
Approach%	86.7%	0%	13.3%	0%	-	-	3.9%	94%	2.2%	0%	-	-	42.9%	2.9%	54.3%	0%	-	-	2.6%	95.5%	1.9%	0%	-	-	-
Totals %	0.6%	0%	0.1%	0%	0.7%	0.7%	1.4%	33.4%	0.8%	0%	35.6%	0.7%	0%	0.9%	0%	1.7%	1.6%	59.2%	1.2%	0%	62%	-	-	-	-
PHF	0.54	0	0.25	0	0.63	0.73	0.84	0.5	0	0.85	0.63	0.25	0.68	0	0.67	0.71	0.91	0.69	0	0.91	-	-	-	-	-
Heavy	0	0	0	0	0	0	0	56	1	0	57	0	0	0	0	0	0	0	1	46	0	0	47	-	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	8%	6.3%	0%	7.7%	0%	0%	0%	0%	0%	0%	0%	2.9%	3.7%	0%	0%	3.6%	-	-
Lights	13	0	2	0	15	29	643	15	0	687	15	1	19	0	35	33	1192	25	0	1250	-	-	-	-	-
Lights %	100%	0%	100%	0%	100%	100%	100%	92%	93.8%	0%	92.3%	100%	100%	100%	0%	100%	97.1%	96.3%	100%	0%	96.4%	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	0	0	14	0	0	14	-	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	2.3%	0%	0%	2.2%	0%	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	1.1%	-	-
Buses	0	0	0	0	0	0	0	38	1	0	39	0	0	0	0	0	0	0	1	26	0	0	27	-	-
Buses %	0%	0%	0%	0%	0%	0%	0%	5.4%	6.3%	0%	5.2%	0%	0%	0%	0%	0%	0%	0%	2.9%	2.1%	0%	0%	2.1%	-	-
Articulated Trucks	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	6	0	0	6	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0%	0%	0.5%	0%	0%	0.5%	-	-
Pedestrians	-	-	-	-	33	-	-	-	-	-	0	-	-	-	-	32	-	-	-	-	-	1	-	-	-
Pedestrians%	-	-	-	-	47.8%	-	-	-	-	-	0%	-	-	-	-	46.4%	-	-	-	-	-	1.4%	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	3	-	-	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	4.3%	-	-	-	-	-	0%	-	-	-



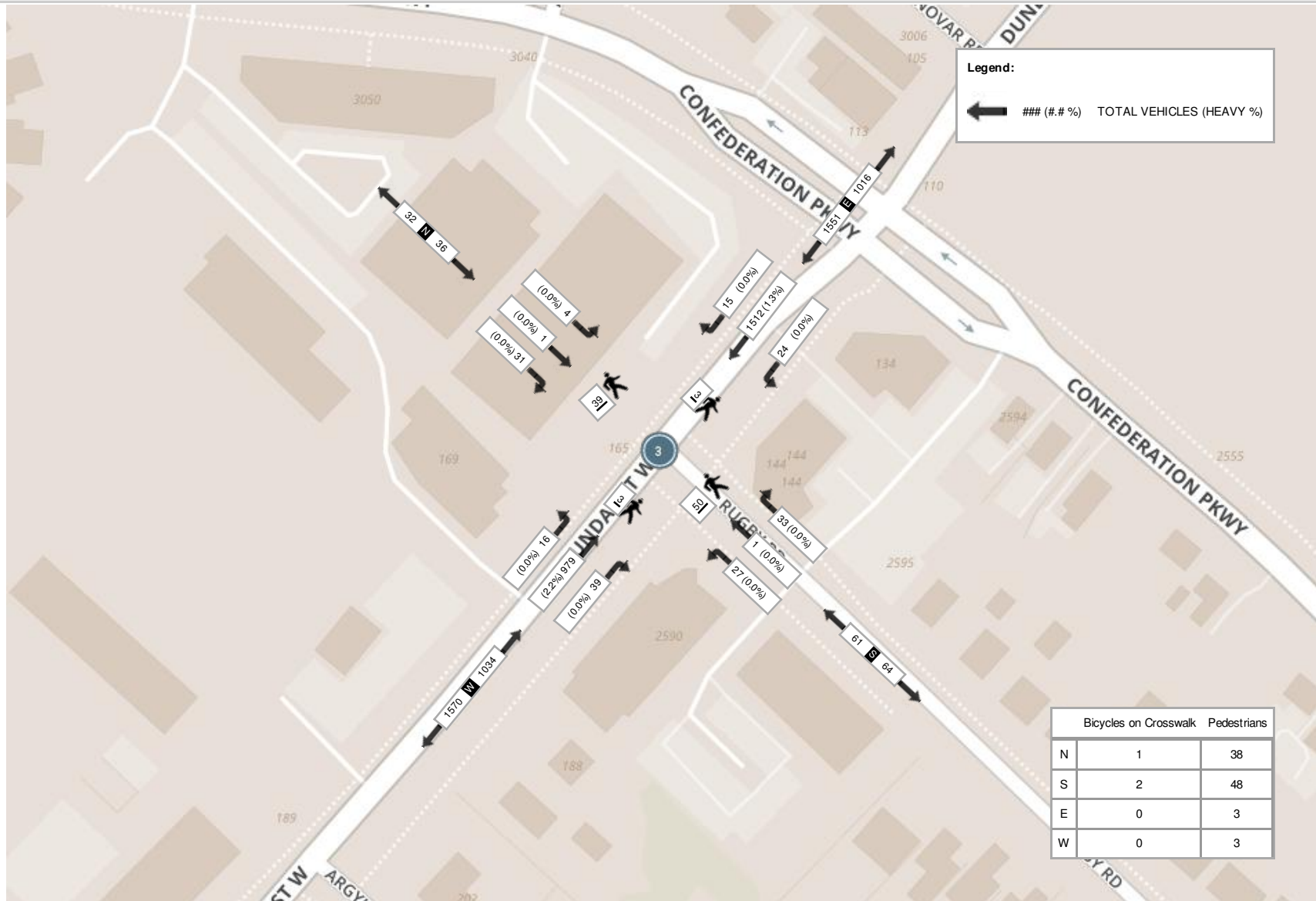
Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)

Start Time	N Approach NORTH DRIVEWAY						E Approach DUNDAS ST W						S Approach RUGBY RD						W Approach DUNDAS ST W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	11	1	0	0	12	12	5	396	4	0	3	405	10	0	7	0	7	17	8	258	5	0	0	271	705
17:15:00	7	0	1	0	5	8	4	371	7	0	0	382	9	0	7	0	7	16	13	235	1	0	1	249	655
17:30:00	6	0	1	0	15	7	4	374	7	0	0	385	7	0	4	0	11	11	7	248	4	0	1	259	662
17:45:00	7	0	2	0	7	9	2	371	6	0	0	379	7	1	9	0	25	17	11	238	6	0	1	255	660
Grand Total	31	1	4	0	39	36	15	1512	24	0	3	1551	33	1	27	0	50	61	39	979	16	0	3	1034	2682
Approach%	86.1%	2.8%	11.1%	0%	-	-	1%	97.5%	1.5%	0%	-	-	54.1%	1.6%	44.3%	0%	-	-	3.8%	94.7%	1.5%	0%	-	-	-
Totals %	1.2%	0%	0.1%	0%	1.3%	0.6%	56.4%	0.9%	0%	57.8%	1.2%	0%	1%	0%	2.3%	1.5%	36.5%	0.6%	0%	38.6%	-	-	-	-	-
PHF	0.7	0.25	0.5	0	0.75	0.75	0.95	0.86	0	0.96	0.83	0.25	0.75	0	0.9	0.75	0.95	0.67	0	0.95	-	-	-	-	-
Heavy	0	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	0	0	0	22	0	0	22	-	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	1.3%	0%	0%	1.3%	0%	0%	0%	0%	0%	0%	0%	0%	2.2%	0%	0%	2.1%	-	-
Lights	31	1	4	0	36	15	1492	24	0	1531	33	1	27	0	61	39	957	16	0	1012	-	-	-	-	-
Lights %	100%	100%	100%	0%	100%	100%	98.7%	100%	0%	98.7%	100%	100%	100%	0%	100%	100%	97.8%	100%	0%	97.9%	-	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	7	0	0	7	-	-	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0%	0%	0.7%	0%	0%	0.7%	-	-	-
Buses	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	0	0	13	0	0	13	-	-	-
Buses %	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1.3%	0%	0%	1.3%	-	-	-
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	-	-	-
Pedestrians	-	-	-	-	38	-	-	-	-	3	-	-	-	-	48	-	-	-	-	3	-	-	-	-	-
Pedestrians%	-	-	-	-	40%	-	-	-	-	3.2%	-	-	-	-	50.5%	-	-	-	-	3.2%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	1.1%	-	-	-	-	0%	-	-	-	-	2.1%	-	-	-	-	0%	-	-	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Rain (13.65 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Light Rain (14.93 °C)



APPENDIX E:

Signal Timing Plans



Signal Timing Report

Runtime: 2019-11-18 13:05:37

Device: 1505

Region: Mississauga		Signal ID: 1505		Location: DUNDAS STREET E at Parkerhill Road					
Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	8	0	0	0	0
Ped Clear	Sec	0	8	0	10	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	42	0	20	0	0	0	0
Maximum 2	Sec	0	42	0	20	0	0	0	0
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.0	0.0	2.5	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()
Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	158	45	82	0	0	0	0	0
Split	Split	1	2	3	0	0	0	0	0
Sequence	Sequence	1	1	1	0	0	0	0	0
Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	128	0	32	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	123	0	37	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	128	0	32	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	---A-----	---M-----	-----J-----
Day of Week	Bit	-MTWTF-	S-----	-----S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345 678901234567890 1	123456789012345 678901234567890 1	123456789012345 678901234567890 1	1----- ----- -----	-----8----- ----- -----	-----9----- ----- -----	-----0----- ----- -----	1----- ----- -----
Day Plan	Number	1	3	2	3	3	3	3	3
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A----	-----S--	-----O--	-----D	-----D	-----D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	---5----- -----	-2----- -----	-----4----- -----	5----- -----	6----- -----	4----- -----	0	0
Day Plan	Number	3	3	3	3	3	3	0	0
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0
TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Device: 1506

Region :	Mississauga	Signal ID:	1506	Location:	DUNDAS STREET E at Confederation Parkway				
Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	14	0	12	0	14	0	12
Ped Clear	Sec	0	29	0	25	0	29	0	25
Min Green	Sec	0	8	5	8	5	8	5	8
Passage	Sec	0.0	3.0	3.0	3.0	2.0	3.0	2.0	3.0
Maximum 1	Sec	0	35	10	30	10	35	15	30
Maximum 2	Sec	0	35	10	30	10	35	15	30
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	4.0	0.0	3.5	0.0	4.0	0.0	3.5
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	phaseNotOn	phaseNotOn
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det
[P2] Ring	Ring	0	1	1	1	2	2	2	2
[P2] Concurrency	Phase (,)	()	(5,6)	(7,8)	(7,8)	(2)	(2)	(3,4)	(3,4)
Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	32	50	64	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	94	13	53	14	80	15	51
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 2 - Time	Sec	0	88	14	58	0	88	21	51
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	94	13	53	14	80	21	45
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASON	JFMAMJJASOND	J-----	-F-----	---A-----	---M-----	----J----
Day of Week	Bit	-MTWTF-	Ŝ-----	-----S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345678901	123456789012345678901	123456789012345678901	1-----8-----9-----0-----	-----8-----9-----0-----	-----9-----0-----	-----0-----	1-----
Day Plan	Number	1	3	2	3	3	3	3	3
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A----	-----S---	-----O--	-----D	-----D	-----D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	---5-----	-2-----	-----4-----	5-----	-6-----	-4-----	0	0
Day Plan	Number	3	3	3	3	3	3	0	0
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0

Signal Timing Report

Runtime: 2019-11-18 13:10:13

Device: 1507

Region: Mississauga		Signal ID: 1507		Location: CONFEDERATION PARKWAY N at King Street					
Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	10	0	10	0	0	0	0
Ped Clear	Sec	0	14	0	13	0	0	0	0
Min Green	Sec	5	8	0	8	0	0	0	0
Passage	Sec	2.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	20	20	0	25	0	0	0	0
Maximum 2	Sec	20	20	0	25	0	0	0	0
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.0	0.0	2.5	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	1	1	0	1	0	0	0	0
[P2] Concurrency	Phase (.)	()	()	()	()	()	()	()	()
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	---A-----	---M-----	-----J----
Day of Week	Bit	-MTWTF-	S-----	-----S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345 678901234567890	123456789012345 678901234567890	123456789012345 678901234567890	1----- -----	-----8-----	-----9-----	-----0-----	1----- -----
Day Plan	Number	1	3	2	3	3	3	3	3
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A---	-----S---	-----O--	-----D	-----D	-----D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	---5----- -----	-2----- -----	-----4----- -----	-----5-----	-----6-----	-----4-----	0	0
Day Plan	Number	3	3	3	3	3	3	0	0
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	0	0	0	0	0	0	0
Plan 1 Minute	Min	0	0	0	0	0	0	0	0
Plan 1 Action	Number	8	0	0	0	0	0	0	0
Plan 2 Hour	Hour	0	0	0	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	0	0	0	0	0	0	0
Plan 3 Hour	Hour	0	0	0	0	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	0	0	0	0	0	0	0
TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

