

Appendices

Appendix A

Reduced Architectural Plans (Not to Scale)



1.0 SUMMARY

GROSS SITE AREA: 16,680m²
TOTAL GFA: 60,818m²
FSI: 3.65
NEW RESIDENTIAL UNITS: 834

2.0 BUILDING HEIGHTS

PART B - BUILDING A
SITE AREA: 4,046 m²
GFA: 27,843 m²
FSI: 6.9
NEW RESIDENTIAL UNITS: 388

PART D - BUILDING B
SITE AREA: 4,079 m²
GFA: 26,967 m²
FSI: 6.6
NEW RESIDENTIAL UNITS: 371

PART E - BUILDING C
SITE AREA: 1,811 m²
GFA: 3,759 m²
FSI: 3.1
NEW RESIDENTIAL UNITS: 75

3.0 FLOOR AREA

*GFA calculated per Area Plans, A1001 - A1003

Table with columns: Level, # of Levels, GCA/Level (m²), Total GCA (m²), GCA (sf), Residential GCA (m²), Residential GCA (sf), Loading GCA (m²), Parking GCA (m²), GFA Deductions (m²), Total GFA (SF), Total GFA (m²), Residential GFA (m²), Non-Res / Retail GFA (m²), Leasable (m²), Indoor Amenity (m²), Outdoor Amenity (m²). Rows include BELOW GRADE, BUILDING A, BUILDING B, BUILDING C, and GRAND TOTAL.

Table with columns: Level, UNIT COUNT (1B, 1B+D, 2B, 2B+D, 3B), Total Units/Floor, Total Units. Rows include BELOW GRADE, BUILDING A, BUILDING B, BUILDING C, and GRAND TOTAL.

Toronto Green Standard Version 4.0 Tier 1

Table with columns: General Project Description, SITE AREA, TOTAL GROSS FLOOR AREA, RESIDENTIAL, RETAIL, COMMERCIAL, TOTAL NUMBER OF RESIDENTIAL UNITS.

Section 1: For Stand Alone Zoning Bylaw Amendment Applications and Site Plan Control Applications

Table with columns: Automobile Infrastructure, Cycle Infrastructure, Tree Canopy. Rows include Required, Proposed, and Percentage for various infrastructure metrics.

Section 2: For Site Plan Control Applications

Table with columns: Cycle Infrastructure, Landscaping & Biodiversity. Rows include Required, Proposed, and Percentage for various landscaping and infrastructure metrics.

4.0 AMENITY

Table with columns: 4.1 AMENITY, Total Units, Amenity (Outdoor / Unit, Indoor / Unit). Rows include BUILDING A, BUILDING B, BUILDING C, and GRAND TOTAL.

5.0 PARKING

Table with columns: 5.1 CAR PARKING, Level, Residential Car Parking (Regular, BF, Total), Visitor Car Parking (Regular, BF, Total), Total Car Parking. Rows include BUILDING A, BUILDING B, BUILDING C, and TOTAL.

Table with columns: 5.2 BICYCLE PARKING, Level, Bicycle Parking (Long-Term, Short-Term), Total Bicycle Parking. Rows include BUILDING A, BUILDING B, BUILDING C, and GRAND TOTAL.

- Bicycle Parking Rates
0.9 Long-Term Parking Spaces per Unit
0.1 Short-Term Parking spaces per Unit

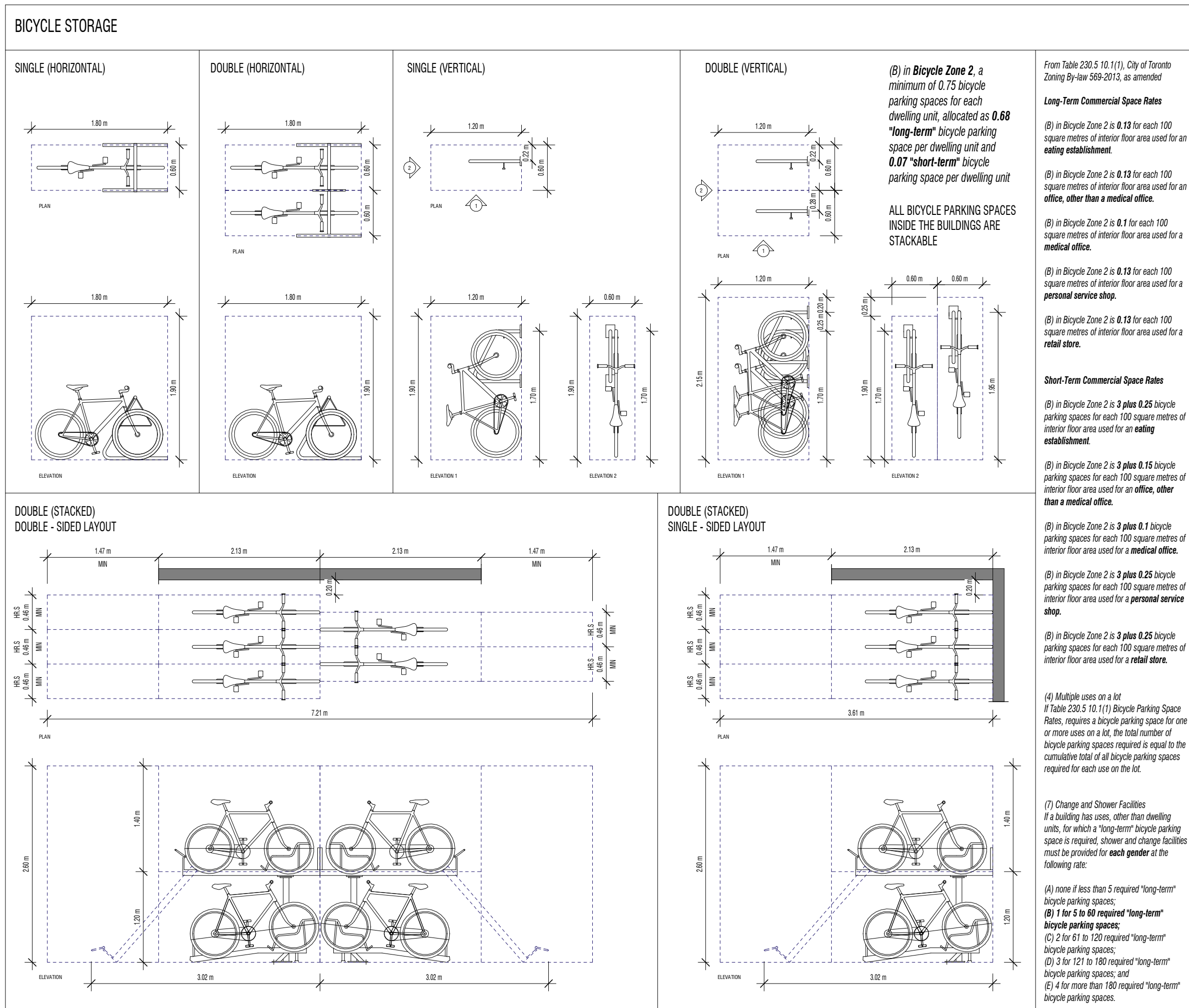
6.0 STORAGE

7.0 LOADING

Table with columns: 7.1 LOADING, Count, Type. Rows include BUILDING A, BUILDING B, BUILDING C.

8.0 WASTE

Table with columns: 8.1 WASTE STORAGE AREA, Level, Comments, Area. Rows include BUILDING A, BUILDING B, BUILDING C.

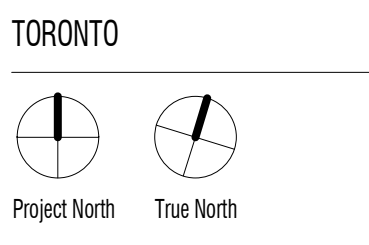


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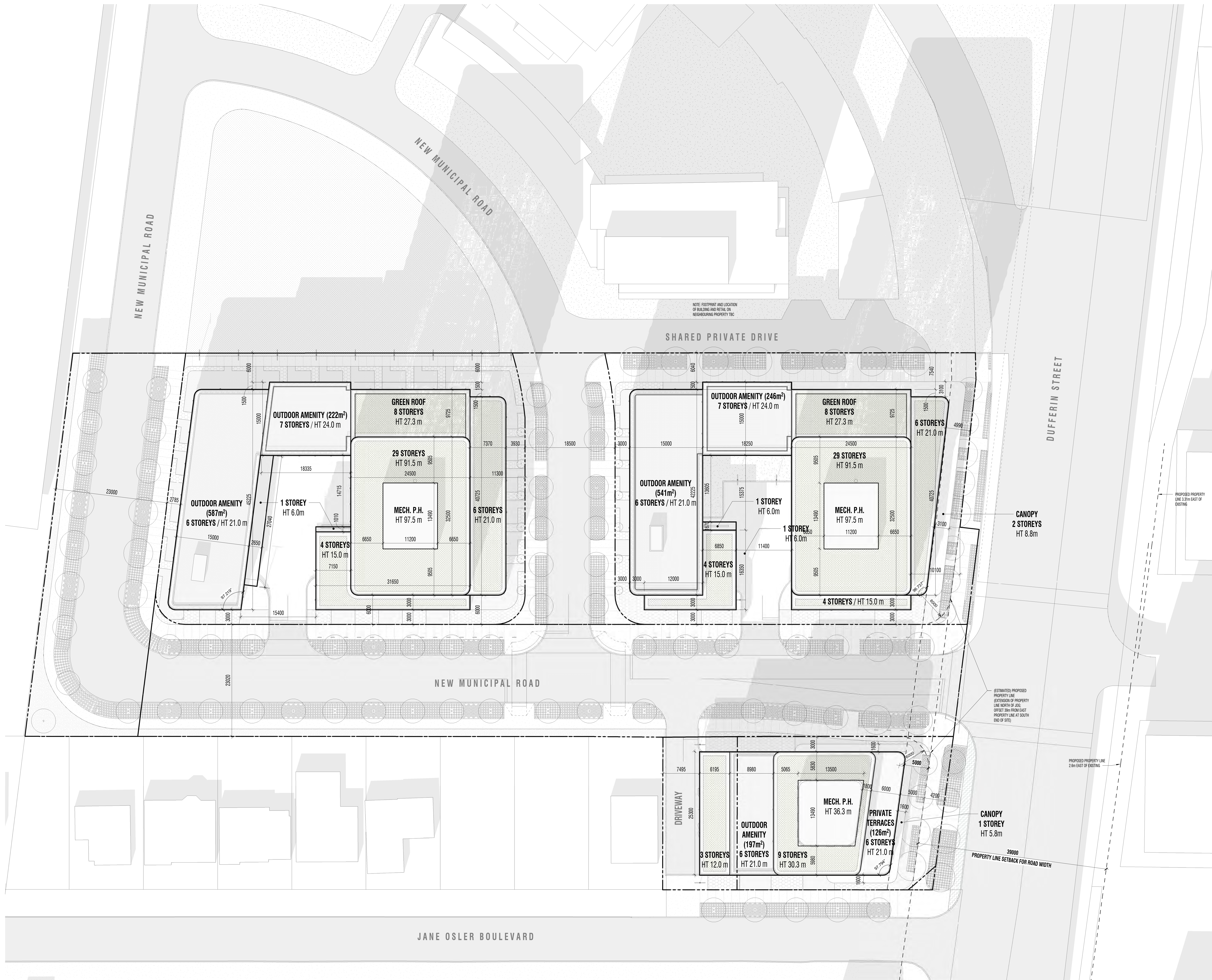
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SCALE As indicated
PROJECT NO. 202211
ISSUE DATE

STATISTICS



GREEN ROOF STATISTICS - BUILDING A

Available Roof Space Calculation	Required	Provided
Gross Floor Area, as defined in Green Roof Bylaw(m ²)		x
Total Roof Area		2475
Area of Residential Private Terraces (m ²)		-
Roofing Outdoor Amenity Space, if in a Residential Building (m ²)	587 + 222 = 809	-
Area of Renewable Energy Devices (m ²)	-	-
Tower (Roof Area with floor plate less than 750 (m ²))	-	-
Total Available Roof Space (m ²)		1666
Green Roof Coverage		
Coverage of Available Roof Space (m ²)	998	1088
Coverage of Available Roof Space (%)	60%	65%

GREEN ROOF STATISTICS - BUILDING B

Available Roof Space Calculation	Required	Provided
Gross Floor Area, as defined in Green Roof Bylaw(m ²)		x
Total Roof Area		2425
Area of Residential Private Terraces (m ²)		-
Roofing Outdoor Amenity Space, if in a Residential Building (m ²)	541 + 246 = 787	-
Area of Renewable Energy Devices (m ²)	-	-
Tower (Roof Area with floor plate less than 750 (m ²))	-	-
Total Available Roof Space (m ²)		1638
Green Roof Coverage		
Coverage of Available Roof Space (m ²)	983	1026
Coverage of Available Roof Space (%)	65%	67%