APPENDIX F: Synchro Worksheets



Queues

Existing AM

1: Private Driveway/Parkerhill Road & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	60	1419	5	805	22	87
v/c Ratio	0.11	0.48	0.02	0.28	0.30	0.51
Control Delay	2.4	3.3	5.4	8.9	82.2	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.4	3.3	5.4	8.9	82.2	23.8
Queue Length 50th (m)	2.3	43.8	0.6	60.7	7.3	0.0
Queue Length 95th (m)	5.6	62.1	m1.2	101.2	17.5	18.7
Internal Link Dist (m)		269.7		55.8		
Turn Bay Length (m)	45.0		60.0			
Base Capacity (vph)	533	2978	285	2867	206	316
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.48	0.02	0.28	0.11	0.28

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Private Driveway/Parkerhill Road & Dundas Street West

Existing AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1295	10	5	710	30	0	0	0	20	0	80
Future Volume (vph)	55	1295	10	5	710	30	0	0	0	20	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5					7.0		7.0
Lane Util. Factor	1.00	0.95		1.00	0.95					1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00					1.00		1.00
Flpb, ped/bikes	0.98	1.00		1.00	1.00					1.00		1.00
Frt	1.00	1.00		1.00	0.99					1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)	1694	3466		1796	3336					1656		1553
Flt Permitted	0.35	1.00		0.18	1.00					0.76		1.00
Satd. Flow (perm)	618	3466		331	3336					1320		1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	1408	11	5	772	33	0	0	0	22	0	87
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	82
Lane Group Flow (vph)	60	1419	0	5	804	0	0	0	0	22	0	5
Confl. Peds. (#/hr)	15		10	10		15						
Heavy Vehicles (%)	4%	4%	0%	0%	7%	10%	0%	0%	0%	9%	0%	4%
Turn Type	Perm	NA		Perm	NA					Perm		Perm
Protected Phases		4			8			2				
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	137.5	137.5		137.5	137.5					9.0		9.0
Effective Green, g (s)	137.5	137.5		137.5	137.5					9.0		9.0
Actuated g/C Ratio	0.86	0.86		0.86	0.86					0.06		0.06
Clearance Time (s)	6.5	6.5		6.5	6.5					7.0		7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)	531	2978		284	2866					74		87
v/s Ratio Prot		c0.41			0.24							
v/s Ratio Perm	0.10			0.02						c0.02		0.00
v/c Ratio	0.11	0.48		0.02	0.28					0.30		0.06
Uniform Delay, d1	1.8	2.7		1.6	2.1					72.5		71.5
Progression Factor	1.00	1.00		2.82	4.05					1.00		1.00
Incremental Delay, d2	0.4	0.5		0.1	0.2					2.2		0.3
Delay (s)	2.2	3.2		4.6	8.7					74.7		71.8
Level of Service	A	A		A	A					E		E
Approach Delay (s)		3.2			8.6			0.0			72.3	
Approach LOS		A			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			8.2			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			57.8%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Rugby Road/Plaza Driveway & Dundas Street West

Existing AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1240	35	15	700	30	20	0	15	0	0	15
Future Volume (Veh/h)	25	1240	35	15	700	30	20	0	15	0	0	15
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	26	1305	37	16	737	32	21	0	16	0	0	16
Pedestrians								35		35		
Lane Width (m)								3.6		3.6		
Walking Speed (m/s)								1.2		1.2		
Percent Blockage								3		3		
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh	2			2								
Upstream signal (m)	249			93								
pX, platoon unblocked	0.86			0.91			0.91	0.91	0.91	0.91	0.91	0.86
vC, conflicting volume	804			1377			1827	2246	706	1540	2249	420
vC1, stage 1 conf vol							1410	1410		820	820	
vC2, stage 2 conf vol							416	836		720	1429	
vCu, unblocked vol	456			1212			1253	1714	472	938	1717	10
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			86	100	97	100	100	98
cM capacity (veh/h)	935			484			156	193	479	343	179	900
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1			
Volume Total	26	870	472	16	491	278	21	16	16			
Volume Left	26	0	0	16	0	0	21	0	0			
Volume Right	0	0	37	0	0	32	0	16	16			
cSH	935	1700	1700	484	1700	1700	156	479	900			
Volume to Capacity	0.03	0.51	0.28	0.03	0.29	0.16	0.14	0.03	0.02			
Queue Length 95th (m)	0.7	0.0	0.0	0.8	0.0	0.0	3.6	0.8	0.4			
Control Delay (s)	9.0	0.0	0.0	12.7	0.0	0.0	31.7	12.8	9.1			
Lane LOS	A			B			D	B	A			
Approach Delay (s)	0.2			0.3			23.5		9.1			
Approach LOS							C		A			
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	52.1%			ICU Level of Service					A			
Analysis Period (min)	15											

3: Confederation Parkway & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	137	1252	16	681	154	396	27	165	566	88
v/c Ratio	0.35	0.77	0.08	0.51	0.50	0.29	0.04	0.59	0.55	0.20
Control Delay	27.5	46.4	18.9	36.6	31.5	29.9	0.2	58.1	49.8	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	46.4	18.9	36.6	31.5	29.9	0.2	58.1	49.8	11.9
Queue Length 50th (m)	26.6	185.5	2.7	93.2	24.6	35.4	0.0	44.9	79.7	2.9
Queue Length 95th (m)	44.3	251.5	6.6	111.8	36.5	44.8	m0.3	73.8	101.9	17.0
Internal Link Dist (m)		69.4		224.3		81.3			72.7	
Turn Bay Length (m)	35.0		40.0		50.0		10.0	55.0		10.0
Base Capacity (vph)	388	1624	197	1347	306	1876	822	427	1572	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.77	0.08	0.51	0.50	0.21	0.03	0.39	0.36	0.14

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

3: Confederation Parkway & Dundas Street West

Existing AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1015	125	15	525	95	140	360	25	150	515	80
Future Volume (vph)	125	1015	125	15	525	95	140	360	25	150	515	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	0.98	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1761	3399		1686	3274		1725	3471	1475	1730	3471	1327
Flt Permitted	0.29	1.00		0.12	1.00		0.27	1.00	1.00	0.52	1.00	1.00
Satd. Flow (perm)	541	3399		210	3274		498	3471	1475	944	3471	1327
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	137	1115	137	16	577	104	154	396	27	165	566	88
RTOR Reduction (vph)	0	4	0	0	8	0	0	0	17	0	0	54
Lane Group Flow (vph)	137	1248	0	16	673	0	154	396	10	165	566	34
Confl. Peds. (#/hr)	55		60	60		55	60		30	30		60
Heavy Vehicles (%)	2%	4%	0%	7%	7%	4%	4%	4%	4%	2%	4%	11%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	83.2	76.2		71.3	67.3		61.3	61.3	61.3	45.5	45.5	45.5
Effective Green, g (s)	83.2	76.2		71.3	67.3		61.3	61.3	61.3	45.5	45.5	45.5
Actuated g/C Ratio	0.52	0.48		0.45	0.42		0.38	0.38	0.38	0.28	0.28	0.28
Clearance Time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	379	1618		130	1377		288	1329	565	268	987	377
v/s Ratio Prot	c0.03	c0.37		0.00	0.21		c0.04	0.11			0.16	
v/s Ratio Perm	0.16			0.05			0.16		0.01	c0.17		0.03
v/c Ratio	0.36	0.77		0.12	0.49		0.53	0.30	0.02	0.62	0.57	0.09
Uniform Delay, d1	21.2	34.7		28.1	33.8		34.7	34.4	30.7	49.7	49.0	42.1
Progression Factor	1.33	1.19		1.00	1.00		0.88	0.89	0.15	1.00	1.00	1.00
Incremental Delay, d2	0.5	2.2		0.4	0.3		1.8	0.5	0.1	10.2	2.4	0.5
Delay (s)	28.8	43.5		28.5	34.1		32.4	31.1	4.7	59.8	51.4	42.5
Level of Service	C	D		C	C		C	C	A	E	D	D
Approach Delay (s)		42.1			34.0			30.2			52.1	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			40.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			123.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Argyle Road & North Site Access

Existing AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	5	0	65	40	5
Future Volume (Veh/h)	15	5	0	65	40	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	17	6	0	76	47	6
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	141	65	68			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	141	65	68			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	846	992	1527			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	23	76	53			
Volume Left	17	0	0			
Volume Right	6	0	6			
cSH	880	1527	1700			
Volume to Capacity	0.03	0.00	0.03			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	9.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.4				
Intersection Capacity Utilization		17.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Argyle Road & Central Site Access

Existing AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	15	10	45	40	5
Future Volume (Veh/h)	20	15	10	45	40	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	26	19	13	58	52	6
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	154	70	73			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154	70	73			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	99			
cM capacity (veh/h)	825	986	1520			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	45	71	58			
Volume Left	26	13	0			
Volume Right	19	0	6			
cSH	886	1520	1700			
Volume to Capacity	0.05	0.01	0.03			
Queue Length 95th (m)	1.3	0.2	0.0			
Control Delay (s)	9.3	1.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.3	1.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.0				
Intersection Capacity Utilization		19.6%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

6: Argyle Road & South Site Access

Existing AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	5	55	55	0
Future Volume (Veh/h)	0	10	5	55	55	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	12	6	67	67	0
Pedestrians	25					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	171	92	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	171	92	92			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	803	951	1484			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	73	67			
Volume Left	0	6	0			
Volume Right	12	0	0			
cSH	951	1484	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length 95th (m)	0.3	0.1	0.0			
Control Delay (s)	8.8	0.6	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.8	0.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.0				
Intersection Capacity Utilization		19.0%		ICU Level of Service		A
Analysis Period (min)		15				

7: Confederation Parkway & King Street West

09-01-2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	189	544	89	222	550
v/c Ratio	0.30	0.69	0.38	0.07	0.30	0.35
Control Delay	77.7	22.5	7.0	3.9	4.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	22.5	7.0	3.9	4.5	4.7
Queue Length 50th (m)	10.9	0.0	46.4	4.3	8.8	33.0
Queue Length 95th (m)	22.5	25.6	88.2	11.9	m19.1	39.9
Internal Link Dist (m)	84.6		81.2			86.7
Turn Bay Length (m)				10.0		
Base Capacity (vph)	287	406	1421	1200	810	1576
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.47	0.38	0.07	0.27	0.35

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Confederation Parkway & King Street West

Existing AM
09-01-2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	170	490	80	200	495
Future Volume (vph)	30	170	490	80	200	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1553	1827	1537	1765	1845
Flt Permitted	0.95	1.00	1.00	1.00	0.42	1.00
Satd. Flow (perm)	1805	1553	1827	1537	780	1845
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	189	544	89	222	550
RTOR Reduction (vph)	0	177	0	5	0	0
Lane Group Flow (vph)	33	12	544	84	222	550
Confl. Peds. (#/hr)	5			5	5	
Heavy Vehicles (%)	0%	4%	4%	1%	2%	3%
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	9.8	9.8	124.5	124.5	136.7	136.7
Effective Green, g (s)	9.8	9.8	124.5	124.5	136.7	136.7
Actuated g/C Ratio	0.06	0.06	0.78	0.78	0.85	0.85
Clearance Time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	110	95	1421	1195	723	1576
v/s Ratio Prot	c0.02		c0.30		0.02	c0.30
v/s Ratio Perm		0.01		0.05	0.24	
v/c Ratio	0.30	0.12	0.38	0.07	0.31	0.35
Uniform Delay, d1	71.8	71.0	5.6	4.2	2.5	2.4
Progression Factor	1.00	1.00	1.00	1.00	2.41	1.56
Incremental Delay, d2	1.5	0.6	0.8	0.1	0.2	0.6
Delay (s)	73.4	71.6	6.4	4.3	6.2	4.3
Level of Service	E	E	A	A	A	A
Approach Delay (s)	71.9		6.1			4.9
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			14.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			58.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

8: Confederation Parkway & Dunbar Road

Existing AM
09-01-2020

																																			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR																							
Lane Configurations																																			
Traffic Volume (veh/h)	10	0	100	0	0	5	60	555	0	0	510	15																							
Future Volume (Veh/h)	10	0	100	0	0	5	60	555	0	0	510	15																							
Sign Control		Stop			Stop			Free			Free																								
Grade		0%			0%			0%			0%																								
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87																							
Hourly flow rate (vph)	11	0	115	0	0	6	69	638	0	0	586	17																							
Pedestrians		10			20			5																											
Lane Width (m)		3.6			3.6			3.6																											
Walking Speed (m/s)		1.2			1.2			1.2																											
Percent Blockage		1			2			0																											
Right turn flare (veh)																																			
Median type								None			None																								
Median storage (veh)																																			
Upstream signal (m)											105																								
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94																												
vC, conflicting volume	1378	1392	601	1502	1409	658	613			658																									
vC1, stage 1 conf vol																																			
vC2, stage 2 conf vol																																			
vCu, unblocked vol	1370	1385	539	1502	1403	658	552			658																									
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1																									
tC, 2 stage (s)																																			
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2																									
p0 queue free %	88	100	77	100	100	99	93			100																									
cM capacity (veh/h)	95	123	503	66	119	460	954			924																									
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3																											
Volume Total	126	6	69	638	0	0	586	17																											
Volume Left	11	0	69	0	0	0	0	0																											
Volume Right	115	6	0	0	0	0	0	17																											
cSH	366	460	954	1700	1700	1700	1700	1700																											
Volume to Capacity	0.34	0.01	0.07	0.38	0.00	0.00	0.34	0.01																											
Queue Length 95th (m)	12.0	0.3	1.9	0.0	0.0	0.0	0.0	0.0																											
Control Delay (s)	19.9	12.9	9.1	0.0	0.0	0.0	0.0	0.0																											
Lane LOS	C	B	A																																
Approach Delay (s)	19.9	12.9	0.9																																
Approach LOS	C	B																																	
Intersection Summary																																			
Average Delay	2.2																																		
Intersection Capacity Utilization	56.4%																																		
Analysis Period (min)	15																																		
ICU Level of Service						B																													