GREEN ROOF STATISTICS - BUILDING C

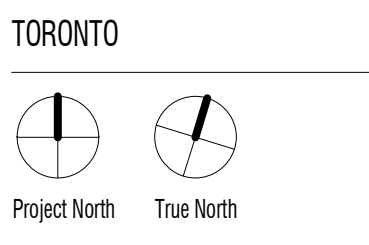
Available Roof Space Calculation	Required	Provided
Gross Floor Area, as defined in Green Roof Bylaw(m ²)		x
Total Roof Area		1534
Area of Residential Private Terraces (m ²)		-
Roofing Outdoor Amenity Space, if in a Residential Building (m ²)	-	-
Area of Renewable Energy Devices (m ²)	-	-
Tower (Roof Area with floor plate less than 750 (m ²))	-	-
Total Available Roof Space (m ²)		711
Green Roof Coverage		
Coverage of Available Roof Space (m ²)	213	362
Coverage of Available Roof Space (%)	30%	51%

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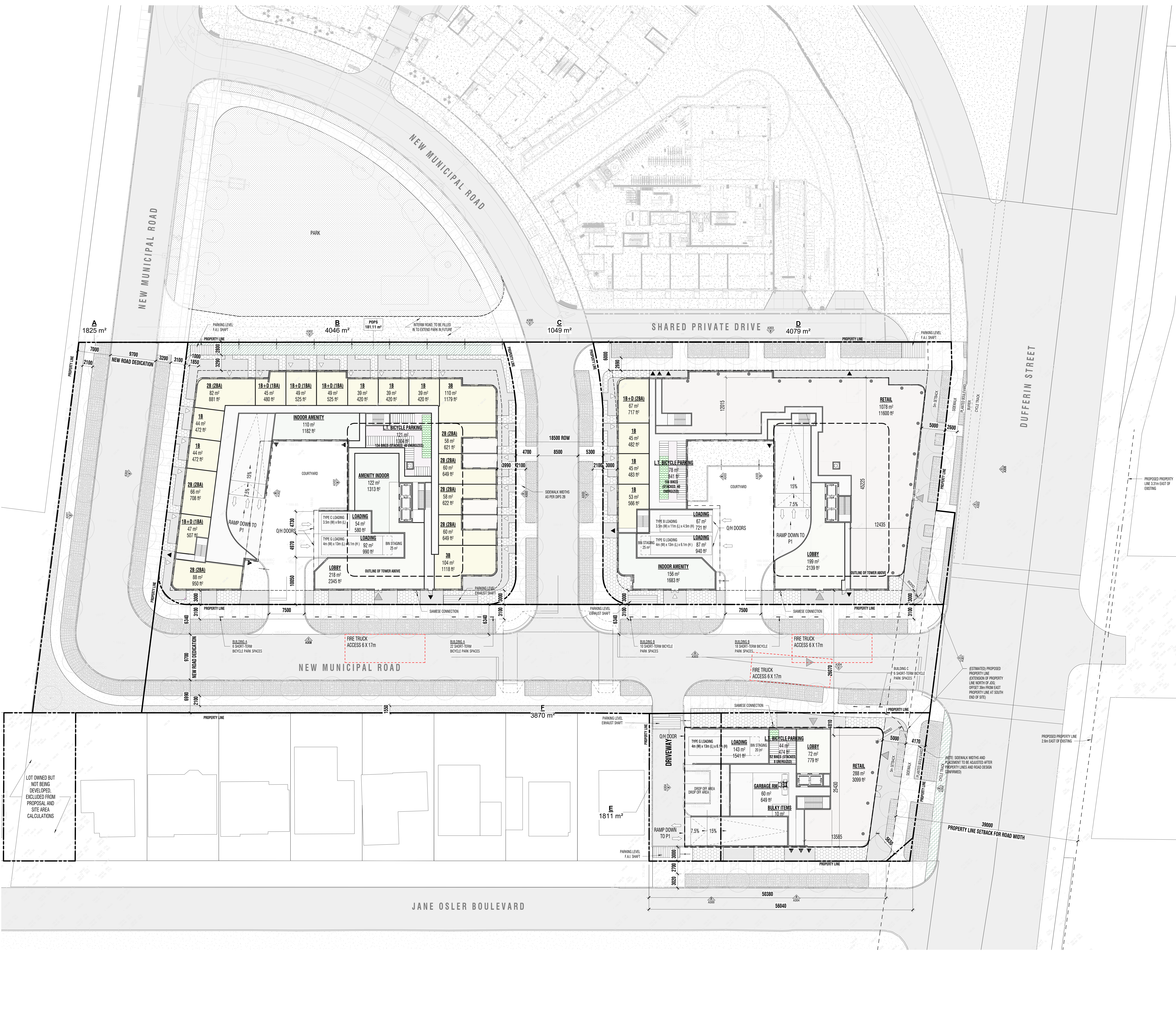
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ROOF PLAN



SITE PLAN LEGEND

- +XXXX PROPOSED ELEVATION
- XXXX EXISTING ELEVATION
- XXXX AD AREA DRAINAGE
- XXXX SW STORM WATER
- XXXX CB CATCH BASIN
- PROPERTY LINE
- SETBACK
- FIRE TRUCK ROUTE
- PARKING STRUCTURE BELOW
- DESIGNATED P.O.P.S. AREA
- RESIDENTIAL
- RESIDENTIAL LOBBY
- RESIDENTIAL INDOOR AMENITY
- COMMERCIAL
- BICYCLE STORAGE
- ▲ MAIN RES ENTRANCE
- △ RES ENTRANCE
- ▲ NON-RES ENTRANCE
- ▲ EXIT
- ↑ VEHICULAR ENTRANCE/EXIT
- FIRE HYDRANT
- + SHAWSEE CONNECTION
- STREET LIGHT
- PEDESTRIAN LIGHT
- BOLLARD LIGHT
- BOLLARDS
- BICYCLE SHARING STATION
- BIKE RING
- PROPOSED CANOPY TREE
- EXISTING TREE
- EXISTING TREE TO BE PROTECTED
- PROPOSED UNDERSTOREY TREE
- GRASSES AND SHRUBS
- HIGH-ALBEDO PAVERS
- SR VALVE: 20 OR BETTER
- CONCRETE PAVING
- SR VALVE: 20 OR BETTER
- CONCRETE PAVING
- SR VALVE: 20 OR BETTER
- BICYCLE LANE
- SOD
- BLACK MULCH
- RUBBERIZED PAVING
- WOOD DOCKING SR VALVE: 20 OR BETTER
- ARTIFICIAL TURF GRASS / OOD RELIEF AREA

NOTES

- A TRUCKER ON-SITE STAFF MEMBER MUST BE AVAILABLE TO MANEUVER TRUCKS FOR THE COLLECTION TRUCKS AND ALSO ACT AS A GUARD WHEN THE TRUCK IS REVERSEING IN THE EVENT THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLES ARRIVE AT THE SITE. THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
- TYPE G LOADING & 1m MINIMUM VERTICAL CLEARANCE. MINIMUM 200mm THICK REINFORCED CONCRETE SLAB IN LOADING SPACE AND STAGING AREA. FLOOR GRADE NOT TO EXCEED +2%.
- THE OVERHEAD DOOR ADJACENT TO THE TYPE G LOADING AREA WILL BE OPEN UPON THE ARRIVAL OF THE TRUCK TO ALLOW IT TO REVERSE FROM THE TYPE G LOADING AREA PARALLEL TO THE SITE IN A FORWARD MOTION.
- A WARNING SYSTEM IS TO BE PROVIDED TO CAUTION MOTORISTS LEAVING THE PARKING GARAGE OF HEAVY VEHICLES WHEN LOADING. SYSTEM TO INCLUDE LIGHTS AND SIGNS.
- ALL ACCESS DRIVEWAYS TO BE USED BY THE COLLECTION VEHICLE TO HAVE A MAXIMUM GRADIENT OF 8% WITH A MINIMUM VERTICAL CLEARANCE OF 4.4 METERS THROUGHOUT. A MINIMUM WIDTH OF 4.5 METERS THROUGHOUT AND BE 4 METERS WIDE AT POINT OF INGRESS AND EGRESS.
- PROPOSED ACCESS ROUTE FOR WASTE COLLECTION VEHICLE TO HAVE MINIMUM 4.4M VERTICAL CLEARANCE THROUGHOUT AND DESIGNED TO SAFELY SUPPORT 35,000 KG.
- STRUCTURAL ENGINEER TO DESIGN AREA TO COMPLY AS FOLLOWS: (A) DESIGN CODE: ONTARIO BUILDING CODE (B) DESIGN LOAD: CITY BULK LIFT VEHICLE IN ADDITION TO BUILDING CODE REQUIREMENTS (C) IMPACT FACTOR: 5% FOR MAX. VEHICULAR SPEEDS TO 15KM/H AND 30% FOR HIGHER SPEEDS.
- NON-RESIDENTIAL COMPONENT WILL ONLY SCHEDULE USE OF THE TYPE G LOADING SPACE ON DIFFERENT DAYS FROM THE COLLECTION DAYS OF THE RESIDENTIAL COMPONENT TO ENSURE THAT THE TYPE G LOADING SPACE WILL BE VACANT FOR CITY WASTE COLLECTION.
- 4-FIRE ACCESS ROUTE MIN. 6m WIDE WITH 5m HEIGHT CLEARANCE. CHANGE IN GRADIENT NOT MORE THAN 8% IN 15m. LOAD SUPPORT SUFFICIENT FOR EQUIPMENT. SURFACE TO BE ACCESSIBLE IN ALL CLIMATE CONDITION FOR ALL TRUCK DIAGRAM MOVEMENT REFER TO TRAFFIC CONSULTANT REPORT - PATH SHOWN FOR CONTEXT.
- FIRE ACCESS ROUTE MIN. 6m WIDE WITH 5m HEIGHT CLEARANCE. CHANGE IN GRADIENT NOT MORE THAN 8% IN 15m. LOAD SUPPORT SUFFICIENT FOR EQUIPMENT. SURFACE TO BE ACCESSIBLE IN ALL CLIMATE CONDITION FOR ALL TRUCK DIAGRAM MOVEMENT REFER TO TRAFFIC CONSULTANT REPORT - PATH SHOWN FOR CONTEXT.
- BE ADVISED THAT SHOULD ANY PARTY INCLUDING THE OWNER OR ANY SUBSEQUENT OWNER APPLY FOR MORE THAN ONE CONDOMINIUM CORPORATION (CONDOMINIUMS) AND/OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION, STAFF MAY REQUIRE LEGAL ASSURANCES INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL.
- VENTILATION GRATING TO HAVE A POROSITY OF LESS THAN 20mm X 20mm OR 40mm X 10mm.