HCM Unsignalized Intersection Capacity Analysis

9: Argyle Road & Dundas Street West

Existing AM
09-01-2020

							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations							
Traffic Volume (veh/h)	1285	30	20	710	35	40	
Future Volume (Veh/h)	1285	30	20	710	35	40	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	1382	32	22	763	38	43	
Pedestrians					15		
Lane Width (m)					3.6		
Walking Speed (m/s)					1.2		
Percent Blockage					1		
Right turn flare (veh)							
Median type	TWLT			TWLT			
Median storage veh	2			2			
Upstream signal (m)	80			262			
pX, platoon unblocked			0.90		0.95	0.90	
vC, conflicting volume			1429		1838	722	
vC1, stage 1 conf vol					1413		
vC2, stage 2 conf vol					426		
vCu, unblocked vol			1252		1296	466	
tC, single (s)			4.2		6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)			2.3		3.5	3.3	
p0 queue free %			95		82	91	
cM capacity (veh/h)			466		209	487	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	921	493	22	382	382	38	43
Volume Left	0	0	22	0	0	38	0
Volume Right	0	32	0	0	0	0	43
cSH	1700	1700	466	1700	1700	209	487
Volume to Capacity	0.54	0.29	0.05	0.22	0.22	0.18	0.09
Queue Length 95th (m)	0.0	0.0	1.2	0.0	0.0	5.2	2.3
Control Delay (s)	0.0	0.0	13.1	0.0	0.0	26.1	13.1
Lane LOS			B			D	B
Approach Delay (s)	0.0		0.4			19.2	
Approach LOS						C	
Intersection Summary							
Average Delay			0.8				
Intersection Capacity Utilization			46.5%		ICU Level of Service		A
Analysis Period (min)			15				

Queues

Existing PM

1: Private Driveway/Parkerhill Road & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBR
Lane Group Flow (vph)	41	1056	15	1612	40	41	82
v/c Ratio	0.18	0.35	0.04	0.54	0.32	0.38	0.50
Control Delay	4.6	3.1	4.9	13.4	54.9	80.9	32.1
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	4.6	3.1	4.9	13.8	54.9	80.9	32.1
Queue Length 50th (m)	1.9	31.1	1.2	165.4	8.1	13.4	5.2
Queue Length 95th (m)	5.9	45.9	m2.4	250.8	20.9	26.7	23.5
Internal Link Dist (m)		269.7		55.8	40.3		
Turn Bay Length (m)	45.0		60.0				
Base Capacity (vph)	222	2996	416	3012	271	252	295
Starvation Cap Reductn	0	0	0	791	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.04	0.73	0.15	0.16	0.28

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Private Driveway/Parkerhill Road & Dundas Street West

Existing PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1025	10	15	1530	50	20	5	15	40	0	80
Future Volume (vph)	40	1025	10	15	1530	50	20	5	15	40	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			7.0		7.0		7.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00		0.95
Flpb, ped/bikes	1.00	1.00		0.98	1.00			0.98		0.99		1.00
Frt	1.00	1.00		1.00	1.00			0.95		1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95		1.00
Satd. Flow (prot)	1797	3527		1760	3548			1657		1782		1532
Flt Permitted	0.14	1.00		0.26	1.00			0.98		0.86		1.00
Satd. Flow (perm)	260	3527		486	3548			1657		1616		1532
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	41	1046	10	15	1561	51	20	5	15	41	0	82
RTOR Reduction (vph)	0	0	0	0	1	0	0	14	0	0	0	62
Lane Group Flow (vph)	41	1056	0	15	1611	0	0	26	0	41	0	20
Confl. Peds. (#/hr)	15		25	25		15	15		5	5		15
Heavy Vehicles (%)	0%	2%	9%	0%	1%	0%	0%	25%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm		Perm
Protected Phases		4			8			2				
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	135.9	135.9		135.9	135.9			10.6		10.6		10.6
Effective Green, g (s)	135.9	135.9		135.9	135.9			10.6		10.6		10.6
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.07		0.07		0.07
Clearance Time (s)	6.5	6.5		6.5	6.5			7.0		7.0		7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	220	2995		412	3013			109		107		101
v/s Ratio Prot		0.30			c0.45							
v/s Ratio Perm	0.16			0.03				0.02		c0.03		0.01
v/c Ratio	0.19	0.35		0.04	0.53			0.24		0.38		0.20
Uniform Delay, d1	2.2	2.6		1.9	3.3			70.9		71.6		70.7
Progression Factor	1.00	1.00		2.09	3.63			1.00		1.00		1.00
Incremental Delay, d2	1.9	0.3		0.1	0.5			1.1		2.3		1.0
Delay (s)	4.0	2.9		4.0	12.6			72.0		73.8		71.7
Level of Service	A	A		A	B			E		E		E
Approach Delay (s)		3.0			12.5			72.0			72.4	
Approach LOS		A			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			12.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			78.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Rugby Road/Plaza Driveway & Dundas Street West

Existing PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	980	40	25	1510	15	25	0	35	5	0	30
Future Volume (Veh/h)	15	980	40	25	1510	15	25	0	35	5	0	30
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	16	1032	42	26	1589	16	26	0	37	5	0	32
Pedestrians	5			5			50			40		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	0			0			4			3		
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh	2			2								
Upstream signal (m)	249			93								
pX, platoon unblocked	0.69			0.95			0.72	0.72	0.95	0.72	0.72	0.69
vC, conflicting volume	1645			1124			2018	2832	592	2279	2845	848
vC1, stage 1 conf vol							1135	1135		1689	1689	
vC2, stage 2 conf vol							884	1697		590	1156	
vCu, unblocked vol	1050			1020			1310	2438	458	1671	2456	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			96			88	100	93	96	100	96
cM capacity (veh/h)	451			625			208	137	502	136	141	730
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1			
Volume Total	16	688	386	26	1059	546	26	37	37			
Volume Left	16	0	0	26	0	0	26	0	5			
Volume Right	0	0	42	0	0	16	0	37	32			
cSH	451	1700	1700	625	1700	1700	208	502	459			
Volume to Capacity	0.04	0.40	0.23	0.04	0.62	0.32	0.12	0.07	0.08			
Queue Length 95th (m)	0.9	0.0	0.0	1.0	0.0	0.0	3.4	1.9	2.1			
Control Delay (s)	13.3	0.0	0.0	11.0	0.0	0.0	24.7	12.7	13.5			
Lane LOS	B			B			C	B	B			
Approach Delay (s)	0.2			0.2			17.7		13.5			
Approach LOS							C		B			
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	57.0%			ICU Level of Service					B			
Analysis Period (min)	15											

Queues

Existing PM

3: Confederation Parkway & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	122	908	36	1276	270	510	56	153	434	168
v/c Ratio	0.50	0.52	0.10	0.79	0.89	0.44	0.11	0.76	0.51	0.41
Control Delay	26.4	34.6	16.1	40.8	64.0	38.0	5.9	78.7	54.0	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	34.6	16.1	40.8	64.0	38.0	5.9	78.7	54.0	29.1
Queue Length 50th (m)	21.4	122.0	4.5	179.1	54.6	56.7	0.3	49.1	68.4	26.5
Queue Length 95th (m)	36.9	163.5	12.4	#283.0	#66.9	62.3	m4.5	69.2	75.1	43.8
Internal Link Dist (m)		69.4		224.3		81.3			72.7	
Turn Bay Length (m)	35.0		40.0		50.0		10.0	55.0		10.0
Base Capacity (vph)	245	1741	350	1623	303	1932	799	382	1603	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.52	0.10	0.79	0.89	0.26	0.07	0.40	0.27	0.24

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

3: Confederation Parkway & Dundas Street West

Existing PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	775	115	35	1110	140	265	500	55	150	425	165
Future Volume (vph)	120	775	115	35	1110	140	265	500	55	150	425	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.99	1.00	1.00	0.96	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3401		1796	3447		1786	3574	1433	1730	3539	1472
Flt Permitted	0.09	1.00		0.25	1.00		0.34	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	174	3401		480	3447		633	3574	1433	845	3539	1472
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	122	791	117	36	1133	143	270	510	56	153	434	168
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	37	0	0	57
Lane Group Flow (vph)	122	903	0	36	1272	0	270	510	19	153	434	111
Confl. Peds. (#/hr)	75		90	90		75	60		65	65		60
Heavy Vehicles (%)	1%	3%	0%	0%	2%	1%	0%	1%	2%	0%	2%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	92.6	81.6		83.7	75.7		51.9	51.9	51.9	37.7	37.7	37.7
Effective Green, g (s)	92.6	81.6		83.7	75.7		51.9	51.9	51.9	37.7	37.7	37.7
Actuated g/C Ratio	0.58	0.51		0.52	0.47		0.32	0.32	0.32	0.24	0.24	0.24
Clearance Time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	1734		316	1630		286	1159	464	199	833	346
v/s Ratio Prot	c0.04	0.27		0.01	c0.37		c0.07	0.14			0.12	
v/s Ratio Perm	0.25			0.05			c0.24		0.01	0.18		0.08
v/c Ratio	0.51	0.52		0.11	0.78		0.94	0.44	0.04	0.77	0.52	0.32
Uniform Delay, d1	24.3	26.2		19.3	35.2		50.5	42.6	37.0	57.1	53.3	50.6
Progression Factor	1.21	1.19		1.00	1.00		0.87	0.89	0.76	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.3		0.2	2.5		35.0	1.1	0.1	24.4	2.3	2.4
Delay (s)	31.0	31.4		19.4	37.7		78.8	39.1	28.3	81.5	55.6	53.0
Level of Service	C	C		B	D		E	D	C	F	E	D
Approach Delay (s)		31.4			37.2			51.2			60.3	
Approach LOS		C			D			D			E	
Intersection Summary												
HCM 2000 Control Delay			43.1			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			124.2%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Argyle Road & North Site Access

Existing PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	5	75	65	10
Future Volume (Veh/h)	5	5	5	75	65	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	6	6	6	87	76	12
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	201	102	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	201	102	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	776	943	1470			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	93	88			
Volume Left	6	6	0			
Volume Right	6	0	12			
cSH	851	1470	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length 95th (m)	0.3	0.1	0.0			
Control Delay (s)	9.3	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.3	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		18.7%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Argyle Road & Central Site Access

Existing PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	10	15	65	55	15
Future Volume (Veh/h)	15	10	15	65	55	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	18	12	18	77	65	18
Pedestrians	20			5		
Lane Width (m)	3.6			3.6		
Walking Speed (m/s)	1.2			1.2		
Percent Blockage	2			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	207	99	103			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	207	99	103			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	763	942	1476			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	30	95	83			
Volume Left	18	18	0			
Volume Right	12	0	18			
cSH	826	1476	1700			
Volume to Capacity	0.04	0.01	0.05			
Queue Length 95th (m)	0.9	0.3	0.0			
Control Delay (s)	9.5	1.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	1.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		2.1				
Intersection Capacity Utilization		22.5%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

6: Argyle Road & South Site Access

Existing PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	0	75	60	5
Future Volume (Veh/h)	5	5	0	75	60	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	6	6	0	97	78	6
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	193	96	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193	96	99			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	790	954	1488			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	97	84			
Volume Left	6	0	0			
Volume Right	6	0	6			
cSH	865	1488	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length 95th (m)	0.3	0.0	0.0			
Control Delay (s)	9.2	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.2	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.6				
Intersection Capacity Utilization		17.4%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

Existing PM

7: Confederation Parkway & King Street West

09-01-2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	137	358	574	84	205	447
v/c Ratio	0.70	0.73	0.42	0.08	0.31	0.30
Control Delay	86.7	15.2	10.3	5.8	6.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.7	15.2	10.3	5.8	6.5	5.0
Queue Length 50th (m)	45.0	0.0	67.8	5.6	13.3	23.4
Queue Length 95th (m)	67.0	33.0	110.7	13.5	21.7	35.5
Internal Link Dist (m)	84.6		81.2			86.7
Turn Bay Length (m)				10.0		
Base Capacity (vph)	287	549	1361	1063	739	1503
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.65	0.42	0.08	0.28	0.30
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