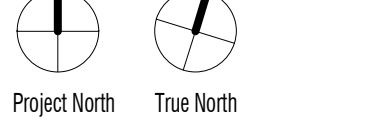
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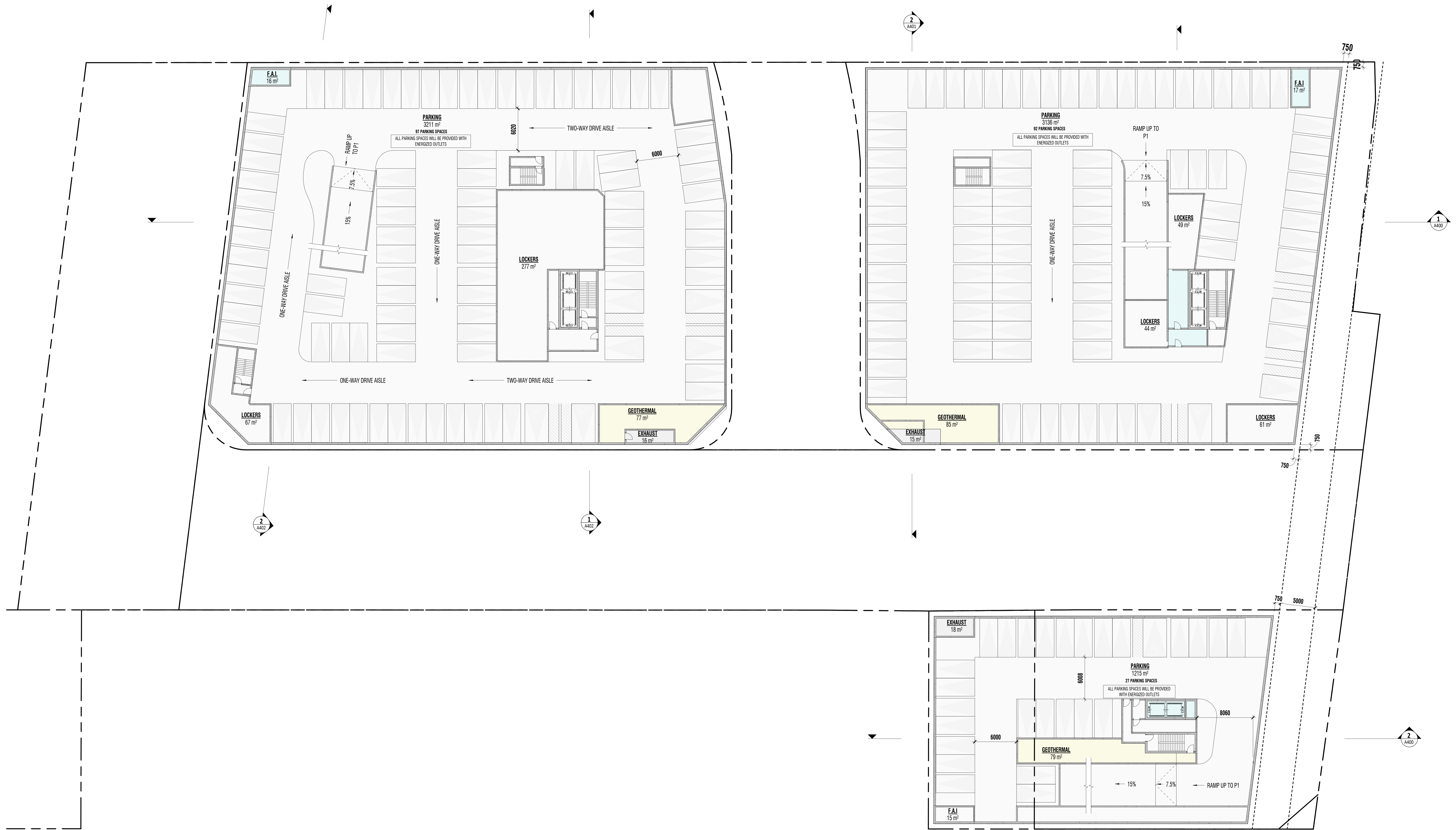
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GROUND FLOOR SITE PLAN



5.1 CAR PARKING							
Level	Residential Car Parking			Visitor Car Parking			Total Car Parking
	Regular	BF	Total	Regular	BF	Total	
BUILDING A							
P1	36	0	36	36	3	39	75
P2	89	6	95	0	0	0	95
	125	6	131	36	3	39	170
BUILDING B							
P1	35	0	35	35	2	37	72
P2	86	6	92	0	0	0	92
	121	6	127	35	2	37	164
BUILDING C							
P1	15	0	15	0	1	1	16
P2	26	1	27	0	0	0	27
	41	1	42	0	1	1	43
TOTAL	287	13	300	71	6	77	377

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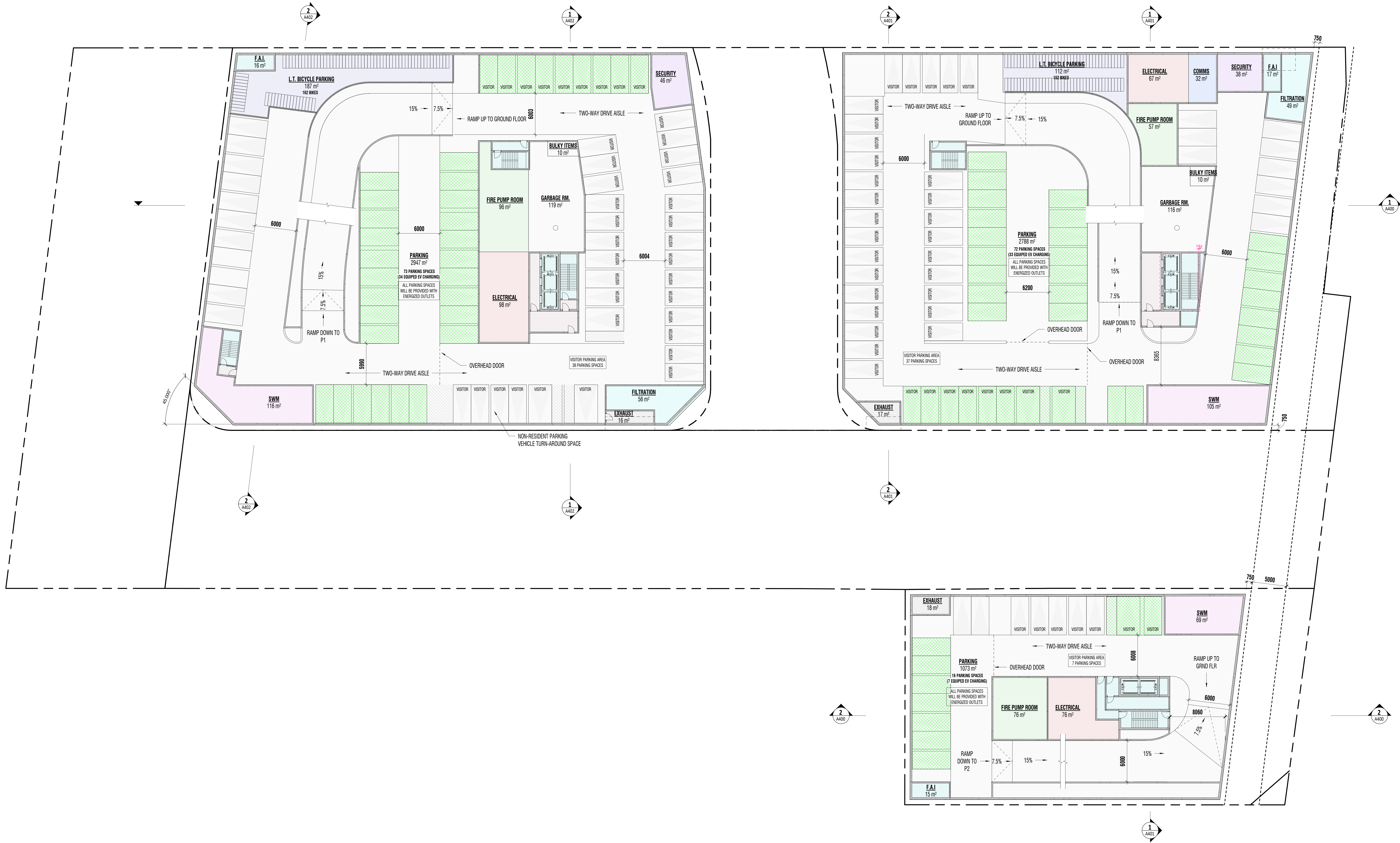
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**LEVEL P2
 FLOOR PLAN**



5.1 CAR PARKING						
Level	Residential Car Parking			Visitor Car Parking		
	Regular	BF	Total	Regular	BF	Total
BUILDING A						
P1	36	0	36	36	3	39
P2	89	6	95	0	0	95
TOTAL	125	6	131	36	3	39
BUILDING B						
P1	35	0	35	35	2	37
P2	86	6	92	0	0	92
TOTAL	121	6	127	35	2	37
BUILDING C						
P1	15	0	15	0	1	16
P2	26	1	27	0	0	27
TOTAL	41	1	42	0	1	43
TOTAL	287	13	300	71	6	77

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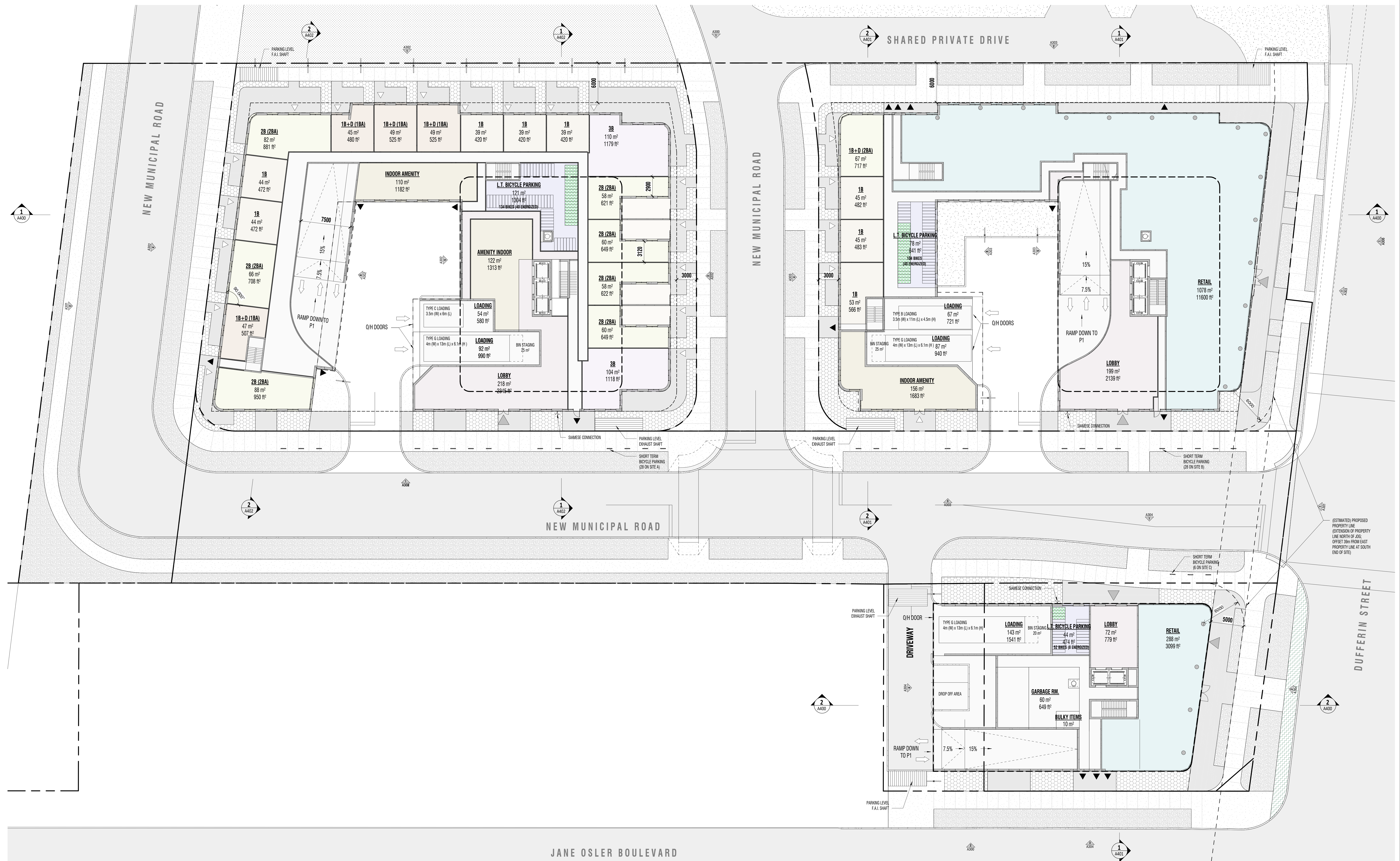
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**LEVEL P1
 FLOOR PLAN**

A105

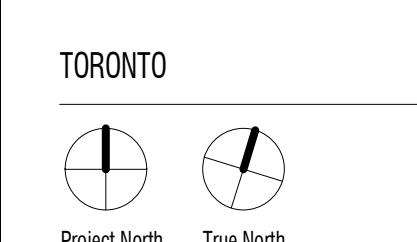


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SCALE: 1:200
 PROJECT NO.: 202211
 ISSUE DATE: -

LEVEL 1 FLOOR PLAN

A200

Appendix B

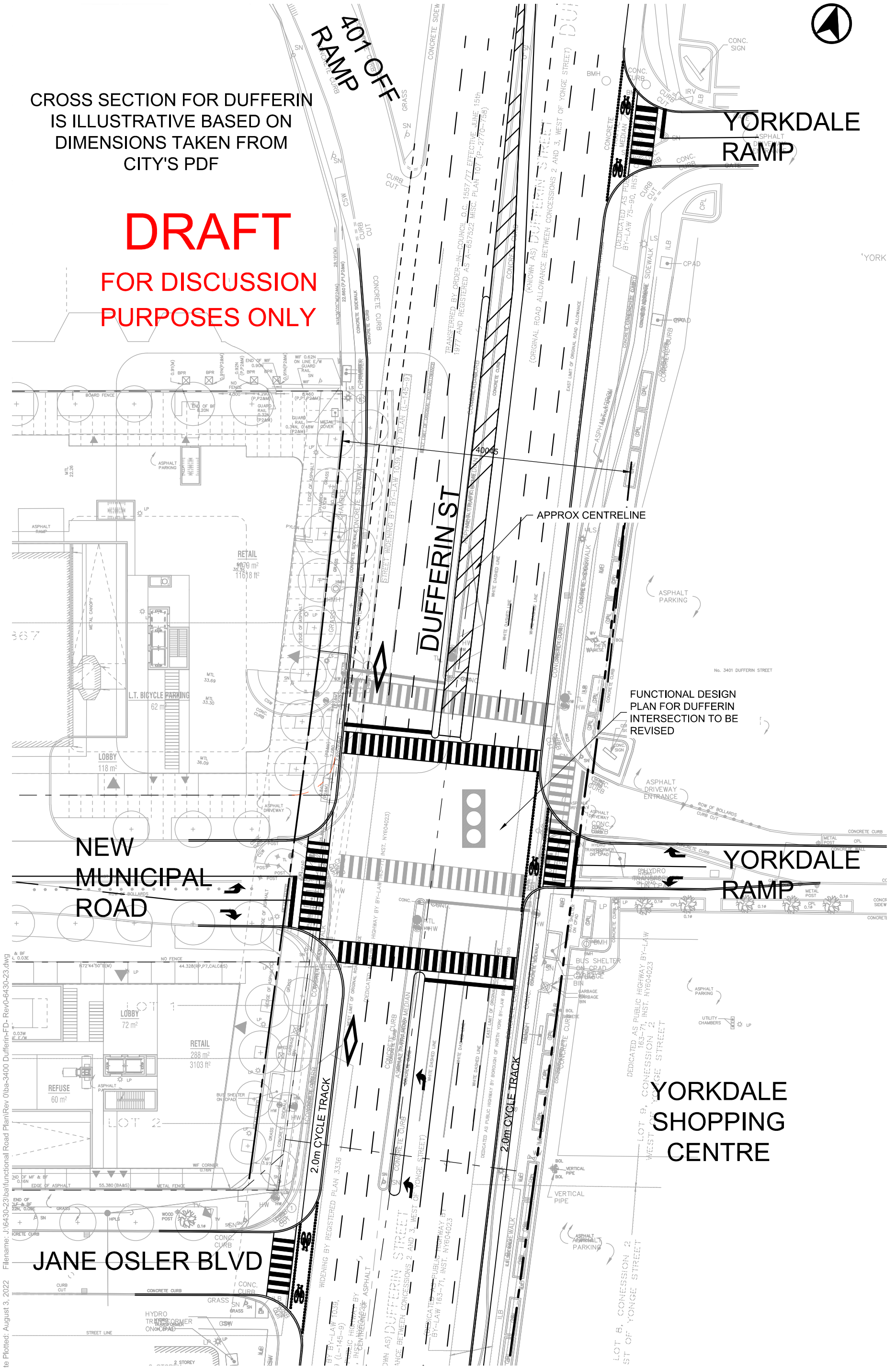
Functional Illustrative Dufferin Intersection Plan – Interim Condition





CROSS SECTION FOR DUFFERIN IS ILLUSTRATIVE BASED ON DIMENSIONS TAKEN FROM CITY'S PDF

DRAFT
FOR DISCUSSION
PURPOSES ONLY



Date Plotted: August 3, 2022
Filename: J:\6430-23\functional Road Plan\Rev 01ba-3400 Dufferin-FD - Rev0-6430-23.dwg

JANE OSLER BLVD

NEW MUNICIPAL ROAD

DUFFERIN ST

YORKDALE RAMP

YORKDALE RAMP

YORKDALE SHOPPING CENTRE

FUNCTIONAL DESIGN PLAN FOR DUFFERIN INTERSECTION TO BE REVISED

APPROX CENTRELINE



FUNCTIONAL ILLUSTRATIVE
DUFFERIN
INTERSECTION PLAN -
INTERIM CONDITION

Project: 3400 Dufferin
Project No. 6430-23
Date: August 3, 2022
Revised: --

Scale: 1:500

Drawing No. FP-01

Appendix C
Dufferin Street Transportation Master Plan
Traffic Analysis Details



1 Transportation analysis tables

The tables in this section report the background information used in the transportation analysis.

Table 1: Local trips (Total: 2,597 trips) between adjacent zones along the study corridor (TTS, 2011)

Mode	Percentage
Auto	81.9%
Transit	2.7%
Cycle	0%
Walk	15.4%

Table 2: Level of service ratings and the control delay per vehicle

Level of Service (LOS)	Control Delay per Vehicle (seconds)
A	<=10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Table 3: Data Source for Existing Traffic Counts

Intersection (Dufferin Avenue at) / Modelling Period	AM Peak Hour	PM Peak Hour
Bridgeland Avenue/Yorkdale Road	City of Toronto, Traffic Safety Unit (TSU)	Yorkdale East Expansion Study 2013
Car Dealership (Honda)/Yorkdale Mall Access*	-	Yorkdale East Expansion Study 2013
Cartwright Avenue*	-	-
Bentworth/Ranee Avenue	City of Toronto (TSU)	Yorkdale East Expansion Study 2013
Orfus Road	City of Toronto (TSU)	City of Toronto (TSU)
Samor Road	City of Toronto (TSU)	City of Toronto (TSU)
Apex Road	City of Toronto (TSU)	3130 Dufferin Street Redevelopment Study
Lawrence West Avenue	City of Toronto (TSU)	1100 Caledonia Road TIS 2010

*volumes balanced based on upstream / downstream counts where existing counts not available

Table 4: Number of collisions (2008-2012) by intersection in the study corridor

Dufferin Street at	Number of Collisions
Lawrence Avenue West	156
Dane Avenue	14
Apex Road	18
Celt Avenue	13

Dufferin Street at	Number of Collisions
Samor Road	24
Orfus Road	94
Sparrow Avenue	6
Ranee Avenue	39
Bentworth Avenue	22
Glen Belle Crescent	25
McAdam Avenue	28
Yorkdale Entry Ramp	8
Cartwright Avenue	44
Jane Osler Boulevard	17
Bridgeland Avenue	132

Table 5: Auto Occupancy: (NCHRP 684 for residential/office/commercial for internal trip capture)

Land Use	Auto Occupancy
Residential	1.27
Office	1.26
Commercial/Retail	1.49

Table 6: Trip Generation Rates

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Residential*	0.05	0.24	0.29	0.21	0.10	0.31
Street Retail ITE 820	exp(0.59*ln(GFA))+2.32; In: 0.61, Out: 0.39			exp(0.67*ln(GFA))+3.37; In: 0.49, Out: 0.51		
Large Retail ITE 813	0.94	0.73	1.67	exp(1.32*ln(GFA))-0.16; In: 0.50, Out: 0.50		
Office**	0.88	0.12	1.00	0.05	0.92	0.97
Hotel ITE 310	exp(0.87*ln(no. of rooms))+0.02 In: 0.55, Out: 0.45			exp(ln(no. of rooms))-0.58 In: 0.58, Out: 0.42		

*Downsview Secondary Plan High Res Condo>1km from subway; **Downsview Secondary Plan Office>1km from subway; GFA: Gross Floor Area. Note: Residential and office trips generated using above rates are used as such and not factored since using auto trip rates from Downsview study provides local area planning context.

Table 7: Dufferin Street Mode Share, 2011: modal split for the existing corridor based on the Transportation Tomorrow Survey (TTS), 2011 data.

Dufferin Street	AM		PM		2011 TTS
Mode Share	In	Out	In	Out	
Auto	80%	63%	69%	77%	
Transit	17%	21%	28%	22%	
Other	3%	16%	2%	1%	

Table 8: EMME Raw Mode Share

	AM		PM		2031 EMME
	To	From	To	From	
Auto Mode Share	74%	57%	57%	74%	
Transit Mode Share	23%	37%	37%	23%	
Other	3%	6%	6%	3%	

Table 9 shows the assumptions made for auto mode shares that reflect ITE trip rates. Note that for the purposes of creating auto origin-destination matrix, assumptions on share of other modes such as transit and cycling for conditions where ITE trip rates are generated, is not required, therefore, has not been considered.

Table 9: ITE Auto Mode Share

Auto Mode Share - for conditions where ITE Trip Rates are generated	Source
Residential	75%
Street Retail	85%
Large Retail	90%
Office	90%
Hotel	90%
Industrial	90%

Table 10: Distribution of auto trips (TTS 2011): distribution of all trips to/from the TAZs adjacent to the study corridor, based on TTS 2011, for eight (8) directions.

AM OUT	NEE	NEN	NWN	NWW	SEE	SES	SWS	SWW
157	16.60%	11.65%	9.38%	4.74%	6.08%	35.46%	16.08%	0.00%
179	14.29%	6.69%	8.02%	5.84%	10.40%	28.75%	14.95%	11.06%
180	20.55%	6.85%	15.22%	5.48%	5.63%	15.68%	3.20%	27.40%
PM OUT	NEE	NEN	NWN	NWW	SEE	SES	SWS	SWW
157	18.35%	11.42%	11.25%	10.25%	11.55%	16.77%	9.15%	11.25%
179	15.38%	14.20%	10.70%	9.13%	11.91%	11.84%	14.16%	12.67%
180	12.14%	13.04%	12.27%	11.99%	7.09%	21.97%	8.43%	13.07%
AM IN	NEE	NEN	NWN	NWW	SEE	SES	SWS	SWW
157	19.86%	11.30%	12.79%	10.05%	9.99%	15.52%	9.16%	11.32%
179	14.32%	15.81%	8.28%	13.17%	8.55%	7.93%	16.53%	15.41%
180	15.01%	12.41%	16.36%	14.03%	3.32%	13.70%	10.47%	14.71%
PM IN	NEE	NEN	NWN	NWW	SEE	SES	SWS	SWW
157	20.26%	5.75%	9.68%	9.53%	16.78%	22.48%	9.83%	5.70%
179	18.66%	4.64%	8.31%	7.06%	9.42%	22.96%	19.14%	9.81%
180	8.78%	9.39%	13.66%	7.52%	7.08%	27.60%	12.68%	13.29%

Note: Land use blocks 1 to 8 are part of Traffic Analysis Zone (TAZ) #157, blocks 9 to 11 are part of TAZ #179 and blocks 12 to 14 are part of TAZ#180. The respective distribution percentages in table above are applied to estimate movement of traffic for each block.

Table 11: Preferred land use design option

Blocks #	Area m ²	GFA m ²				Total GFA	Res Units	Street 1000sqft	Large 1000sqft	Hotel Rooms	Vehicular Trips AM			Vehicular Trips PM		
		Res	Street	Large	Hotel						In	Out	Two-way	In	Out	Two-way
1	37,392	70,110	1,169	0	22,202	93,480	974	13	0	191	110	269	379	268	171	440
2	2,849	9,473	499	0	0	9,972	132	5	0	0	18	37	55	44	34	78
3	2,715	8,508	210	0	0	8,718	118	2	0	0	13	32	45	34	24	58
4	4,476	14,883	783	0	0	15,666	207	8	0	0	25	57	82	64	50	114
5	3,805	12,652	666	0	0	13,318	176	7	0	0	22	49	71	56	44	99
6	37,244	88,455	4,656	0	0	93,110	1,229	50	0	0	103	315	418	339	231	570
7	31,699	75,285	3,962	0	0	79,248	1,046	43	0	0	90	269	359	293	202	494
8	24,969	67,430	3,549	0	0	70,979	937	38	0	0	82	242	324	265	184	448
9a	1,348	4,482	236	0	0	4,718	62	3	0	0	11	19	30	24	21	45
9	18,252	99,500	6,400	0	0	105,900	1,382	69	0	0	119	356	475	390	272	662
10	4,958	16,485	868	0	0	17,353	229	9	0	0	28	63	91	75	58	133
11	11,581	38,507	2,027	0	0	40,534	535	22	0	0	52	142	194	159	115	275
12	3,539	11,767	619	0	0	12,387	163	7	0	0	21	46	67	52	41	94
13	3,310	11,006	579	0	0	11,585	153	6	0	0	20	43	63	50	39	89
14	50,724	0	0	25,362	0	25,362	0	0	273	0	172	101	273	249	325	574
Total	238,861	528,542	26,222	25,362	22,202	602,328	7,341	282	273	191	886	2,040	2,926	2,363	1,811	4,174

Table 12: Total trips and mode share for preferred land use design option

Mode	AM	PM	Average effective mode share
Auto	4,100	5,800	60%
Transit	1,800	3,200	30%
Other	500	1,000	10%
Total	6,400	10,000	100%

*Auto passengers estimated using average occupancy of 1.34 persons/vehicle. Conservative rounding up performed.
 **rounded to nearest 100

Table 13: Internal trip capture and by-pass trips for preferred land use design option