7: Confederation Parkway & King Street West

Existing PM
09-01-2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	130	340	545	80	195	425
Future Volume (vph)	130	340	545	80	195	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	0.91	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1561	1863	1448	1774	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.39	1.00
Satd. Flow (perm)	1805	1561	1863	1448	725	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	358	574	84	205	447
RTOR Reduction (vph)	0	319	0	5	0	0
Lane Group Flow (vph)	137	39	574	79	205	447
Confl. Peds. (#/hr)	10	5		20	20	
Heavy Vehicles (%)	0%	1%	2%	1%	1%	2%
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	17.4	17.4	117.0	117.0	129.1	129.1
Effective Green, g (s)	17.4	17.4	117.0	117.0	129.1	129.1
Actuated g/C Ratio	0.11	0.11	0.73	0.73	0.81	0.81
Clearance Time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	169	1362	1058	644	1503
v/s Ratio Prot	c0.08		c0.31		c0.02	0.24
v/s Ratio Perm		0.02		0.05	0.24	
v/c Ratio	0.70	0.23	0.42	0.07	0.32	0.30
Uniform Delay, d1	68.8	65.2	8.4	6.1	4.5	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.84	1.04
Incremental Delay, d2	10.4	0.7	1.0	0.1	0.3	0.5
Delay (s)	79.2	65.9	9.3	6.2	8.5	4.6
Level of Service	E	E	A	A	A	A
Approach Delay (s)	69.6		8.9			5.8
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			24.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			62.7%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

8: Confederation Parkway & Dunbar Road

Existing PM
09-01-2020

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	15	0	55	0	0	0	70	610	5	0	515	40				
Future Volume (Veh/h)	15	0	55	0	0	0	70	610	5	0	515	40				
Sign Control		Stop			Stop			Free			Free					
Grade		0%			0%			0%			0%					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96				
Hourly flow rate (vph)	16	0	57	0	0	0	73	635	5	0	536	42				
Pedestrians		30			25											
Lane Width (m)		3.6			3.6											
Walking Speed (m/s)		1.2			1.2											
Percent Blockage		3			2											
Right turn flare (veh)																
Median type	None								None							
Median storage veh																
Upstream signal (m)												105				
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94									
vC, conflicting volume	1347	1377	566	1399	1414	660	608	665								
vC1, stage 1 conf vol																
vC2, stage 2 conf vol																
vCu, unblocked vol	1337	1369	507	1393	1409	660	552	665								
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1								
tC, 2 stage (s)																
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2								
p0 queue free %	85	100	89	100	100	100	92	100								
cM capacity (veh/h)	110	123	522	90	116	457	943	914								
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3								
Volume Total	73	0	73	635	5	0	536	42								
Volume Left	16	0	73	0	0	0	0	0								
Volume Right	57	0	0	0	5	0	0	42								
cSH	286	1700	943	1700	1700	1700	1700	1700								
Volume to Capacity	0.26	0.00	0.08	0.37	0.00	0.00	0.32	0.02								
Queue Length 95th (m)	7.9	0.0	2.0	0.0	0.0	0.0	0.0	0.0								
Control Delay (s)	21.8	0.0	9.1	0.0	0.0	0.0	0.0	0.0								
Lane LOS	C	A	A													
Approach Delay (s)	21.8	0.0	0.9													
Approach LOS	C	A														
Intersection Summary																
Average Delay			1.7													
Intersection Capacity Utilization			49.7%	ICU Level of Service					A							
Analysis Period (min)			15													

HCM Unsignalized Intersection Capacity Analysis

9: Argyle Road & Dundas Street West

Existing PM
09-01-2020

							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑↱		↱	↑↑	↱	↱	
Traffic Volume (veh/h)	1035	45	35	1550	45	25	
Future Volume (Veh/h)	1035	45	35	1550	45	25	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly flow rate (vph)	1078	47	36	1615	47	26	
Pedestrians				5	20		
Lane Width (m)				3.6	3.6		
Walking Speed (m/s)				1.2	1.2		
Percent Blockage				0	2		
Right turn flare (veh)							
Median type	TWLT			TWLT			
Median storage veh	2			2			
Upstream signal (m)	80			262			
pX, platoon unblocked			0.93		0.74	0.93	
vC, conflicting volume			1145		2001	588	
vC1, stage 1 conf vol					1122		
vC2, stage 2 conf vol					880		
vCu, unblocked vol			1015		1249	419	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)			2.2		3.5	3.3	
p0 queue free %			94		83	95	
cM capacity (veh/h)			635		279	539	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	719	406	36	808	808	47	26
Volume Left	0	0	36	0	0	47	0
Volume Right	0	47	0	0	0	0	26
cSH	1700	1700	635	1700	1700	279	539
Volume to Capacity	0.42	0.24	0.06	0.47	0.47	0.17	0.05
Queue Length 95th (m)	0.0	0.0	1.4	0.0	0.0	4.8	1.2
Control Delay (s)	0.0	0.0	11.0	0.0	0.0	20.5	12.0
Lane LOS			B			C	B
Approach Delay (s)	0.0		0.2			17.5	
Approach LOS						C	
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			54.4%		ICU Level of Service		A
Analysis Period (min)			15				



Lane Group	EBL	EBT	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	60	1538	5	897	22	87
v/c Ratio	0.12	0.52	0.02	0.31	0.30	0.51
Control Delay	2.5	3.6	5.4	9.2	82.2	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.5	3.6	5.4	9.2	82.2	23.8
Queue Length 50th (m)	2.3	50.6	0.5	62.4	7.3	0.0
Queue Length 95th (m)	5.7	71.1	m0.0	125.3	17.5	18.7
Internal Link Dist (m)		269.7		55.8		
Turn Bay Length (m)	45.0		60.0			
Base Capacity (vph)	484	2978	248	2869	206	316
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.52	0.02	0.31	0.11	0.28

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Private Driveway/Parkerhill Road & Dundas Street West

Future Background AM

09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1405	10	5	795	30	0	0	0	20	0	80
Future Volume (vph)	55	1405	10	5	795	30	0	0	0	20	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5					7.0		7.0
Lane Util. Factor	1.00	0.95		1.00	0.95					1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00					1.00		1.00
Flpb, ped/bikes	0.98	1.00		1.00	1.00					1.00		1.00
Frt	1.00	1.00		1.00	0.99					1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)	1700	3467		1798	3340					1656		1553
Flt Permitted	0.31	1.00		0.15	1.00					0.76		1.00
Satd. Flow (perm)	562	3467		288	3340					1320		1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	1527	11	5	864	33	0	0	0	22	0	87
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	82
Lane Group Flow (vph)	60	1538	0	5	896	0	0	0	0	22	0	5
Confl. Peds. (#/hr)	15		10	10		15						
Heavy Vehicles (%)	4%	4%	0%	0%	7%	10%	0%	0%	0%	9%	0%	4%
Turn Type	Perm	NA		Perm	NA					Perm		Perm
Protected Phases		4			8			2				
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	137.5	137.5		137.5	137.5					9.0		9.0
Effective Green, g (s)	137.5	137.5		137.5	137.5					9.0		9.0
Actuated g/C Ratio	0.86	0.86		0.86	0.86					0.06		0.06
Clearance Time (s)	6.5	6.5		6.5	6.5					7.0		7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)	482	2979		247	2870					74		87
v/s Ratio Prot		c0.44			0.27							
v/s Ratio Perm	0.11			0.02						c0.02		0.00
v/c Ratio	0.12	0.52		0.02	0.31					0.30		0.06
Uniform Delay, d1	1.8	2.8		1.6	2.2					72.5		71.5
Progression Factor	1.00	1.00		2.81	4.04					1.00		1.00
Incremental Delay, d2	0.5	0.6		0.1	0.3					2.2		0.3
Delay (s)	2.3	3.5		4.7	9.0					74.7		71.8
Level of Service	A	A		A	A					E		E
Approach Delay (s)		3.4			9.0			0.0			72.3	
Approach LOS		A			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			8.2			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			57.8%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Rugby Road/Plaza Driveway & Dundas Street West

Future Background AM

09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1355	35	15	780	30	20	0	15	0	0	15
Future Volume (Veh/h)	25	1355	35	15	780	30	20	0	15	0	0	15
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	26	1426	37	16	821	32	21	0	16	0	0	16
Pedestrians								35		35		
Lane Width (m)								3.6		3.6		
Walking Speed (m/s)								1.2		1.2		
Percent Blockage								3		3		
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh)	2			2								
Upstream signal (m)	249			93								
pX, platoon unblocked	0.84			0.89			0.90	0.90	0.89	0.90	0.90	0.84
vC, conflicting volume	888			1498			1990	2452	766	1685	2454	462
vC1, stage 1 conf vol							1532	1532		904	904	
vC2, stage 2 conf vol							458	920		781	1550	
vCu, unblocked vol	495			1309			1318	1831	486	979	1834	0
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			96			84	100	97	100	100	98
cM capacity (veh/h)	883			434			132	170	459	321	155	893
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1			
Volume Total	26	951	512	16	547	306	21	16	16			
Volume Left	26	0	0	16	0	0	21	0	0			
Volume Right	0	0	37	0	0	32	0	16	16			
cSH	883	1700	1700	434	1700	1700	132	459	893			
Volume to Capacity	0.03	0.56	0.30	0.04	0.32	0.18	0.16	0.03	0.02			
Queue Length 95th (m)	0.7	0.0	0.0	0.9	0.0	0.0	4.4	0.9	0.4			
Control Delay (s)	9.2	0.0	0.0	13.6	0.0	0.0	37.3	13.1	9.1			
Lane LOS	A			B			E	B	A			
Approach Delay (s)	0.2			0.3			26.8		9.1			
Approach LOS							D		A			
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	55.3%			ICU Level of Service					B			
Analysis Period (min)	15											

Queues
3: Confederation Parkway & Dundas Street West

Future Background AM
09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	137	1379	16	769	154	434	27	165	621	88
v/c Ratio	0.37	0.81	0.09	0.54	0.60	0.34	0.05	0.65	0.64	0.21
Control Delay	25.8	46.1	17.8	35.6	37.1	32.3	0.2	63.5	53.9	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	46.1	17.8	35.6	37.1	32.3	0.2	63.5	53.9	12.1
Queue Length 50th (m)	25.3	205.9	2.2	94.7	26.0	42.8	0.0	51.3	101.2	3.4
Queue Length 95th (m)	43.3	#298.3	6.8	132.7	36.1	48.1	m0.2	73.1	110.5	16.7
Internal Link Dist (m)		69.4		224.3		81.3			72.7	
Turn Bay Length (m)	35.0		40.0		50.0		10.0	55.0		10.0
Base Capacity (vph)	369	1698	180	1423	260	1876	822	413	1572	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.81	0.09	0.54	0.59	0.23	0.03	0.40	0.40	0.14

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

3: Confederation Parkway & Dundas Street West

Future Background AM

09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1130	125	15	605	95	140	395	25	150	565	80
Future Volume (vph)	125	1130	125	15	605	95	140	395	25	150	565	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.98	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3406		1686	3286		1728	3471	1475	1732	3471	1327
Flt Permitted	0.26	1.00		0.09	1.00		0.22	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	479	3406		164	3286		403	3471	1475	911	3471	1327
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	137	1242	137	16	665	104	154	434	27	165	621	88
RTOR Reduction (vph)	0	4	0	0	6	0	0	0	17	0	0	55
Lane Group Flow (vph)	137	1375	0	16	763	0	154	434	10	165	621	33
Confl. Peds. (#/hr)	55		60	60		55	60		30	30		60
Heavy Vehicles (%)	2%	4%	0%	7%	7%	4%	4%	4%	4%	2%	4%	11%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	86.6	79.6		74.8	70.8		57.9	57.9	57.9	42.9	42.9	42.9
Effective Green, g (s)	86.6	79.6		74.8	70.8		57.9	57.9	57.9	42.9	42.9	42.9
Actuated g/C Ratio	0.54	0.50		0.47	0.44		0.36	0.36	0.36	0.27	0.27	0.27
Clearance Time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	361	1694		114	1454		245	1256	533	244	930	355
v/s Ratio Prot	c0.03	c0.40		0.00	0.23		c0.05	0.13			0.18	
v/s Ratio Perm	0.17			0.06			0.18		0.01	c0.18		0.02
v/c Ratio	0.38	0.81		0.14	0.52		0.63	0.35	0.02	0.68	0.67	0.09
Uniform Delay, d1	20.0	33.9		27.5	32.4		37.6	37.2	32.8	52.3	52.2	44.0
Progression Factor	1.34	1.22		1.00	1.00		0.89	0.88	0.13	1.00	1.00	1.00
Incremental Delay, d2	0.6	2.8		0.6	0.3		4.6	0.7	0.1	14.1	3.8	0.5
Delay (s)	27.3	44.1		28.1	32.7		37.9	33.6	4.3	66.4	56.0	44.5
Level of Service	C	D		C	C		D	C	A	E	E	D
Approach Delay (s)		42.6			32.6			33.4			56.8	
Approach LOS		D			C			C			E	
Intersection Summary												
HCM 2000 Control Delay			42.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			123.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Argyle Road & North Site Access