Internal Capture (for street and large format retail)	Preferred Scenario				
	AM		PM		
	In	Out	In	Out	
Block 1	1,2,3,4,5,12,13,14	14%	10%	31%	35%
Block 2	6,7,8,9,9a,10,11	10%	4%	19%	26%

By Pass trips (for large format retail blocks only)	Preferred Scenario	
	AM	PM
	0%	8%

Table 14: Total trips and mode share for all land use design options

Mode	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Auto	4,900	7,100	4,400	6,500	4,900	8,100	3,900	5,500	3,000	4,700
Transit	2,200	4,000	2,000	3,700	2,400	5,300	1,700	3,100	1,400	3,000
Other	600	1,200	600	1,100	700	1,700	500	900	400	900
Total	7,700	12,300	7,000	11,300	8,000	15,000	6,100	9,500	4,800	8,600

*Auto passengers estimated using average vehicle occupancy of 1.34 persons/vehicle / **rounded to nearest hundred

Table 15: Internal trip capture and by-pass trips for all land use design options

Internal Capture (for street and large format retail)		Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5											
		AM		PM		AM		PM		AM		PM									
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out								
Block 1	1,2,3,4,5,12,13,14	13%	9%	28%	32%	13%	9%	28%	32%	13%	10%	30%	35%	14%	10%	30%	34%	14%	10%	30%	34%
Block 2	6,7,8,9,9a,10,11	10%	4%	20%	26%	10%	4%	20%	27%	13%	9%	28%	31%	10%	4%	19%	26%	12%	7%	28%	32%
By Pass trips (for large format retail blocks only)		Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5											
		AM		PM		AM		PM		AM		PM									
		0%	8%	0%	8%	0%	6%	0%	8%	0%	8%										

2 Intersection Volume Estimation

Intersection Counts: To estimate the turning movement counts at each intersection along the corridor for 2031, the following equation is applied for each scenario for both AM and PM peak hour:

$$(Existing\ 2011-2012\ counts - Existing\ 2013\ vol) * Growth\ Factor + Future\ 2031\ vol$$

Where,
Existing 2011-2012 counts: observed turning movement counts obtained from the City
Existing 2013 vol: turning movement volume of traffic at intersection due to existing land use in study area
Growth factor: 7% growth factor is used for 2031. This is based on trend of total intersection vehicular volume at Lawrence/Dufferin and Keele/Lawrence in the last 20 years. Both intersections are key nodes in this area and are considered good indicators of overall background traffic growth.
Future 2031 vol: turning movement volume of traffic at intersection due to future land use in study area

Inputs to Midblock v/c Calculation: The total northbound/southbound traffic volume is extracted from the estimated 2031 turning movement counts at midblocks to estimate volume/capacity ratios for each land use option and between key intersections along the corridor. This provides the first stage of the analysis to establish the level of congestion on Dufferin Street to determine if a land use scenario is suitable for further analysis or not. Northbound (NB) ratios are calculated based on capacity for two (2) through lanes for midblocks from Lawrence Avenue up till Yorkdale Mall Access #1 and three (3) through lanes between Yorkdale Mall Access #1 and Bridgeland Avenue. Southbound (SB) ratios are calculated based on three (3) through lanes from Bridgeland Avenue to Yorkdale Mall Access #1 and two (2) through lanes for all other midblocks (including SB approach to Bridgeland Avenue) till Lawrence Avenue. The capacity is assumed to be a constant at 900 vehicles per hour per lane along the corridor.

Table 16: V/C ratios for NB/SB AM/PM, Scenario 1, 2, 3, 4, 5 Ex: Existing; Sc: Scenario

NB PM	Ex	Sc 1	Sc 2	Sc 3	Sc 4	Sc 5
Yorkdale-Bridgeland	0.60	0.75	0.72	0.82	0.68	0.67
Ranee-Yorkdale	0.87	1.12	1.07	1.26	0.99	0.97
Orfus-Ranee	0.74	1.00	0.95	1.15	0.88	0.85
Samor-Orfus	0.56	0.84	0.81	0.94	0.73	0.71
Lawrence-Samor	0.64	0.96	0.90	1.02	0.81	0.75
South of Lawrence	0.74	1.06	1.00	1.09	0.93	0.84
Average	0.69	0.95	0.91	1.05	0.84	0.80

NB AM	Ex	Sc 1	Sc 2	Sc 3	Sc 4	Sc 5
Yorkdale-Bridgeland	0.59	0.78	0.75	0.75	0.73	0.68
Ranee-Yorkdale	0.62	0.96	0.91	0.90	0.86	0.75
Orfus-Ranee	0.53	0.85	0.79	0.78	0.76	0.63
Samor-Orfus	0.43	0.66	0.63	0.63	0.60	0.52
Lawrence-Samor	0.66	0.82	0.80	0.83	0.77	0.73
South of Lawrence	0.67	0.75	0.74	0.80	0.72	0.71
Average	0.58	0.80	0.77	0.78	0.74	0.67

SB PM	Ex	Sc 1	Sc 2	Sc 3	Sc 4	Sc 5
North of Bridgeland	0.61	0.90	0.85	0.93	0.78	0.72
Bridgeland-Yorkdale	0.65	0.90	0.86	0.92	0.79	0.74
Yorkdale-Ranee	0.95	1.29	1.24	1.32	1.16	1.08
Ranee-Orfus	0.80	1.19	1.12	1.22	1.04	0.95
Orfus-Samor	0.72	0.98	0.93	1.05	0.85	0.80
Samor-Lawrence	0.85	1.08	1.03	1.21	0.95	0.92
Average	0.76	1.05	1.01	1.11	0.93	0.87

SB AM	Ex	Sc 1	Sc 2	Sc 3	Sc 4	Sc 5
North of Bridgeland	0.46	0.55	0.53	0.62	0.51	0.50
Bridgeland-Yorkdale	0.60	0.72	0.70	0.77	0.67	0.66
Yorkdale-Ranee	1.05	1.21	1.19	1.29	1.16	1.14
Ranee-Orfus	0.94	1.24	1.21	1.33	1.16	1.14
Orfus-Samor	0.81	1.18	1.13	1.19	1.06	0.99
Samor-Lawrence	0.79	1.33	1.25	1.25	1.18	1.01
Average	0.77	1.04	1.00	1.07	0.96	0.91

3 Evaluation

Table 17 Evaluation Criteria Matrix

Considerations	Criterion	Key Question	Red (No)	Yellow (Challenging)	Green (Yes)
City Planning Framework	Policy Fit	Can it conform with adopted city policies?	Does not conform to City policies and planning direction	Conforms to City policies to an extent with some non-conformance	Conforms to City policies and planning direction
Congestion/network modal imbalance	Operations: pedestrian, cycle, transit and vehicular	Can it enhance operations?	Does not improve operations for any mode	Generally improves operations for all modes, but still challenging for some modes	Improves operations for all modes
Limited connectivity	East-West Connections	Can it improve east-west connections?	Insufficient conditions for east-west connectivity	Some improvements resulting in better east-west connectivity	Major improvements resulting in enhanced east-west connectivity
	North-South Connections	Can it improve north-south connections?	Insufficient conditions for north-south connectivity	Some improvements resulting in better north-south connectivity	Major improvements resulting in enhanced north-south connectivity
	Access	Can it provide efficient access to properties?	Poor access to properties / destinations	Fair access to properties / destinations	Enhanced access to properties / destinations
Socio-Economic	Aesthetically Vital/Socio-Economic Environment	Can it provide an aesthetically vital and vibrant public realm?	No improvements resulting in low permeability within employment lands/retail/residential areas	Limited improvements to permeability within employment lands/retail/residential areas	Major improvements results in enhanced permeability within employment lands/retail/residential areas
Cultural and Natural Environment	Impact on cultural environment	Can it improve the cultural environment?	No improvements	Some improvements	Major improvements
	Impact on natural environment (Air quality and noise impacts)	Can it improve the natural environment?	No improvements	Some improvements	Major improvements
Implementation	Feasibility	How feasible is the solution to implement?	Not feasible	Somewhat Feasible	Feasible
Land Use	Fit in Space Available	Can it fit in the space available without additional land?	Does not fit	Fits with certain reservations	Fits with no reservations
	Support to Land Use and Built Form Recommendations	Can it support the recommended preferred redevelopment option?	Does not support recommended preferred redevelopment option	Limited support to recommended preferred redevelopment option	Supports recommended preferred redevelopment option

3.1 Descriptions of components of alternative transportation planning solutions

3.1.1 TDM

- *TDM Strategies:* help manage demand by promoting sustainable travel behavior and policy:
 - Recommend review of local parking by-law to reflect true local parking demand conditions informed by data collection. This should inform parking rates that could help manage auto travel demand.
 - Priority parking for carpool vehicles will help increase the vehicle occupancy rates. Provision of secure and convenient bicycle parking with new development will promote cycling, especially for short distance trips in a mixed land use environment.
 - Investigate potential for shared parking - parking jointly utilized by different facilities in an area by finding synergies in schedules and parking demand. This could help reduce the area covered by parking lots.
 - Implementing car sharing programs can help reduce auto ownership and promote use active transportation modes

3.1.2 Street network

- *New local roadways within larger development blocks:* Smaller block sizes promote active transportation trips, reduce auto use and provide a better grid for connectivity. This helps in development of a secondary street system that complements Dufferin Street in movement of people around the study area.
- *New roadway connections (i.e. Employment Lands, south of Lawrence):* Helps mitigate to an extent the constraints on movement imparted by the geographic location of the study area; provides internal routing options for people to navigate through the area, in both the east-west direction and supplementing Dufferin Street in the north-south direction.
- *Improved wayfinding and signage to key destinations:* Facilitates ease of movement for pedestrians and improve flow of vehicles.
- *Investigate Highway 401 eastbound off-ramp to Bridgeland Avenue:* Helps route truck traffic and other 'employment lands' related traffic through the ramp instead of Dufferin Street, thereby resulting in better management of traffic volume on Dufferin Street and reducing interaction between trucks and cars.
- *Investigate direct connection to Allen Road and eastbound Highway 401 from Dufferin Street:* Helps relieve the constraints created due to presence of rail corridor, Allen Road and Highway 401 in terms of accessing the general study area; provides more travel options.

3.1.3 Vehicular operations

- *Corridor Signal Retiming Program:* Signal retiming helps improve vehicular operations along the corridor. This program should include replacement of the old Main Traffic Signal System (MTSS) to an updated signal system (TransSuite or better).
- *Yorkdale Road/Bridgeland Avenue realignment south of Highway 401:* The realignment of this intersection is planned by the Ontario Ministry of Transportation (MTO). The following

specific improvements as part of the realignment should be considered for further investigation in consultation with the MTO:

- Southbound left turn at Bridgeland Avenue will provide additional opportunities for access to Yorkdale Shopping Centre. However, this provision must consider delay experienced for the north bound through movement, which is expected to have a considerably higher future volume.
- Since the realignment of the intersection involves moving the intersection further north, away from the abutment of the existing over-bridge from the Highway 401 off ramp to Yorkdale Shopping Centre, there may be an opportunity for localized widening to incorporate a north bound right.
- There may be an opportunity to widen the eastbound and westbound approaches to create a two lane each way roadway to reduce the east-west green time and provide more to the busier north-south movement. This could be implemented in conjunction with removing the north pedestrian crossing (if low pedestrian volume is anticipated), which would improve operations for eastbound left (another busy movement).
- *Convert Honda/Yorkdale Shopping Centre traffic signal to full move intersection:* Provides opportunity for better access to Yorkdale Shopping Centre. Helps develop a uniform street structure for pedestrian activity (crossing) in the northern section of the study corridor. Challenging to reconfigure Yorkdale Mall site since existing westbound approach allows truck only exit.
- *Centre turn lane / median throughout:* Centre turn lane can provide efficient access to local driveways without impeding through traffic in either direction along the study corridor. Provision of median, for example, at Cartwright Avenue, can help improve the safety by reducing chances of collisions on turning movements which is identified as an issue at this intersection. Centre median throughout would force right turning movement but would limit routing options and may not be feasible prior to implementation of a secondary network.

An additional consideration is that if consolidation of land parcels takes place, the number of driveways along Dufferin Street will also reduce, that will remove impedance for through movement due to right turning movements.
- *Remove McAdam Loop to Yorkdale Shopping Centre, replace with at-grade intersection:* Motivation for this solution is rooted in developing a park space for local residents, reduce maintenance costs, add pedestrian crossing opportunities, and potential opportunity for localised widening in the northbound direction, for the future mixed land use context. The removal of the loop will increase the southbound left movement at the proposed new intersection, as well as Honda/Yorkdale Shopping Centre traffic signal, and Bridgeland Avenue. This would impede the northbound through traffic (including buses) on Dufferin Street and so would not likely be preferred from a vehicular traffic perspective. Additional northbound through lanes may be required. To reduce impacts, turns could be provided with permissive phasing only however assignments indicate that permissive lefts will not accommodate all demand. Yorkdale Mall may want to maintain the loop given that it provides better vehicular access. The configuration of this intersection must be analyzed further as part of Phase 3. Placing an at-grade intersection at this location may be counterproductive to improvements made at Bridgeland Avenue.
- *Turning pockets at intersections (as necessary):* Helps improve intersection capacity as required.

- providing a westbound right at Rane Avenue would decrease the delays incurred by the vehicles going westbound through; this improvement should be considered along with realignment of the offset which will improve visibility and navigability of this intersection. This reconfiguration must be reviewed in detail (considering location of existing building structure located at the corners of this intersection, amongst others) as part of subsequent phases of the environmental assessment master planning process.
- providing eastbound left turn pocket will improve overall operations on Samor Road and Apex Road.
- *New traffic signal at Apex Road:* Helps provide efficient access to redeveloped parcels on the west, as well as an opportunity for pedestrian crossing between Lawrence Avenue West and Samor Road.

3.1.4 Transit

- *Potential GO Station between Lawrence Avenue West and Highway 401:* Helps improve regional rail connectivity by providing a GO station in the neighbourhood of the study area.
- *Operational Improvements:*
 - *Express Service:* will help improve in-vehicle-transit-time for long distance transit users as opposed to users making local trips along the stretch of the study corridor.
 - *Green light phase extension for buses:* will help provide priority to transit buses, with increase in ridership in the future, this would result in an overall better travel time for future transit users.
 - *Pavement markings at key stop locations:* will help identify key stop locations for unfamiliar transit users, and also make the transit system more attractive.
- *Physical Improvements:*
 - *Transit shelters and seating:* Helps in improving the overall transit user experience, especially, the perception of waiting time at transit stops during off-peak travel when buses operate at lower frequency.
 - *Security cameras:* Improves the perception of transit as a safe and convenient mode of travel and helps in law enforcement.
- *Repurpose southbound curb lane to Bus/HOV:* Bridgeland Avenue to Cartwright Avenue: has potential to improve transit travel by providing localized priority for a short section of the corridor to buses
- *Repurpose northbound curb lane to Bus/HOV:* Yorkdale outbound ramp to Bridgeland Avenue/Yorkdale Road: may have potential to improve transit travel time north of Bridgeland Avenue/Yorkdale Road
- *Investigate potential for queue jump lanes where feasible:* Queue jump lanes could potentially further improve transit travel times along the corridor, however, require further study to ascertain potential for benefits
- *Bus/HOV lane throughout, Repurposed Lane:* Repurposed existing curb lane; provides a high priority for bus transit, however, reduces capacity for existing vehicular traffic
- *Bus/HOV lane throughout: Additional Lane:* provides a high priority for bus transit and would attract more users to use transit. It also provides additional vehicular capacity during

the off-peak period which may result in attraction of additional regional vehicular trips to Dufferin Street corridor. Has property impacts.

3.1.5 Cycling

- *New dedicated cycling facilities along Dufferin Street:* Provides (currently non-existent) infrastructure for cycling trips, promotes cycling as a viable travel option, especially for short distance trips.
- *Expanded bicycle network within study area and broader context:* Provides connectivity beyond the study area into regional network of cycling infrastructure by linking into existing trail and cycle lane system, to provide greater cycling connectivity from the corridor.

3.1.6 Walking

- *Improved Streetscape / central median:* Provides shelter to pedestrians when crossing Dufferin Street; additionally, provides opportunity for turning movements for driveway traffic along the Dufferin Street corridor thereby reducing the impedance to through movements; reduces potential for collisions.
- *Improved Streetscape along Dufferin Street:* Develops an attractive public realm to promote pedestrian activity / trips along the corridor.
- *Improved Streetscape along side streets:* Promotes additional pedestrian trips that in turn complements street retail land use, and creates an overall inviting public realm.

3.2 Evaluation of alternative transportation planning solutions

The following provides a summary of the performance of each of the four alternative planning solutions against each of the evaluation criterion.

3.2.1 Policy fit

Can It Implement Adopted City Policies?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Existing street cannot address adopted City policies; does not decrease auto dependence and support active transportation, does not support a pedestrian oriented mixed-use environment along the Avenues</p>	<p>Challenging.</p> <p>Existing street cannot address adopted City policies; does not decrease auto dependence and support active transportation, does not support a pedestrian oriented mixed-use environment along the Avenues</p>	<p>Yes.</p> <p>Meets Official Plan policies on ROW and transit direction for Dufferin Street</p> <p>Provides a more green and pedestrian oriented streetscape environment.</p> <p>Can decrease auto dependence and support transit and active transportation.</p> <p>Can provide a major cycling facility on Dufferin Street, connecting to the broader planned network.</p>	<p>No.</p> <p>No policy direction for inclusion of Transit/HOV lanes on Dufferin Street, or right-of-way widening beyond 30m.</p> <p>Provides a green and improved north-south streetscape environment, but only with right-of-way widening.</p> <p>Can provide a major cycling facility on Dufferin Street, but only with right-of-way widening.</p>

Solution A is inconsistent with City policy since it does not support transit, cycling and pedestrian policy frameworks (Lawrence Allen Secondary Plan, Toronto Bike Plan, Pedestrian Charter), by not making any improvements to these travel modes.

In comparison, Solution B makes some improvements, but overall, is considered challenging since it does not provide any cycling network improvements.

Solution C is consistent with City policy since it consists of a combination of transit, pedestrian and cycling improvements that help reduce auto dependency, relate to the proposed changes in land use, and create an inviting space for public activity.

Solution D is inconsistent with City policies since it includes widening of the existing right-of-way beyond 30 metres, to accommodate additional lanes for transit service. Although, this would improve transit user experience, widening along the study corridor is not supported by the City planning frameworks.

3.2.2 Operations: pedestrian, cycle, transit and vehicular

Can It Enhance Operations?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Signal timing for transit and vehicles is insufficient.</p> <p>Current arrangement of lanes leads to several conflicts.</p> <p>No dedicated cycling facilities.</p>	<p>Challenging.</p> <p>Modifications to signal timing would improve transit and vehicle operations.</p> <p>Current arrangement of lanes leads to several conflicts.</p> <p>No dedicated cycling facilities.</p>	<p>Challenging.</p> <p>Modifications to signal timing would improve transit and vehicle operations.</p> <p>Adjusted lane arrangement would resolve several conflicts.</p> <p>Dedicated cycling facilities.</p> <p>Improved transit service and experience; but no dedicated transit lanes.</p>	<p>Challenging.</p> <p>Adding transit/HOV lanes would increase pedestrian crossing distances and attract additional auto trips during the off-peak hours.</p> <p>Adjusted lane arrangement would resolve several conflicts.</p> <p>Dedicated cycling facilities only with right-of-way widening.</p> <p>Transit would operate within dedicated or shared HOV lane.</p>

Solution A does not enhance operations for any mode, since no improvements are made, therefore, does not fulfill this criteria.

In Solution B, signal retiming program would improve vehicular operations along the corridor, however, repurposing an existing lane to bus/HOV lane along Dufferin Street would reduce the capacity of the corridor, resulting in congestion. Overall, operations for transit may improve due to provision of better priority for bus service. This solution is challenging when considering vehicular operations.

Solution C provides a balance between improvements to auto and transit operations, as well as cycling and pedestrian improvements, while maintaining the planned right-of-way for Dufferin Street. In addition to operational improvements made in Solution B, this solution includes lane reconfiguration, new signals, investigation of measures that aim to improve overall connectivity and as a result, operations. It also includes investigation of queue jump lanes that can help determine the most effective level of priority required for buses on Dufferin Street. It is anticipated that vehicular operations will remain challenging for this solution due to intensification and growth in the corridor, and the greater region.

Solution D improves operations for all modes, with a greater priority for transit along the study corridor by increasing the right-of-way and providing dedicated bus lanes. The removal of McAdam Loop is included in this solution; the removal should be considered in conjunction with the reconfiguration of Highway 401 off-ramp on to Dufferin Street and the provision of replacement access through southbound left turns at intersections at Bridgeland Avenue, Car Dealership, and the new intersection at Cartwright, to ensure vehicular operations for access/egress to/from Yorkdale Shopping Centre are not adversely affected.

3.2.3 East-West connections

Can It Improve East-West Connections?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Existing pedestrian conditions are insufficient.</p> <p>Crossing distances between intersections does not support a walking environment.</p>	<p>No.</p> <p>Existing pedestrian conditions are insufficient.</p> <p>Crossing distances between intersections does not support a walking environment.</p>	<p>Yes.</p> <p>New signalized intersections will reduce distances between crossings and improve connections for pedestrians, cyclists and vehicles.</p> <p>New local roadways and connections improve permeability providing easier access to and across Dufferin Street.</p>	<p>Challenging.</p> <p>New signalized intersections will reduce distances between crossings and improve connections for pedestrians, cyclists and vehicles.</p> <p>Adding transit/HOV lanes would increase crossing distance for pedestrians wanting better east-west connectivity.</p>

Solution A does not make any improvement to east-west connectivity.

Solution B does not make any improvements to east-west connectivity, although, better wayfinding and signage to key destinations can improve how people use the existing network more effectively.

Solution C improves the east-west connectivity in the study area. It introduces one additional intersection at Apex Road and creates a full-move intersection at the Car Dealership intersection to improve connectivity for vehicles and pedestrians in the east-west direction. Additionally, the reconfiguration of the Highway 401 off-ramp and development of local roadways/new roadway connections improves east-west connectivity. Expanded bicycle network and streetscape improvements on side streets will help improve connectivity for active modes as well.

Solution D is challenging, because despite sharing most components with Solution C, a wider cross-section on Dufferin Street in Solution D creates poor conditions for all pedestrians connections east-west. However, removal of the McAdam Loop and replacement with an additional intersection, does provide another connection for pedestrians to cross east-west, although the crossing distances are larger.

3.2.4 North-South connections

Can It Improve North-South Connections?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Does not improve the pedestrian experience.</p> <p>Existing pedestrian conditions are insufficient along Dufferin Street.</p> <p>Cannot accommodate a major cycling facility as identified in the City of Toronto Bike Plan and Lawrence Allen Secondary Plan.</p>	<p>No.</p> <p>Does not improve the pedestrian experience.</p> <p>Existing pedestrian conditions are insufficient along Dufferin Street.</p> <p>Cannot accommodate a major cycling facility as identified in the City of Toronto Bike Plan and Lawrence Allen Secondary Plan.</p>	<p>Yes.</p> <p>Can improve the pedestrian and cycling experience; can accommodate a formal and protected cycling facility within the existing Dufferin Street right-of-way.</p>	<p>Yes.</p> <p>Can improve the pedestrian experience but cannot accommodate formal protected cycling facility within the existing right-of-way.</p> <p>Adding transit/HOV lanes would improve transit experience and auto connectivity in the north-south direction.</p>

Solution A does not improve north-south connectivity. No new streets (for auto) and no new pedestrian and/or cycling connections are provided.

Solution B does not improve north-south connectivity. No new streets (for auto) and no new pedestrian and/or cycling connections are provided.

Solution C improves north-south connectivity. Development of new roadway connections, including pedestrian and cycling connections will strengthen connectivity and provide more options to people for travel.

Solution D improves north-south connectivity for all modes. Development of new roadway connections, including pedestrian and cycling connections, as well as additional lane in north-south direction for HOV/transit provides greater connectivity for all modes of transport.

3.2.5 Access

Can It Provide Efficient Access to Properties?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>Challenging.</p> <p>Currently provides access to all properties for residents, tenants, service, emergency and police.</p> <p>Turning movements from through lanes impact operations.</p>	<p>Challenging.</p> <p>Can provide access for residents, tenants, service, emergency and police.</p> <p>Turning movements from through lanes impact operations.</p>	<p>Yes.</p> <p>Centre median with turning lane can provide sufficient and more predictable access for residents, tenants, service, emergency and police.</p> <p>New public streets and laneways can provide an alternative for local property access.</p>	<p>Challenging.</p> <p>Centre median with turning lane can provide sufficient and more predictable access for residents, tenants, service, emergency and police.</p> <p>Vehicles accessing property will need to cross transit/HOV lanes.</p> <p>New public streets and laneways can provide an alternative for local property access.</p>

Solution A and B rely on existing street geometry for access to properties along Dufferin Street, which is considered challenging due to insufficient options for turning movements at mid-block for vehicles.

Solution C provides good access to properties adjacent to the study corridor since it relies on a uniform centre median with turning lane throughout the corridor. Development of local roadways and street connections also helps in providing alternatives to access properties.