Future Background AM

09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	5	0	85	50	5
Future Volume (Veh/h)	15	5	0	85	50	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	17	6	0	99	58	6
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	175	76	79			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	175	76	79			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	809	978	1513			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	23	99	64			
Volume Left	17	0	0			
Volume Right	6	0	6			
cSH	847	1513	1700			
Volume to Capacity	0.03	0.00	0.04			
Queue Length 95th (m)	0.7	0.0	0.0			
Control Delay (s)	9.4	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.4	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.2				
Intersection Capacity Utilization		17.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 5: Argyle Road & Central Site Access

Future Background AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	15	10	65	50	5
Future Volume (Veh/h)	20	15	10	65	50	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	26	19	13	84	65	6
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	193	83	86			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	193	83	86			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	99			
cM capacity (veh/h)	784	970	1504			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	45	97	71			
Volume Left	26	13	0			
Volume Right	19	0	6			
cSH	853	1504	1700			
Volume to Capacity	0.05	0.01	0.04			
Queue Length 95th (m)	1.3	0.2	0.0			
Control Delay (s)	9.5	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		2.5				
Intersection Capacity Utilization		20.6%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6: Argyle Road & South Site Access

Future Background AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	5	75	65	0
Future Volume (Veh/h)	0	10	5	75	65	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	12	6	91	79	0
Pedestrians	25					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	207	104	104			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	207	104	104			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	766	936	1469			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	97	79			
Volume Left	0	6	0			
Volume Right	12	0	0			
cSH	936	1469	1700			
Volume to Capacity	0.01	0.00	0.05			
Queue Length 95th (m)	0.3	0.1	0.0			
Control Delay (s)	8.9	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		19.0%		ICU Level of Service		A
Analysis Period (min)		15				

Queues
7: Confederation Parkway & King Street West

Future Background AM
09-01-2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	189	583	89	222	606
v/c Ratio	0.30	0.69	0.41	0.07	0.31	0.38
Control Delay	77.7	22.5	7.5	4.1	4.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	77.7	22.5	7.5	4.1	4.9	5.9
Queue Length 50th (m)	10.9	0.0	52.0	4.4	10.4	50.3
Queue Length 95th (m)	22.5	25.6	98.8	12.2	m18.7	51.8
Internal Link Dist (m)	84.6		81.2			86.7
Turn Bay Length (m)				10.0		
Base Capacity (vph)	287	406	1416	1196	781	1576
Starvation Cap Reductn	0	0	0	0	0	327
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.47	0.41	0.07	0.28	0.49

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Confederation Parkway & King Street West

Future Background AM

09-01-2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	170	525	80	200	545
Future Volume (vph)	30	170	525	80	200	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1553	1827	1537	1766	1845
Flt Permitted	0.95	1.00	1.00	1.00	0.40	1.00
Satd. Flow (perm)	1805	1553	1827	1537	741	1845
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	189	583	89	222	606
RTOR Reduction (vph)	0	177	0	4	0	0
Lane Group Flow (vph)	33	12	583	85	222	606
Confl. Peds. (#/hr)	5			5	5	
Heavy Vehicles (%)	0%	4%	4%	1%	2%	3%
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	9.8	9.8	124.1	124.1	136.7	136.7
Effective Green, g (s)	9.8	9.8	124.1	124.1	136.7	136.7
Actuated g/C Ratio	0.06	0.06	0.78	0.78	0.85	0.85
Clearance Time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	110	95	1417	1192	694	1576
v/s Ratio Prot	c0.02		c0.32		0.02	c0.33
v/s Ratio Perm		0.01		0.05	0.25	
v/c Ratio	0.30	0.12	0.41	0.07	0.32	0.38
Uniform Delay, d1	71.8	71.0	5.9	4.3	2.7	2.5
Progression Factor	1.00	1.00	1.00	1.00	2.59	1.82
Incremental Delay, d2	1.5	0.6	0.9	0.1	0.2	0.7
Delay (s)	73.4	71.6	6.8	4.4	7.2	5.3
Level of Service	E	E	A	A	A	A
Approach Delay (s)	71.9		6.5			5.8
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			14.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			60.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 8: Confederation Parkway & Dunbar Road

Future Background AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	105	0	0	5	60	590	0	0	560	15
Future Volume (Veh/h)	10	0	105	0	0	5	60	590	0	0	560	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	11	0	121	0	0	6	69	678	0	0	644	17
Pedestrians		10			20			5				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		1			2			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)											105	
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	1476	1490	659	1606	1507	698	671			698		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1474	1489	590	1615	1508	698	603			698		
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	74	100	100	99	92			100		
cM capacity (veh/h)	79	104	465	52	102	436	902			893		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	132	6	69	678	0	0	644	17				
Volume Left	11	0	69	0	0	0	0	0				
Volume Right	121	6	0	0	0	0	0	17				
cSH	330	436	902	1700	1700	1700	1700	1700				
Volume to Capacity	0.40	0.01	0.08	0.40	0.00	0.00	0.38	0.01				
Queue Length 95th (m)	14.9	0.3	2.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	23.0	13.4	9.3	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B	A									
Approach Delay (s)	23.0	13.4	0.9	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			58.6%	ICU Level of Service					B			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 9: Argyle Road & Dundas Street West

Future Background AM
09-01-2020

							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations							
Traffic Volume (veh/h)	1390	35	25	785	45	50	
Future Volume (Veh/h)	1390	35	25	785	45	50	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	1495	38	27	844	48	54	
Pedestrians						15	
Lane Width (m)						3.6	
Walking Speed (m/s)						1.2	
Percent Blockage						1	
Right turn flare (veh)							
Median type	TWLTL		TWLTL				
Median storage veh	2		2				
Upstream signal (m)	80		262				
pX, platoon unblocked			0.88		0.93	0.88	
vC, conflicting volume			1548		2005	782	
vC1, stage 1 conf vol					1529		
vC2, stage 2 conf vol					476		
vCu, unblocked vol			1354		1366	485	
tC, single (s)			4.2		6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)			2.3		3.5	3.3	
p0 queue free %			94		74	88	
cM capacity (veh/h)			417		182	465	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	997	536	27	422	422	48	54
Volume Left	0	0	27	0	0	48	0
Volume Right	0	38	0	0	0	0	54
cSH	1700	1700	417	1700	1700	182	465
Volume to Capacity	0.59	0.32	0.06	0.25	0.25	0.26	0.12
Queue Length 95th (m)	0.0	0.0	1.7	0.0	0.0	8.1	3.1
Control Delay (s)	0.0	0.0	14.2	0.0	0.0	31.8	13.8
Lane LOS			B			D	B
Approach Delay (s)	0.0		0.4			22.2	
Approach LOS						C	
Intersection Summary							
Average Delay			1.1				
Intersection Capacity Utilization			49.6%	ICU Level of Service		A	
Analysis Period (min)			15				



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBR
Lane Group Flow (vph)	41	1173	15	1745	40	41	82
v/c Ratio	0.22	0.39	0.04	0.58	0.32	0.38	0.55
Control Delay	5.6	3.3	5.1	14.3	54.9	80.9	43.7
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	5.6	3.3	5.1	14.9	54.9	80.9	43.7
Queue Length 50th (m)	2.0	36.3	1.1	190.8	8.1	13.4	9.8
Queue Length 95th (m)	6.4	53.0	m2.5	m267.2	20.9	26.7	28.5
Internal Link Dist (m)		269.7		55.8	40.3		
Turn Bay Length (m)	45.0		60.0				
Base Capacity (vph)	188	2996	366	3016	271	252	283
Starvation Cap Reductn	0	0	0	754	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.39	0.04	0.77	0.15	0.16	0.29

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Private Driveway/Parkerhill Road & Dundas Street West

Future Background PM

09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1140	10	15	1660	50	20	5	15	40	0	80
Future Volume (vph)	40	1140	10	15	1660	50	20	5	15	40	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			7.0		7.0		7.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00		0.95
Flpb, ped/bikes	1.00	1.00		0.98	1.00			0.98		0.99		1.00
Frt	1.00	1.00		1.00	1.00			0.95		1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95		1.00
Satd. Flow (prot)	1805	3528		1769	3550			1657		1782		1532
Flt Permitted	0.12	1.00		0.23	1.00			0.98		0.86		1.00
Satd. Flow (perm)	221	3528		429	3550			1657		1616		1532
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	41	1163	10	15	1694	51	20	5	15	41	0	82
RTOR Reduction (vph)	0	0	0	0	1	0	0	14	0	0	0	49
Lane Group Flow (vph)	41	1173	0	15	1744	0	0	26	0	41	0	33
Confl. Peds. (#/hr)	15		25	25		15	15		5	5		15
Heavy Vehicles (%)	0%	2%	9%	0%	1%	0%	0%	25%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm		Perm
Protected Phases		4			8			2				
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	135.9	135.9		135.9	135.9			10.6		10.6		10.6
Effective Green, g (s)	135.9	135.9		135.9	135.9			10.6		10.6		10.6
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.07		0.07		0.07
Clearance Time (s)	6.5	6.5		6.5	6.5			7.0		7.0		7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	187	2996		364	3015			109		107		101
v/s Ratio Prot		0.33			c0.49							
v/s Ratio Perm	0.19			0.03				0.02		c0.03		0.02
v/c Ratio	0.22	0.39		0.04	0.58			0.24		0.38		0.33
Uniform Delay, d1	2.2	2.7		1.9	3.6			70.9		71.6		71.3
Progression Factor	1.00	1.00		2.12	3.61			1.00		1.00		1.00
Incremental Delay, d2	2.7	0.4		0.1	0.5			1.1		2.3		1.9
Delay (s)	4.9	3.1		4.1	13.4			72.0		73.8		73.2
Level of Service	A	A		A	B			E		E		E
Approach Delay (s)		3.2			13.3			72.0			73.4	
Approach LOS		A			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			12.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			82.5%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Rugby Road/Plaza Driveway & Dundas Street West

Future Background PM

09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1090	40	25	1645	15	25	0	35	5	0	30
Future Volume (Veh/h)	15	1090	40	25	1645	15	25	0	35	5	0	30
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	16	1147	42	26	1732	16	26	0	37	5	0	32
Pedestrians	5			5			50			40		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	0			0			4			3		
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh	2			2								
Upstream signal (m)	249			93								
pX, platoon unblocked	0.64			0.93			0.67	0.67	0.93	0.67	0.67	0.64
vC, conflicting volume	1788			1239			2205	3090	650	2480	3103	919
vC1, stage 1 conf vol							1250	1250		1832	1832	
vC2, stage 2 conf vol							955	1840		648	1271	
vCu, unblocked vol	1097			1112			1363	2684	480	1773	2703	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			95			86	100	92	96	100	95
cM capacity (veh/h)	396			568			180	117	478	116	121	669
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1			
Volume Total	16	765	424	26	1155	593	26	37	37			
Volume Left	16	0	0	26	0	0	26	0	5			
Volume Right	0	0	42	0	0	16	0	37	32			
cSH	396	1700	1700	568	1700	1700	180	478	407			
Volume to Capacity	0.04	0.45	0.25	0.05	0.68	0.35	0.14	0.08	0.09			
Queue Length 95th (m)	1.0	0.0	0.0	1.1	0.0	0.0	4.0	2.0	2.4			
Control Delay (s)	14.5	0.0	0.0	11.6	0.0	0.0	28.4	13.2	14.7			
Lane LOS	B			B			D	B	B			
Approach Delay (s)	0.2			0.2			19.4		14.7			
Approach LOS							C		B			
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	60.7%			ICU Level of Service					B			
Analysis Period (min)	15											

3: Confederation Parkway & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	122	1020	36	1413	270	561	56	153	480	168
v/c Ratio	0.60	0.59	0.12	0.87	0.95	0.47	0.11	0.77	0.55	0.40
Control Delay	38.6	36.3	17.0	45.7	73.8	38.0	5.7	79.8	54.1	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	36.3	17.0	45.7	73.8	38.0	5.7	79.8	54.1	28.2
Queue Length 50th (m)	20.8	140.2	4.6	212.2	50.3	59.5	0.2	48.9	75.7	26.1
Queue Length 95th (m)	46.4	183.4	12.7	#336.9	#73.0	67.7	m4.9	69.0	81.7	43.0
Internal Link Dist (m)		69.4		224.3		81.3			72.7	
Turn Bay Length (m)	35.0		40.0		50.0		10.0	55.0		10.0
Base Capacity (vph)	205	1727	304	1619	285	1932	799	365	1603	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.59	0.12	0.87	0.95	0.29	0.07	0.42	0.30	0.24