The centre median serves a similar function in Solution D but is challenging since turning vehicles need to manoeuvre a larger cross section including crossing of transit/HOV lanes. Development of local roadways and street connections also helps in providing alternatives to access properties.

3.2.6 Aesthetically vital/socio-economic environment

Can It Provide an Aesthetically Vital and Vibrant Public Realm?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Existing conditions do not contain the elements required for an aesthetically vital and vibrant public realm: trees, generous boulevards, adequate cycling facilities, etc.</p> <p>Few benefits to street related retail opportunities.</p>	<p>No.</p> <p>Existing conditions do not contain the elements required for an aesthetically vital and vibrant public realm: trees, generous boulevards, adequate cycling facilities, etc.</p> <p>Few benefits to street related retail opportunities.</p>	<p>Yes.</p> <p>Making use of the available boulevard space within the planned right-of-way would allow for significant functional and aesthetic improvements, improve pedestrian and cycling activity and increase support for street related retail opportunities.</p> <p>Would reinforce the identity of the community.</p>	<p>Challenging.</p> <p>Requires use of a portion of the available boulevard space within the planned right-of-way for transit lanes.</p> <p>Needs right-of-way widening to obtain minimum boulevard dimension and provide sidewalks and dedicated cycling facilities.</p> <p>Adding additional travel lanes would detract from the identity of the community.</p>

Solution A does not improve the existing public realm along the Dufferin Street corridor. The existing conditions do not contain the elements needed for an aesthetically vital and vibrant public realm, and no solution components are included as part of this solutions that addresses this criterion.

Solution B does not improve the existing public realm along the Dufferin Street corridor. The existing conditions do not contain the elements needed for an aesthetically vital and vibrant public realm, and no solution components are included as part of this solutions that addresses this criterion.

Solution C helps improve the public realm by making considerable functional and aesthetic improvements to the pedestrian and cycling infrastructure, and supporting street related retail potential through streetscape improvements.

Solution D contains elements similar to Solution C that help create a vibrant public realm, however, additional travel lanes in each direction on Dufferin Street changes the vision / identity of the community / public realm, thus making this solution ‘challenging’.

3.2.7 Impact on cultural environment

Can It Improve the Cultural Environment?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>No impact to existing built heritage or cultural features, nor provide any improvements to the cultural environment.</p>	<p>No.</p> <p>No impact to existing built heritage or cultural features, nor provide any improvements to the cultural environment.</p>	<p>Yes.</p> <p>Can support redevelopment and encourage a higher quality of built form, thus improving the built heritage for the community.</p> <p>Improved streetscape provides opportunities to introduce public art and other cultural features.</p>	<p>Challenging.</p> <p>Can support redevelopment and encourage a higher quality of built form, thus improving the built heritage for the community.</p> <p>Improved streetscape provides opportunities to introduce public art and other cultural features.</p> <p>More heavily travelled street may have a negative impact on cultural activities.</p>

Solution A does not make any improvements to the cultural environment.

Solution B does not make any improvements to the cultural environment.

Solution C makes improvements to the cultural environment since it supports redevelopment that can improve the built heritage in the area. It also includes improvements to cultural features in the study area as part of improving the streetscape.

Solution D makes improvements similar to Solution C on the cultural environment, however, it is considered challenging because additional capacity (width) on Dufferin Street could potentially have a negative impact on the perception of cultural activities along the study corridor.

3.2.8 Impact on natural environment

Can It Improve the Natural Environment?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Cannot provide any improvements to the natural environment.</p>	<p>Challenging.</p> <p>No additional street trees along corridor.</p> <p>Traffic operations would improve and reduce idling.</p> <p>TDM Strategies would promote fewer overall auto trips which should reduce air quality impacts</p> <p>Minor operational transit improvements and better connection to TTC stations will help improve air quality by reducing auto trips.</p>	<p>Yes.</p> <p>Improved streetscape offers opportunity to greatly increase number and quality of street trees.</p> <p>Improved TDM, transit and active transportation will reduce dependence on automobile, thus improving local air quality.</p>	<p>Challenging.</p> <p>Improved streetscape offers opportunity to greatly increase number and quality of street trees, but only with right-of-way widening.</p> <p>Would attract more vehicular traffic during peak and off peak hours.</p> <p>Surface runoff would increase.</p> <p>Air and noise quality would degrade.</p>

Solution A does not make any improvements to the natural environment.

Solution B consists of operational improvements that could potential help improve air quality by reducing the traffic on Dufferin Street and making the flow of vehicles along the corridor more efficient. Overall, Solution B is considered challenging for improvements to natural environment.

Solution C improves the natural environment in the study area. This solution consists of a combination of operational improvements that have benefits similar to Solution B, but additionally, scope to provide green space (parks, and trees along the boulevard) to improve air quality. Diversion of truck traffic from Dufferin Street by reconfiguration of the Highway 401 off-ramp could also help reduce noise impacts, however, the addition of signalized intersection at Apex Road may result in localized increase in traffic noise.

Solution D consists of similar components to Solution B and C that can improve air quality, however, the provision of additional capacity along the corridor will attract more traffic that may result in no net benefit. Additionally, removal of the McAdam loop and replacement with a signalized intersection may result in localized increase in traffic noise. Overall, Solution D is considered challenging for improvements to natural environment.

3.2.9 Feasibility

Is the Solution Feasible to Implement?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>Yes.</p> <p>No coordination with potential servicing infrastructure upgrades.</p>	<p>Yes.</p> <p>No coordination with potential servicing infrastructure upgrades.</p>	<p>Yes.</p> <p>Conforms with current OP policies regarding right-of-way and transit.</p> <p>Few property requirements to achieve solution.</p> <p>Can coordinate with potential servicing infrastructure upgrades.</p> <p>Can coordinate streetscape improvements with other potential enhancements like the undergrounding of overhead utilities.</p>	<p>No.</p> <p>Significant property implication beyond policy requirements.</p> <p>Difficult to acquire properties.</p> <p>No policy direction to suggest or expropriate property for transit improvements.</p> <p>High implementation cost.</p> <p>Significant impact to surrounding neighbourhoods.</p>

Solution A and B are feasible to implement since there are minimal implications on servicing infrastructure upgrades.

Solution C is feasible to implement. There are several components recommended as part of this solution that can be coordinated in terms of implementation and phasing. There are no significant implications on schedule for implementation as part of this solution.

Solution D is not feasible to implement. This solution requires significant expansion of right-of-way to allow for provision of additional lanes, which would have a significant impact on surrounding neighbourhoods. The acquisition of additional lands required to achieve this has significant implications on the timeline for the revitalization of Dufferin Street.

3.2.10 Fit in space available

Can It Fit in the Space Available without Additional Land?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
Yes.	Yes.	Yes. All elements can fit within planned 30m right-of-way. No additional setbacks or right-of-way widening required to achieve minimum boulevard dimensions.	No. Not all elements can fit within planned 30m right-of-way. Additional setbacks on private property or right-of-way widening required to achieve minimum boulevard dimensions. Additional land requirements would impact development potential of constrained sites.

Solutions A, B and C can fit in the space available, assuming that a 30 metre right-of-way is available throughout the length of the study corridor, since no expansion to the planned right-of-way is proposed as part of either of these solutions.

Solution D cannot fit in the space available. The provision of adding an extra lane of traffic in each direction for HOV/bus lane requires additional land that requires expanding the right-of-way beyond 30 metres.

3.2.11 Support to land use and built form recommendations

Can It Support the Recommended Preferred Redevelopment Option?

A. Do Nothing	B. Quick Wins	C. Upgrade	D. Additional
<p>No.</p> <p>Current physical attributes and operational characteristics cannot support the anticipated redevelopment of Dufferin Street.</p>	<p>Challenging.</p> <p>Operational changes will provide moderate improvements to support the anticipated redevelopment of Dufferin Street.</p>	<p>Yes.</p> <p>Fine grained local street network supports street retail activity and facilitates walking and cycling for short local trips.</p> <p>Supports recommended redevelopment option.</p>	<p>No.</p> <p>Fine grained local street network supports street retail activity and facilitates walking and cycling for short local trips.</p> <p>Does not support policy direction or landuse/built form performance standards.</p> <p>Limits development potential for constrained sites.</p>

Solution A does not support the land use and built form recommendations along the corridor, since no improvements are made to the existing transportation network.

Solution B operational improvements support the land use and built form recommendations along the corridor to some extent. However, it is still considered ‘challenging’ to implement this solution since no other complementary improvements are made to maximise the potential of the street network.

Solution C supports the land use and built form recommendations along the corridor with a combination of improvements for all modes including cars, transit, cycling and walking. This will promote a balanced modal share that supports mixed land use, with a significant proportion of trips being made using active transportation modes, especially for short distance trips. Improvements to street network, and other physical improvements to the street further enhance the functionality of the transportation network with respect to supporting the surrounding land use.

Solution D does not support the land use and built form recommendations. Although improvements to operations for all modes and the street network in this solution support the proposed intensification along the corridor, it limits development potential for constrained sites along the east edge of the corridor, and does not support the land use and built form performance standards.