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

3: Confederation Parkway & Dundas Street West

Future Background PM

09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	885	115	35	1245	140	265	550	55	150	470	165
Future Volume (vph)	120	885	115	35	1245	140	265	550	55	150	470	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	0.96	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3412		1799	3456		1790	3574	1433	1735	3539	1472
Flt Permitted	0.06	1.00		0.21	1.00		0.30	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	108	3412		389	3456		570	3574	1433	807	3539	1472
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	122	903	117	36	1270	143	270	561	56	153	480	168
RTOR Reduction (vph)	0	4	0	0	4	0	0	0	37	0	0	57
Lane Group Flow (vph)	122	1016	0	36	1409	0	270	561	19	153	480	111
Confl. Peds. (#/hr)	75		90	90		75	60		65	65		60
Heavy Vehicles (%)	1%	3%	0%	0%	2%	1%	0%	1%	2%	0%	2%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	91.8	80.8		83.4	75.4		52.7	52.7	52.7	38.7	38.7	38.7
Effective Green, g (s)	91.8	80.8		83.4	75.4		52.7	52.7	52.7	38.7	38.7	38.7
Actuated g/C Ratio	0.57	0.50		0.52	0.47		0.33	0.33	0.33	0.24	0.24	0.24
Clearance Time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	1723		273	1628		271	1177	471	195	855	356
v/s Ratio Prot	c0.05	0.30		0.01	c0.41		c0.07	0.16			0.14	
v/s Ratio Perm	0.29			0.06			c0.26		0.01	0.19		0.08
v/c Ratio	0.60	0.59		0.13	0.87		1.00	0.48	0.04	0.78	0.56	0.31
Uniform Delay, d1	33.7	27.9		20.1	37.8		51.2	42.7	36.5	56.8	53.2	49.7
Progression Factor	0.99	1.15		1.00	1.00		0.86	0.89	0.76	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.5		0.2	5.1		49.3	1.2	0.1	26.4	2.7	2.3
Delay (s)	38.2	32.6		20.3	42.9		93.5	39.3	27.8	83.2	55.9	52.0
Level of Service	D	C		C	D		F	D	C	F	E	D
Approach Delay (s)		33.2			42.3			55.1			60.3	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			45.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			127.7%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Argyle Road & North Site Access

Future Background PM

09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	5	85	85	10
Future Volume (Veh/h)	5	5	5	85	85	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	6	6	6	99	99	12
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	236	125	131			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	125	131			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	741	915	1442			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	105	111			
Volume Left	6	6	0			
Volume Right	6	0	12			
cSH	819	1442	1700			
Volume to Capacity	0.01	0.00	0.07			
Queue Length 95th (m)	0.4	0.1	0.0			
Control Delay (s)	9.5	0.5	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	0.5	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.7				
Intersection Capacity Utilization		19.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Argyle Road & Central Site Access

Future Background PM

09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	10	15	75	75	15
Future Volume (Veh/h)	15	10	15	75	75	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	18	12	18	89	89	18
Pedestrians	20			5		
Lane Width (m)	3.6			3.6		
Walking Speed (m/s)	1.2			1.2		
Percent Blockage	2			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	243	123	127			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	243	123	127			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	728	914	1447			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	30	107	107			
Volume Left	18	18	0			
Volume Right	12	0	18			
cSH	793	1447	1700			
Volume to Capacity	0.04	0.01	0.06			
Queue Length 95th (m)	0.9	0.3	0.0			
Control Delay (s)	9.7	1.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.7	1.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		23.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6: Argyle Road & South Site Access

Future Background PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	0	85	80	5
Future Volume (Veh/h)	5	5	0	85	80	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	6	6	0	110	104	6
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	232	122	125			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232	122	125			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	751	923	1456			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	12	110	110			
Volume Left	6	0	0			
Volume Right	6	0	6			
cSH	828	1456	1700			
Volume to Capacity	0.01	0.00	0.06			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	9.4	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.4	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		18.0%		ICU Level of Service		A
Analysis Period (min)		15				

Queues
7: Confederation Parkway & King Street West

Future Background PM
09-01-2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	137	358	626	84	205	495
v/c Ratio	0.70	0.73	0.46	0.08	0.33	0.33
Control Delay	86.7	15.2	10.8	5.9	7.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.7	15.2	10.8	5.9	7.1	5.3
Queue Length 50th (m)	45.0	0.0	77.1	5.7	14.3	30.8
Queue Length 95th (m)	67.0	33.0	125.2	13.6	23.4	32.3
Internal Link Dist (m)	84.6		81.2			86.7
Turn Bay Length (m)				10.0		
Base Capacity (vph)	287	549	1361	1063	701	1503
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.65	0.46	0.08	0.29	0.33
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

7: Confederation Parkway & King Street West

Future Background PM

09-01-2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	130	340	595	80	195	470
Future Volume (vph)	130	340	595	80	195	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	0.91	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1561	1863	1448	1777	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.36	1.00
Satd. Flow (perm)	1805	1561	1863	1448	673	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	358	626	84	205	495
RTOR Reduction (vph)	0	319	0	5	0	0
Lane Group Flow (vph)	137	39	626	79	205	495
Confl. Peds. (#/hr)	10	5		20	20	
Heavy Vehicles (%)	0%	1%	2%	1%	1%	2%
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	17.4	17.4	117.0	117.0	129.1	129.1
Effective Green, g (s)	17.4	17.4	117.0	117.0	129.1	129.1
Actuated g/C Ratio	0.11	0.11	0.73	0.73	0.81	0.81
Clearance Time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	169	1362	1058	605	1503
v/s Ratio Prot	c0.08		c0.34		0.02	c0.27
v/s Ratio Perm		0.02		0.05	0.25	
v/c Ratio	0.70	0.23	0.46	0.07	0.34	0.33
Uniform Delay, d1	68.8	65.2	8.7	6.1	4.9	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.98	1.05
Incremental Delay, d2	10.4	0.7	1.1	0.1	0.3	0.6
Delay (s)	79.2	65.9	9.8	6.3	10.0	4.8
Level of Service	E	E	A	A	A	A
Approach Delay (s)	69.6		9.4			6.4
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			23.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			65.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 8: Confederation Parkway & Dunbar Road

Future Background PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	55	0	0	0	70	660	5	0	560	40
Future Volume (Veh/h)	15	0	55	0	0	0	70	660	5	0	560	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	16	0	57	0	0	0	73	688	5	0	583	42
Pedestrians		30			25							
Lane Width (m)		3.6			3.6							
Walking Speed (m/s)		1.2			1.2							
Percent Blockage		3			2							
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)											105	
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93		0.93					
vC, conflicting volume	1447	1477	613	1499	1514	713	655			718		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1443	1475	547	1499	1515	713	592			718		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	100	88	100	100	100	92			100		
cM capacity (veh/h)	91	104	491	74	99	426	902			874		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	73	0	73	688	5	0	583	42				
Volume Left	16	0	73	0	0	0	0	0				
Volume Right	57	0	0	0	5	0	0	42				
cSH	251	1700	902	1700	1700	1700	1700	1700				
Volume to Capacity	0.29	0.00	0.08	0.40	0.00	0.00	0.34	0.02				
Queue Length 95th (m)	9.4	0.0	2.1	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	25.2	0.0	9.3	0.0	0.0	0.0	0.0	0.0				
Lane LOS	D	A	A									
Approach Delay (s)	25.2	0.0	0.9			0.0						
Approach LOS	D	A										
Intersection Summary												
Average Delay			1.7									
Intersection Capacity Utilization			52.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: Argyle Road & Dundas Street West

Future Background PM

09-01-2020

							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	  			 			
Traffic Volume (veh/h)	1140	55	45	1675	50	30	
Future Volume (Veh/h)	1140	55	45	1675	50	30	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly flow rate (vph)	1188	57	47	1745	52	31	
Pedestrians				5	20		
Lane Width (m)				3.6	3.6		
Walking Speed (m/s)				1.2	1.2		
Percent Blockage				0	2		
Right turn flare (veh)							
Median type	TWLTL		TWLTL				
Median storage veh)	2		2				
Upstream signal (m)	80		262				
pX, platoon unblocked			0.92		0.68	0.92	
vC, conflicting volume			1265		2203	648	
vC1, stage 1 conf vol					1236		
vC2, stage 2 conf vol					966		
vCu, unblocked vol			1120		1328	451	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)			2.2		3.5	3.3	
p0 queue free %			92		79	94	
cM capacity (veh/h)			573		243	507	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	792	453	47	872	872	52	31
Volume Left	0	0	47	0	0	52	0
Volume Right	0	57	0	0	0	0	31
cSH	1700	1700	573	1700	1700	243	507
Volume to Capacity	0.47	0.27	0.08	0.51	0.51	0.21	0.06
Queue Length 95th (m)	0.0	0.0	2.1	0.0	0.0	6.3	1.6
Control Delay (s)	0.0	0.0	11.8	0.0	0.0	23.8	12.6
Lane LOS			B		C		B
Approach Delay (s)	0.0		0.3		19.6		
Approach LOS					C		
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			57.8%		ICU Level of Service		B
Analysis Period (min)			15				

Queues

Future Total AM

1: Private Driveway/Parkerhill Road & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	SBL	SBR
Lane Group Flow (vph)	60	1544	5	908	22	87
v/c Ratio	0.13	0.52	0.02	0.32	0.30	0.51
Control Delay	2.5	3.6	5.4	9.1	82.2	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.5	3.6	5.4	9.1	82.2	23.8
Queue Length 50th (m)	2.4	51.0	0.5	62.2	7.3	0.0
Queue Length 95th (m)	5.7	71.7	m1.4	125.3	17.5	18.7
Internal Link Dist (m)		269.7		55.8		
Turn Bay Length (m)	45.0		60.0			
Base Capacity (vph)	478	2978	246	2871	206	316
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.52	0.02	0.32	0.11	0.28

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Private Driveway/Parkerhill Road & Dundas Street West

Future Total AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1410	10	5	805	30	0	0	0	20	0	80
Future Volume (vph)	55	1410	10	5	805	30	0	0	0	20	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5					7.0		7.0
Lane Util. Factor	1.00	0.95		1.00	0.95					1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00					1.00		1.00
Flpb, ped/bikes	0.98	1.00		1.00	1.00					1.00		1.00
Frt	1.00	1.00		1.00	0.99					1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)	1701	3467		1798	3341					1656		1553
Flt Permitted	0.31	1.00		0.15	1.00					0.76		1.00
Satd. Flow (perm)	555	3467		286	3341					1320		1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	60	1533	11	5	875	33	0	0	0	22	0	87
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	82
Lane Group Flow (vph)	60	1544	0	5	907	0	0	0	0	22	0	5
Confl. Peds. (#/hr)	15		10	10		15						
Heavy Vehicles (%)	4%	4%	0%	0%	7%	10%	0%	0%	0%	9%	0%	4%
Turn Type	Perm	NA		Perm	NA					Perm		Perm
Protected Phases		4			8			2				
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	137.5	137.5		137.5	137.5					9.0		9.0
Effective Green, g (s)	137.5	137.5		137.5	137.5					9.0		9.0
Actuated g/C Ratio	0.86	0.86		0.86	0.86					0.06		0.06
Clearance Time (s)	6.5	6.5		6.5	6.5					7.0		7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)	476	2979		245	2871					74		87
v/s Ratio Prot		c0.45			0.27							
v/s Ratio Perm	0.11			0.02						c0.02		0.00
v/c Ratio	0.13	0.52		0.02	0.32					0.30		0.06
Uniform Delay, d1	1.8	2.9		1.6	2.2					72.5		71.5
Progression Factor	1.00	1.00		2.78	3.96					1.00		1.00
Incremental Delay, d2	0.5	0.6		0.1	0.3					2.2		0.3
Delay (s)	2.3	3.5		4.6	8.9					74.7		71.8
Level of Service	A	A		A	A					E		E
Approach Delay (s)		3.5			8.8			0.0			72.3	
Approach LOS		A			A			A			E	
Intersection Summary												
HCM 2000 Control Delay			8.2			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			57.8%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Rugby Road/Plaza Driveway & Dundas Street West

Future Total AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	1380	35	15	785	30	20	0	15	0	0	15
Future Volume (Veh/h)	25	1380	35	15	785	30	20	0	15	0	0	15
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	26	1453	37	16	826	32	21	0	16	0	0	16
Pedestrians								35		35		
Lane Width (m)								3.6		3.6		
Walking Speed (m/s)								1.2		1.2		
Percent Blockage								3		3		
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh	2			2								
Upstream signal (m)	249			93								
pX, platoon unblocked	0.84			0.89			0.90	0.90	0.89	0.90	0.90	0.84
vC, conflicting volume	893			1525			2020	2484	780	1704	2486	464
vC1, stage 1 conf vol							1558	1558		909	909	
vC2, stage 2 conf vol							461	925		794	1577	
vCu, unblocked vol	500			1339			1348	1864	499	996	1867	0
tC, single (s)	4.1			4.2			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			96			83	100	96	100	100	98
cM capacity (veh/h)	879			423			127	165	450	316	150	893
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1			
Volume Total	26	969	521	16	551	307	21	16	16			
Volume Left	26	0	0	16	0	0	21	0	0			
Volume Right	0	0	37	0	0	32	0	16	16			
cSH	879	1700	1700	423	1700	1700	127	450	893			
Volume to Capacity	0.03	0.57	0.31	0.04	0.32	0.18	0.17	0.04	0.02			
Queue Length 95th (m)	0.7	0.0	0.0	0.9	0.0	0.0	4.6	0.9	0.4			
Control Delay (s)	9.2	0.0	0.0	13.9	0.0	0.0	38.9	13.3	9.1			
Lane LOS	A			B			E	B	A			
Approach Delay (s)	0.2			0.3			27.9		9.1			
Approach LOS							D		A			
Intersection Summary												
Average Delay	0.7											
Intersection Capacity Utilization	56.0%			ICU Level of Service					B			
Analysis Period (min)	15											

3: Confederation Parkway & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	143	1401	16	769	154	434	27	165	621	93
v/c Ratio	0.39	0.83	0.09	0.54	0.60	0.34	0.05	0.65	0.64	0.22
Control Delay	25.9	46.6	17.9	35.8	37.1	32.3	0.2	63.5	53.9	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	46.6	17.9	35.8	37.1	32.3	0.2	63.5	53.9	13.3
Queue Length 50th (m)	26.2	210.7	2.2	94.7	26.0	42.8	0.0	51.3	101.2	4.7
Queue Length 95th (m)	45.1	#307.1	6.8	133.5	36.1	48.1	m0.2	73.1	110.5	18.2
Internal Link Dist (m)		69.4		224.3		81.3			72.7	
Turn Bay Length (m)	35.0		40.0		50.0		10.0	55.0		10.0
Base Capacity (vph)	371	1698	175	1419	260	1876	822	413	1572	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.83	0.09	0.54	0.59	0.23	0.03	0.40	0.40	0.14

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

3: Confederation Parkway & Dundas Street West

Future Total AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	1150	125	15	605	95	140	395	25	150	565	85
Future Volume (vph)	130	1150	125	15	605	95	140	395	25	150	565	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.95	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.98	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1763	3407		1687	3286		1728	3471	1475	1732	3471	1327
Flt Permitted	0.26	1.00		0.09	1.00		0.22	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	478	3407		153	3286		403	3471	1475	911	3471	1327
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	143	1264	137	16	665	104	154	434	27	165	621	93
RTOR Reduction (vph)	0	4	0	0	6	0	0	0	17	0	0	55
Lane Group Flow (vph)	143	1397	0	16	763	0	154	434	10	165	621	38
Confl. Peds. (#/hr)	55		60	60		55	60		30	30		60
Heavy Vehicles (%)	2%	4%	0%	7%	7%	4%	4%	4%	4%	2%	4%	11%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	86.6	79.6		74.6	70.6		57.9	57.9	57.9	42.9	42.9	42.9
Effective Green, g (s)	86.6	79.6		74.6	70.6		57.9	57.9	57.9	42.9	42.9	42.9
Actuated g/C Ratio	0.54	0.50		0.47	0.44		0.36	0.36	0.36	0.27	0.27	0.27
Clearance Time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	1694		109	1449		245	1256	533	244	930	355
v/s Ratio Prot	c0.03	c0.41		0.00	0.23		c0.05	0.13			0.18	
v/s Ratio Perm	0.18			0.06			0.18		0.01	c0.18		0.03
v/c Ratio	0.39	0.82		0.15	0.53		0.63	0.35	0.02	0.68	0.67	0.11
Uniform Delay, d1	20.1	34.3		27.9	32.5		37.6	37.2	32.8	52.3	52.2	44.1
Progression Factor	1.33	1.21		1.00	1.00		0.89	0.88	0.13	1.00	1.00	1.00
Incremental Delay, d2	0.6	3.1		0.6	0.3		4.6	0.7	0.1	14.1	3.8	0.6
Delay (s)	27.3	44.7		28.6	32.9		37.9	33.6	4.3	66.4	56.0	44.7
Level of Service	C	D		C	C		D	C	A	E	E	D
Approach Delay (s)		43.1			32.8			33.4			56.8	
Approach LOS		D			C			C			E	
Intersection Summary												
HCM 2000 Control Delay			42.5			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			123.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Argyle Road & North Site Access

Future Total AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	25	10	95	50	15
Future Volume (Veh/h)	40	25	10	95	50	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	47	29	12	110	58	17
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	216	82	90			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	82	90			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	97	99			
cM capacity (veh/h)	761	972	1499			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	76	122	75			
Volume Left	47	12	0			
Volume Right	29	0	17			
cSH	830	1499	1700			
Volume to Capacity	0.09	0.01	0.04			
Queue Length 95th (m)	2.4	0.2	0.0			
Control Delay (s)	9.8	0.8	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.8	0.8	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.1				
Intersection Capacity Utilization		22.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 5: Argyle Road & Central Site Access

Future Total AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	105	75	0
Future Volume (Veh/h)	0	0	0	105	75	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	0	0	0	136	97	0
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	248	112	112			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	248	112	112			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	736	935	1472			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	136	97			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1472	1700			
Volume to Capacity	0.00	0.00	0.06			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		11.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6: Argyle Road & South Site Access

Future Total AM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	35	15	75	65	10
Future Volume (Veh/h)	30	35	15	75	65	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	37	43	18	91	79	12
Pedestrians	25					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	237	110	116			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	110	116			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	95	99			
cM capacity (veh/h)	731	929	1454			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	80	109	91			
Volume Left	37	18	0			
Volume Right	43	0	12			
cSH	825	1454	1700			
Volume to Capacity	0.10	0.01	0.05			
Queue Length 95th (m)	2.6	0.3	0.0			
Control Delay (s)	9.8	1.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.8	1.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.3				
Intersection Capacity Utilization		21.9%		ICU Level of Service	A	
Analysis Period (min)		15				

7: Confederation Parkway & King Street West

09-01-2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	33	189	583	89	222	606
v/c Ratio	0.30	0.69	0.41	0.07	0.31	0.38
Control Delay	77.7	22.5	7.5	4.1	4.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	77.7	22.5	7.5	4.1	4.9	5.9
Queue Length 50th (m)	10.9	0.0	52.0	4.4	10.4	50.3
Queue Length 95th (m)	22.5	25.6	98.8	12.2	m18.7	51.8
Internal Link Dist (m)	84.6		81.2			86.7
Turn Bay Length (m)				10.0		
Base Capacity (vph)	287	406	1416	1196	781	1576
Starvation Cap Reductn	0	0	0	0	0	327
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.47	0.41	0.07	0.28	0.49

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Confederation Parkway & King Street West

Future Total AM
09-01-2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	170	525	80	200	545
Future Volume (vph)	30	170	525	80	200	545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1553	1827	1537	1766	1845
Flt Permitted	0.95	1.00	1.00	1.00	0.40	1.00
Satd. Flow (perm)	1805	1553	1827	1537	741	1845
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	189	583	89	222	606
RTOR Reduction (vph)	0	177	0	4	0	0
Lane Group Flow (vph)	33	12	583	85	222	606
Confl. Peds. (#/hr)	5			5	5	
Heavy Vehicles (%)	0%	4%	4%	1%	2%	3%
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	9.8	9.8	124.1	124.1	136.7	136.7
Effective Green, g (s)	9.8	9.8	124.1	124.1	136.7	136.7
Actuated g/C Ratio	0.06	0.06	0.78	0.78	0.85	0.85
Clearance Time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	110	95	1417	1192	694	1576
v/s Ratio Prot	c0.02		c0.32		0.02	c0.33
v/s Ratio Perm		0.01		0.05	0.25	
v/c Ratio	0.30	0.12	0.41	0.07	0.32	0.38
Uniform Delay, d1	71.8	71.0	5.9	4.3	2.7	2.5
Progression Factor	1.00	1.00	1.00	1.00	2.59	1.82
Incremental Delay, d2	1.5	0.6	0.9	0.1	0.2	0.7
Delay (s)	73.4	71.6	6.8	4.4	7.2	5.2
Level of Service	E	E	A	A	A	A
Approach Delay (s)	71.9		6.5			5.8
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			14.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			60.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 8: Confederation Parkway & Dunbar Road

Future Total AM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	130	0	0	5	70	590	0	0	560	15
Future Volume (Veh/h)	10	0	130	0	0	5	70	590	0	0	560	15
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	11	0	149	0	0	6	80	678	0	0	644	17
Pedestrians	10			20			5					
Lane Width (m)	3.6			3.6			3.6					
Walking Speed (m/s)	1.2			1.2			1.2					
Percent Blockage	1			2			0					
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												105
pX, platoon unblocked	0.92	0.92	0.92	0.92	0.92		0.92					
vC, conflicting volume	1498	1512	659	1656	1529	698	671	698				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1498	1513	590	1669	1531	698	603	698				
tC, single (s)	7.3	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	85	100	68	100	100	99	91	100				
cM capacity (veh/h)	75	99	465	44	97	436	902	893				
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	160	6	80	678	0	0	644	17				
Volume Left	11	0	80	0	0	0	0	0				
Volume Right	149	6	0	0	0	0	0	17				
cSH	343	436	902	1700	1700	1700	1700	1700				
Volume to Capacity	0.47	0.01	0.09	0.40	0.00	0.00	0.38	0.01				
Queue Length 95th (m)	19.0	0.3	2.3	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	24.4	13.4	9.4	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B	A									
Approach Delay (s)	24.4	13.4	1.0	0.0								
Approach LOS	C	B										
Intersection Summary												
Average Delay	3.0											
Intersection Capacity Utilization	60.1%			ICU Level of Service					B			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 9: Argyle Road & Dundas Street West

Future Total AM
09-01-2020

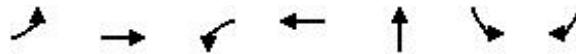
							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations							
Traffic Volume (veh/h)	1390	40	30	785	55	75	
Future Volume (Veh/h)	1390	40	30	785	55	75	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	1495	43	32	844	59	81	
Pedestrians					15		
Lane Width (m)					3.6		
Walking Speed (m/s)					1.2		
Percent Blockage					1		
Right turn flare (veh)							
Median type	TWLT			TWLT			
Median storage veh	2			2			
Upstream signal (m)	80			262			
pX, platoon unblocked			0.88		0.93	0.88	
vC, conflicting volume			1553		2018	784	
vC1, stage 1 conf vol					1532		
vC2, stage 2 conf vol					486		
vCu, unblocked vol			1358		1377	486	
tC, single (s)			4.2		6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)			2.3		3.5	3.3	
p0 queue free %			92		67	83	
cM capacity (veh/h)			415		181	464	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	997	541	32	422	422	59	81
Volume Left	0	0	32	0	0	59	0
Volume Right	0	43	0	0	0	0	81
cSH	1700	1700	415	1700	1700	181	464
Volume to Capacity	0.59	0.32	0.08	0.25	0.25	0.33	0.17
Queue Length 95th (m)	0.0	0.0	2.0	0.0	0.0	10.7	5.0
Control Delay (s)	0.0	0.0	14.4	0.0	0.0	34.2	14.4
Lane LOS			B			D	B
Approach Delay (s)	0.0		0.5			22.7	
Approach LOS						C	
Intersection Summary							
Average Delay			1.4				
Intersection Capacity Utilization			51.0%		ICU Level of Service		A
Analysis Period (min)			15				

Queues

Future Total PM

1: Private Driveway/Parkerhill Road & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBR
Lane Group Flow (vph)	41	1183	15	1750	40	41	82
v/c Ratio	0.22	0.39	0.04	0.58	0.32	0.38	0.55
Control Delay	5.6	3.3	5.1	14.5	54.9	80.9	44.6
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	5.6	3.3	5.1	15.0	54.9	80.9	44.6
Queue Length 50th (m)	2.0	36.8	1.1	194.0	8.1	13.4	10.1
Queue Length 95th (m)	6.5	53.7	m2.4	m269.3	20.9	26.7	28.9
Internal Link Dist (m)		269.7		55.8	40.3		
Turn Bay Length (m)	45.0		60.0				
Base Capacity (vph)	186	2996	362	3015	271	252	282
Starvation Cap Reductn	0	0	0	761	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.39	0.04	0.78	0.15	0.16	0.29

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Private Driveway/Parkerhill Road & Dundas Street West

Future Total PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1150	10	15	1665	50	20	5	15	40	0	80
Future Volume (vph)	40	1150	10	15	1665	50	20	5	15	40	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			7.0		7.0		7.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00		1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00		0.95
Flpb, ped/bikes	1.00	1.00		0.98	1.00			0.98		0.99		1.00
Frt	1.00	1.00		1.00	1.00			0.95		1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95		1.00
Satd. Flow (prot)	1805	3528		1770	3550			1657		1782		1532
Flt Permitted	0.12	1.00		0.23	1.00			0.98		0.86		1.00
Satd. Flow (perm)	220	3528		424	3550			1657		1616		1532
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	41	1173	10	15	1699	51	20	5	15	41	0	82
RTOR Reduction (vph)	0	0	0	0	1	0	0	14	0	0	0	48
Lane Group Flow (vph)	41	1183	0	15	1749	0	0	26	0	41	0	34
Confl. Peds. (#/hr)	15		25	25		15	15		5	5		15
Heavy Vehicles (%)	0%	2%	9%	0%	1%	0%	0%	25%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm		Perm
Protected Phases		4			8			2				
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	135.9	135.9		135.9	135.9			10.6		10.6		10.6
Effective Green, g (s)	135.9	135.9		135.9	135.9			10.6		10.6		10.6
Actuated g/C Ratio	0.85	0.85		0.85	0.85			0.07		0.07		0.07
Clearance Time (s)	6.5	6.5		6.5	6.5			7.0		7.0		7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0		3.0
Lane Grp Cap (vph)	186	2996		360	3015			109		107		101
v/s Ratio Prot		0.34			c0.49							
v/s Ratio Perm	0.19			0.04				0.02		c0.03		0.02
v/c Ratio	0.22	0.39		0.04	0.58			0.24		0.38		0.34
Uniform Delay, d1	2.2	2.7		1.9	3.6			70.9		71.6		71.4
Progression Factor	1.00	1.00		2.12	3.64			1.00		1.00		1.00
Incremental Delay, d2	2.7	0.4		0.1	0.5			1.1		2.3		2.0
Delay (s)	4.9	3.1		4.1	13.6			72.0		73.8		73.4
Level of Service	A	A		A	B			E		E		E
Approach Delay (s)		3.2			13.5			72.0			73.5	
Approach LOS		A			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			12.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)				13.5		
Intersection Capacity Utilization			82.6%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Rugby Road/Plaza Driveway & Dundas Street West

Future Total PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1110	40	25	1665	15	25	0	35	5	0	30
Future Volume (Veh/h)	15	1110	40	25	1665	15	25	0	35	5	0	30
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	16	1168	42	26	1753	16	26	0	37	5	0	32
Pedestrians	5			5			50			40		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	0			0			4			3		
Right turn flare (veh)												
Median type	TWLTL			TWLTL								
Median storage veh	2			2								
Upstream signal (m)	249			93								
pX, platoon unblocked	0.63			0.93			0.66	0.66	0.93	0.66	0.66	0.63
vC, conflicting volume	1809			1260			2236	3132	660	2511	3145	930
vC1, stage 1 conf vol							1271	1271		1853	1853	
vC2, stage 2 conf vol							966	1861		658	1292	
vCu, unblocked vol	1104			1134			1388	2741	491	1803	2761	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			95			85	100	92	96	100	95
cM capacity (veh/h)	389			557			174	113	471	113	118	660
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1			
Volume Total	16	779	431	26	1169	600	26	37	37			
Volume Left	16	0	0	26	0	0	26	0	5			
Volume Right	0	0	42	0	0	16	0	37	32			
cSH	389	1700	1700	557	1700	1700	174	471	399			
Volume to Capacity	0.04	0.46	0.25	0.05	0.69	0.35	0.15	0.08	0.09			
Queue Length 95th (m)	1.0	0.0	0.0	1.2	0.0	0.0	4.1	2.0	2.4			
Control Delay (s)	14.7	0.0	0.0	11.8	0.0	0.0	29.3	13.3	14.9			
Lane LOS	B			B			D	B	B			
Approach Delay (s)	0.2			0.2			19.9		14.9			
Approach LOS							C		B			
Intersection Summary												
Average Delay	0.8											
Intersection Capacity Utilization	61.3%			ICU Level of Service					B			
Analysis Period (min)	15											

3: Confederation Parkway & Dundas Street West

09-01-2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	128	1035	36	1429	270	561	56	153	480	173
v/c Ratio	0.63	0.60	0.12	0.89	0.95	0.47	0.11	0.77	0.55	0.41
Control Delay	43.3	36.5	17.1	46.8	73.8	38.0	5.7	79.8	54.1	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	36.5	17.1	46.8	73.8	38.0	5.7	79.8	54.1	29.2
Queue Length 50th (m)	23.2	142.6	4.6	217.6	50.3	59.5	0.2	48.9	75.7	27.7
Queue Length 95th (m)	50.3	186.5	12.7	#345.5	#73.0	67.7	m4.9	69.0	81.7	44.8
Internal Link Dist (m)		69.4		224.3		81.3			72.7	
Turn Bay Length (m)	35.0		40.0		50.0		10.0	55.0		10.0
Base Capacity (vph)	204	1727	300	1612	285	1932	799	365	1603	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.60	0.12	0.89	0.95	0.29	0.07	0.42	0.30	0.24

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

3: Confederation Parkway & Dundas Street West

Future Total PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	900	115	35	1260	140	265	550	55	150	470	170
Future Volume (vph)	125	900	115	35	1260	140	265	550	55	150	470	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00	1.00	0.96	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3414		1800	3457		1790	3574	1433	1735	3539	1472
Flt Permitted	0.05	1.00		0.20	1.00		0.30	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	99	3414		380	3457		570	3574	1433	807	3539	1472
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	128	918	117	36	1286	143	270	561	56	153	480	173
RTOR Reduction (vph)	0	4	0	0	4	0	0	0	37	0	0	57
Lane Group Flow (vph)	128	1031	0	36	1425	0	270	561	19	153	480	116
Confl. Peds. (#/hr)	75		90	90		75	60		65	65		60
Heavy Vehicles (%)	1%	3%	0%	0%	2%	1%	0%	1%	2%	0%	2%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	91.8	80.8		83.1	75.1		52.7	52.7	52.7	38.7	38.7	38.7
Effective Green, g (s)	91.8	80.8		83.1	75.1		52.7	52.7	52.7	38.7	38.7	38.7
Actuated g/C Ratio	0.57	0.50		0.52	0.47		0.33	0.33	0.33	0.24	0.24	0.24
Clearance Time (s)	3.0	8.0		3.0	8.0		3.0	7.5	7.5	7.5	7.5	7.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	201	1724		268	1622		271	1177	471	195	855	356
v/s Ratio Prot	c0.05	0.30		0.01	c0.41		c0.07	0.16			0.14	
v/s Ratio Perm	0.31			0.06			c0.26		0.01	0.19		0.08
v/c Ratio	0.64	0.60		0.13	0.88		1.00	0.48	0.04	0.78	0.56	0.33
Uniform Delay, d1	38.6	28.1		20.3	38.3		51.2	42.7	36.5	56.8	53.2	49.9
Progression Factor	0.98	1.15		1.00	1.00		0.86	0.89	0.76	1.00	1.00	1.00
Incremental Delay, d2	6.2	0.5		0.2	5.8		49.3	1.2	0.1	26.4	2.7	2.4
Delay (s)	44.1	32.8		20.5	44.1		93.5	39.3	27.8	83.2	55.9	52.3
Level of Service	D	C		C	D		F	D	C	F	E	D
Approach Delay (s)		34.0			43.5			55.1			60.3	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			46.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			21.5			
Intersection Capacity Utilization			128.1%			ICU Level of Service			H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

4: Argyle Road & North Site Access

Future Total PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	20	25	90	90	35
Future Volume (Veh/h)	25	20	25	90	90	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	29	23	29	105	105	41
Pedestrians	20					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	308	146	166			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	146	166			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	97	98			
cM capacity (veh/h)	662	892	1401			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	52	134	146			
Volume Left	29	29	0			
Volume Right	23	0	41			
cSH	748	1401	1700			
Volume to Capacity	0.07	0.02	0.09			
Queue Length 95th (m)	1.8	0.5	0.0			
Control Delay (s)	10.2	1.8	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.2	1.8	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		2.3				
Intersection Capacity Utilization		29.7%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

5: Argyle Road & Central Site Access

Future Total PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	115	110	0
Future Volume (Veh/h)	0	0	0	115	110	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	137	131	0
Pedestrians	20			5		
Lane Width (m)	3.6			3.6		
Walking Speed (m/s)	1.2			1.2		
Percent Blockage	2			0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	288	156	151			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288	156	151			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	695	876	1418			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	137	131			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1418	1700			
Volume to Capacity	0.00	0.00	0.08			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		21.0%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6: Argyle Road & South Site Access

Future Total PM
09-01-2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	20	15	90	85	25
Future Volume (Veh/h)	25	20	15	90	85	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	32	26	19	117	110	32
Pedestrians	15					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	296	141	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	296	141	157			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	99			
cM capacity (veh/h)	681	901	1417			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	58	136	142			
Volume Left	32	19	0			
Volume Right	26	0	32			
cSH	765	1417	1700			
Volume to Capacity	0.08	0.01	0.08			
Queue Length 95th (m)	2.0	0.3	0.0			
Control Delay (s)	10.1	1.2	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.1	1.2	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		2.2				
Intersection Capacity Utilization		22.2%		ICU Level of Service		A
Analysis Period (min)		15				

Queues

Future Total PM

7: Confederation Parkway & King Street West

09-01-2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	137	358	626	84	205	495
v/c Ratio	0.70	0.73	0.46	0.08	0.33	0.33
Control Delay	86.7	15.2	10.8	5.9	7.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.7	15.2	10.8	5.9	7.1	5.3
Queue Length 50th (m)	45.0	0.0	77.1	5.7	14.3	30.8
Queue Length 95th (m)	67.0	33.0	125.2	13.6	23.4	32.3
Internal Link Dist (m)	84.6		81.2			86.7
Turn Bay Length (m)				10.0		
Base Capacity (vph)	287	549	1361	1063	701	1503
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.65	0.46	0.08	0.29	0.33
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

7: Confederation Parkway & King Street West

Future Total PM
09-01-2020

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	130	340	595	80	195	470
Future Volume (vph)	130	340	595	80	195	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	0.91	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.99	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1561	1863	1448	1777	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.36	1.00
Satd. Flow (perm)	1805	1561	1863	1448	673	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	358	626	84	205	495
RTOR Reduction (vph)	0	319	0	5	0	0
Lane Group Flow (vph)	137	39	626	79	205	495
Confl. Peds. (#/hr)	10	5		20	20	
Heavy Vehicles (%)	0%	1%	2%	1%	1%	2%
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	17.4	17.4	117.0	117.0	129.1	129.1
Effective Green, g (s)	17.4	17.4	117.0	117.0	129.1	129.1
Actuated g/C Ratio	0.11	0.11	0.73	0.73	0.81	0.81
Clearance Time (s)	6.5	6.5	7.0	7.0	3.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	196	169	1362	1058	605	1503
v/s Ratio Prot	c0.08		c0.34		0.02	c0.27
v/s Ratio Perm		0.02		0.05	0.25	
v/c Ratio	0.70	0.23	0.46	0.07	0.34	0.33
Uniform Delay, d1	68.8	65.2	8.7	6.1	4.9	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.98	1.05
Incremental Delay, d2	10.4	0.7	1.1	0.1	0.3	0.6
Delay (s)	79.2	65.9	9.8	6.3	10.0	4.8
Level of Service	E	E	A	A	A	A
Approach Delay (s)	69.6		9.4			6.3
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			23.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			160.0		Sum of lost time (s)	16.5
Intersection Capacity Utilization			65.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 8: Confederation Parkway & Dunbar Road

Future Total PM
09-01-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	75	0	0	0	90	660	5	0	560	40
Future Volume (Veh/h)	15	0	75	0	0	0	90	660	5	0	560	40
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	16	0	78	0	0	0	94	688	5	0	583	42
Pedestrians	30			25								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	3			2								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												105
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93		0.93					
vC, conflicting volume	1489	1519	613	1562	1556	713	655				718	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1488	1520	547	1567	1560	713	592				718	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	81	100	84	100	100	100	90				100	
cM capacity (veh/h)	83	95	491	62	90	426	902				874	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	94	0	94	688	5	0	583	42				
Volume Left	16	0	94	0	0	0	0	0				
Volume Right	78	0	0	0	5	0	0	42				
cSH	268	1700	902	1700	1700	1700	1700	1700				
Volume to Capacity	0.35	0.00	0.10	0.40	0.00	0.00	0.34	0.02				
Queue Length 95th (m)	12.1	0.0	2.8	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	25.5	0.0	9.5	0.0	0.0	0.0	0.0	0.0				
Lane LOS	D	A	A									
Approach Delay (s)	25.5	0.0	1.1				0.0					
Approach LOS	D	A										
Intersection Summary												
Average Delay	2.2											
Intersection Capacity Utilization	53.5%			ICU Level of Service				A				
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

9: Argyle Road & Dundas Street West

Future Total PM
09-01-2020

							
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations							
Traffic Volume (veh/h)	1140	65	65	1675	55	50	
Future Volume (Veh/h)	1140	65	65	1675	55	50	
Sign Control	Free			Free	Stop		
Grade	0%			0%	0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Hourly flow rate (vph)	1188	68	68	1745	57	52	
Pedestrians				5	20		
Lane Width (m)				3.6	3.6		
Walking Speed (m/s)				1.2	1.2		
Percent Blockage				0	2		
Right turn flare (veh)							
Median type	TWLTL		TWLTL				
Median storage veh	2		2				
Upstream signal (m)	80		262				
pX, platoon unblocked			0.92		0.68	0.92	
vC, conflicting volume			1276		2250	653	
vC1, stage 1 conf vol					1242		
vC2, stage 2 conf vol					1008		
vCu, unblocked vol			1130		1375	454	
tC, single (s)			4.1		6.8	6.9	
tC, 2 stage (s)					5.8		
tF (s)			2.2		3.5	3.3	
p0 queue free %			88		76	90	
cM capacity (veh/h)			567		239	504	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	792	464	68	872	872	57	52
Volume Left	0	0	68	0	0	57	0
Volume Right	0	68	0	0	0	0	52
cSH	1700	1700	567	1700	1700	239	504
Volume to Capacity	0.47	0.27	0.12	0.51	0.51	0.24	0.10
Queue Length 95th (m)	0.0	0.0	3.2	0.0	0.0	7.2	2.7
Control Delay (s)	0.0	0.0	12.2	0.0	0.0	24.7	13.0
Lane LOS			B			C	B
Approach Delay (s)	0.0		0.5			19.1	
Approach LOS						C	
Intersection Summary							
Average Delay			0.9				
Intersection Capacity Utilization			57.8%		ICU Level of Service		B
Analysis Period (min)			15				