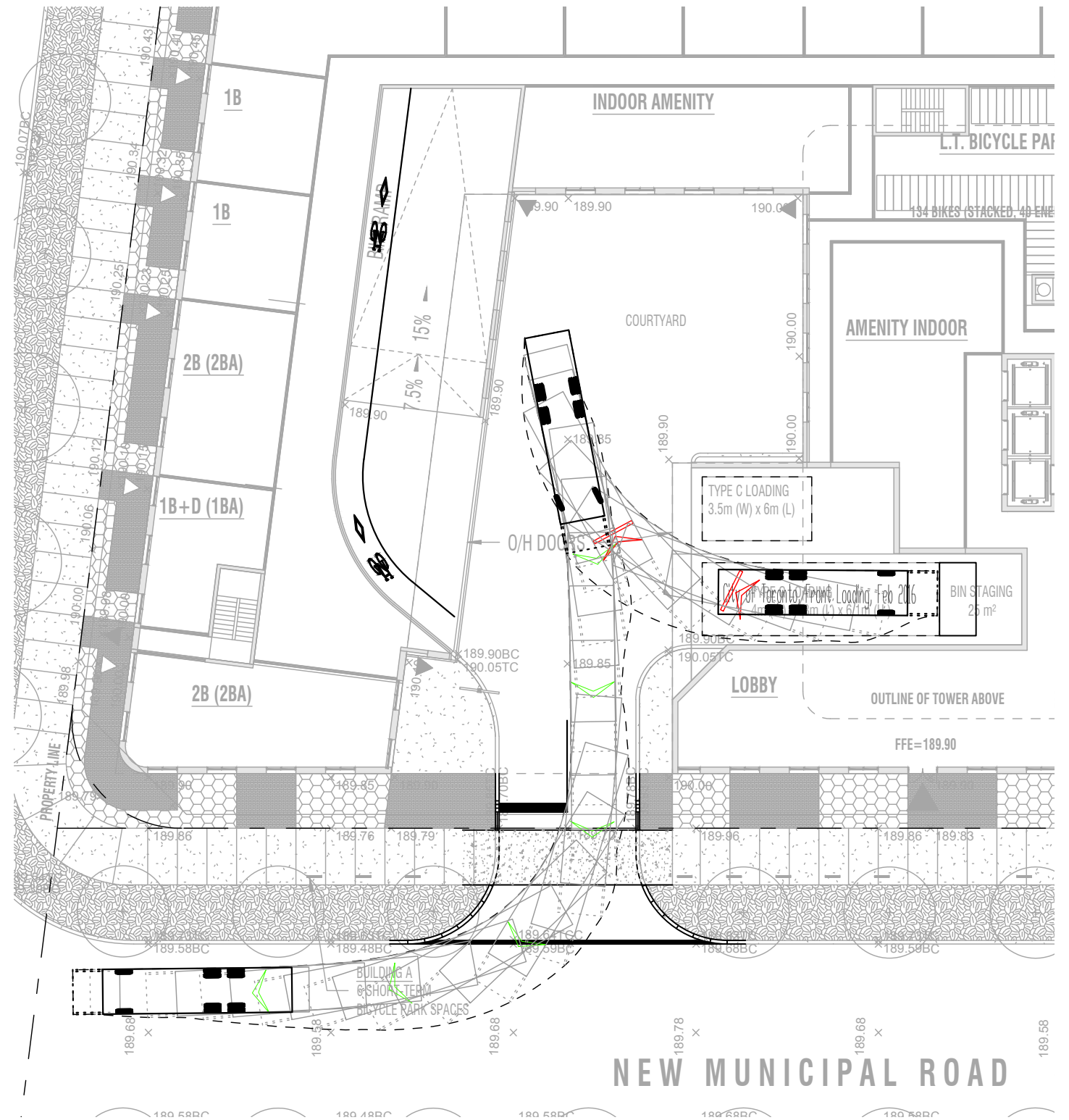
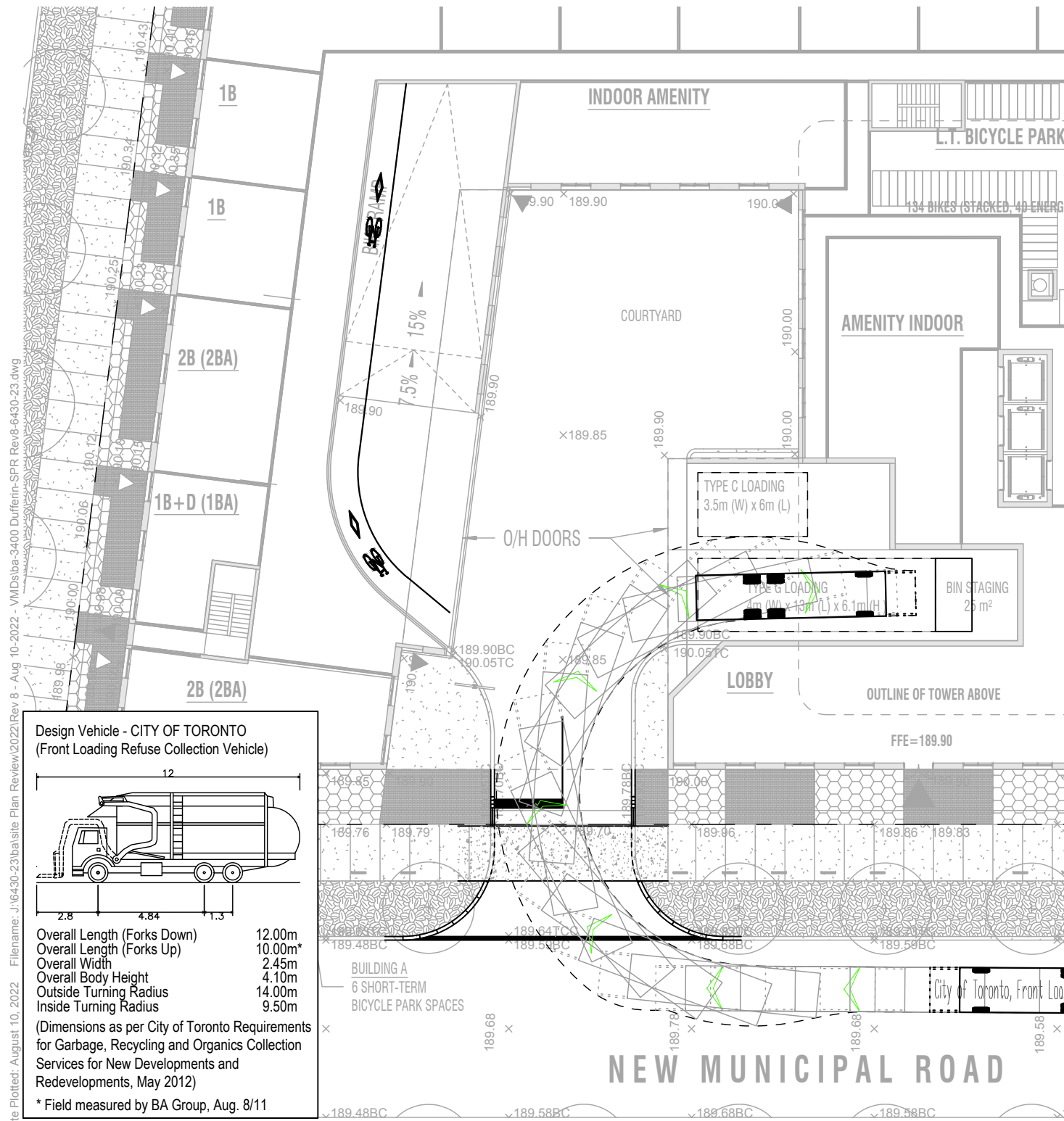
Appendix D

Vehicle Manoeuvring Diagrams



INBOUND

OUTBOUND



Date Plotted: August 10, 2022. Filename: J:\6430-23\ba\site Plan Review\2022\Rev 8 - Aug 10-2022 - VMD\sta-3400 Dufferin-SPR Rev 6-6430-23.dwg



3400 Dufferin - Northwest Site (Site 'A')

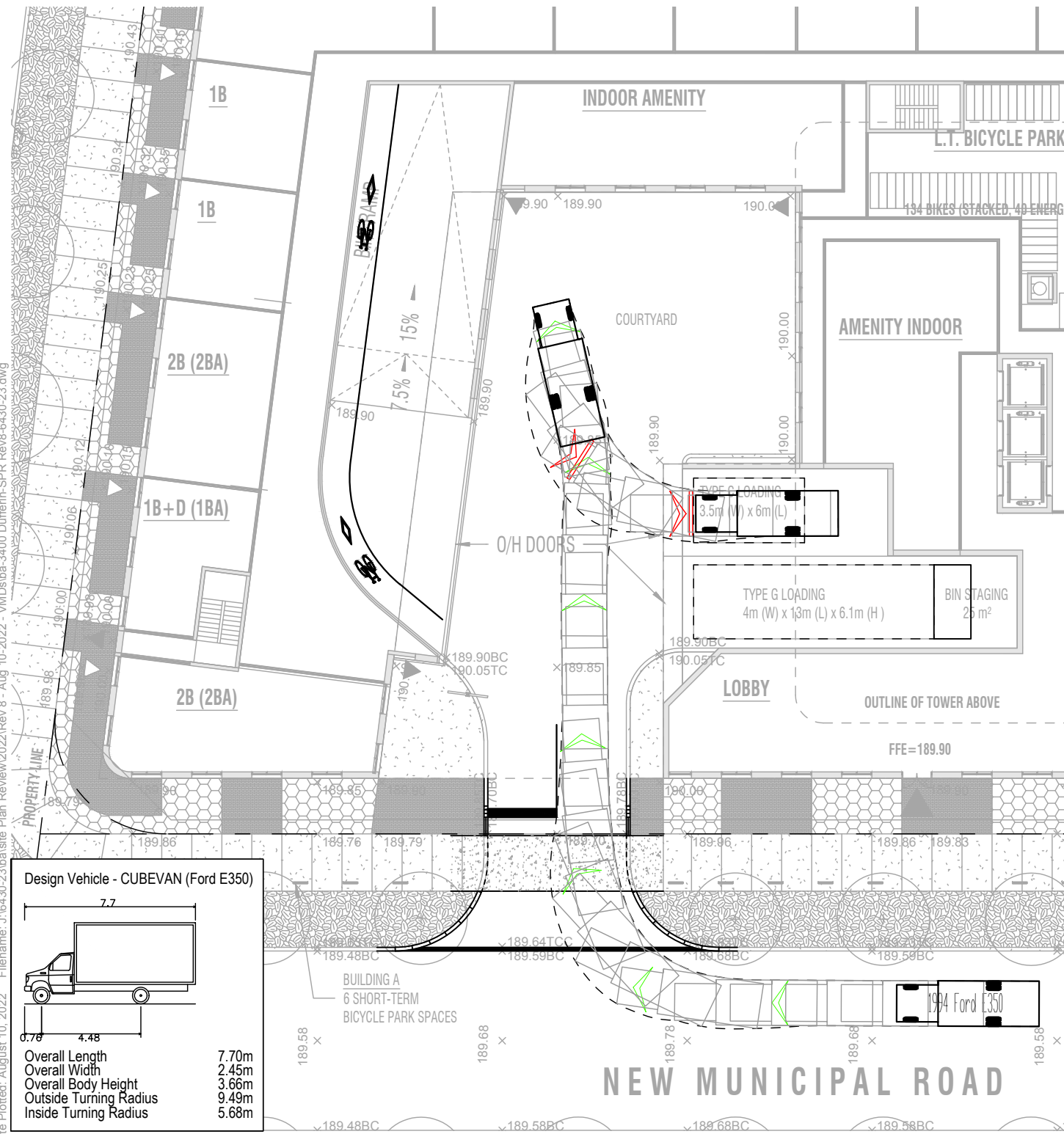
City of Toronto Refuse Truck Design Vehicle
Inbound / Outbound Manoeuvres

Project: 3400 Dufferin
Project No. 6430-23
Date: July 25, 2022
Revised: August 10, 2022

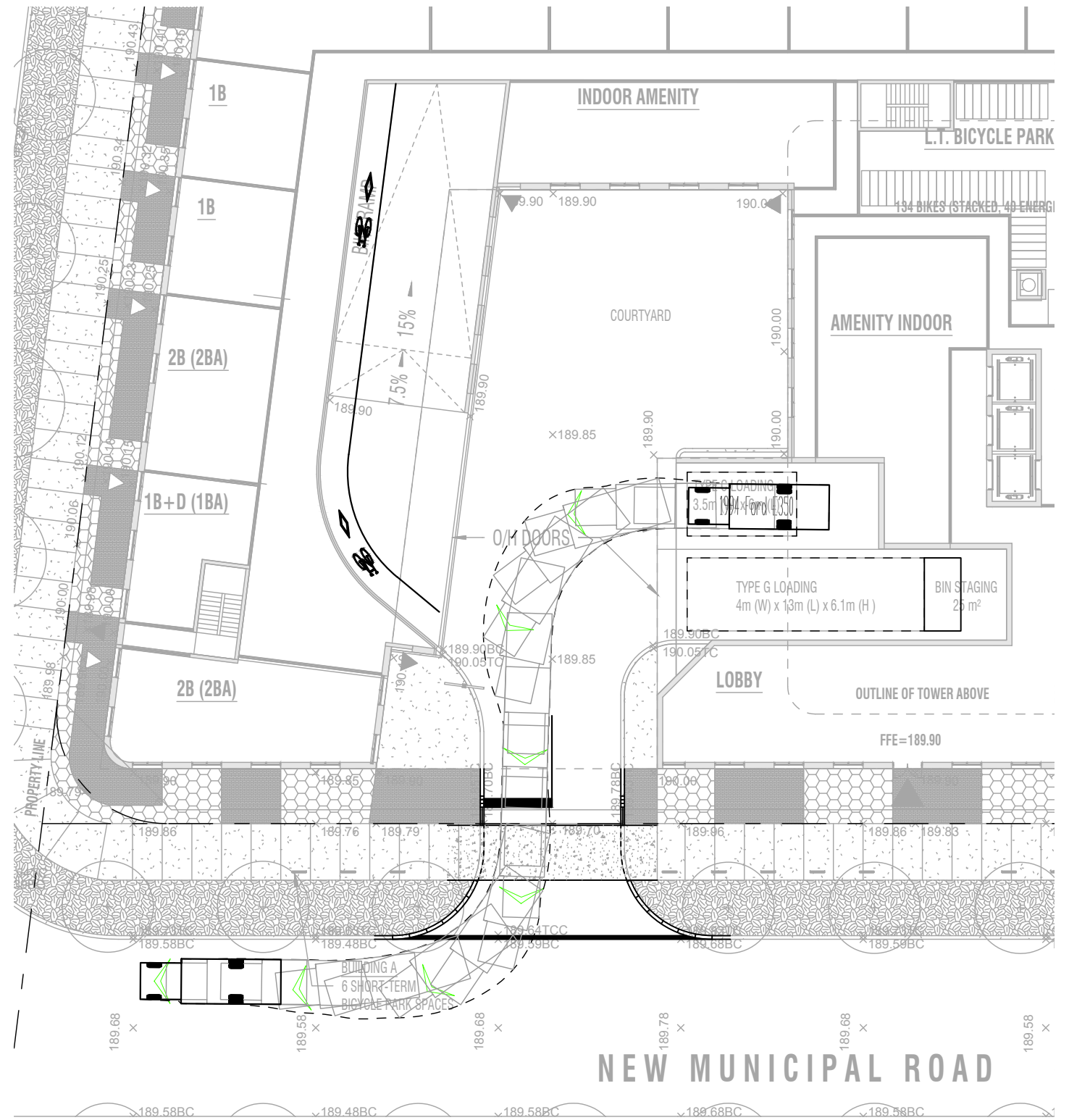


Drawing No. **VMD-1**

INBOUND



OUTBOUND



Design Vehicle - CUBEVAN (Ford E350)

Overall Length 7.70m
 Overall Width 2.45m
 Overall Body Height 3.66m
 Outside Turning Radius 9.49m
 Inside Turning Radius 5.68m

3400 Dufferin - Northwest Site (Site 'A')

Cube Van Moving Truck Design Vehicle Inbound / Outbound Manoeuvres

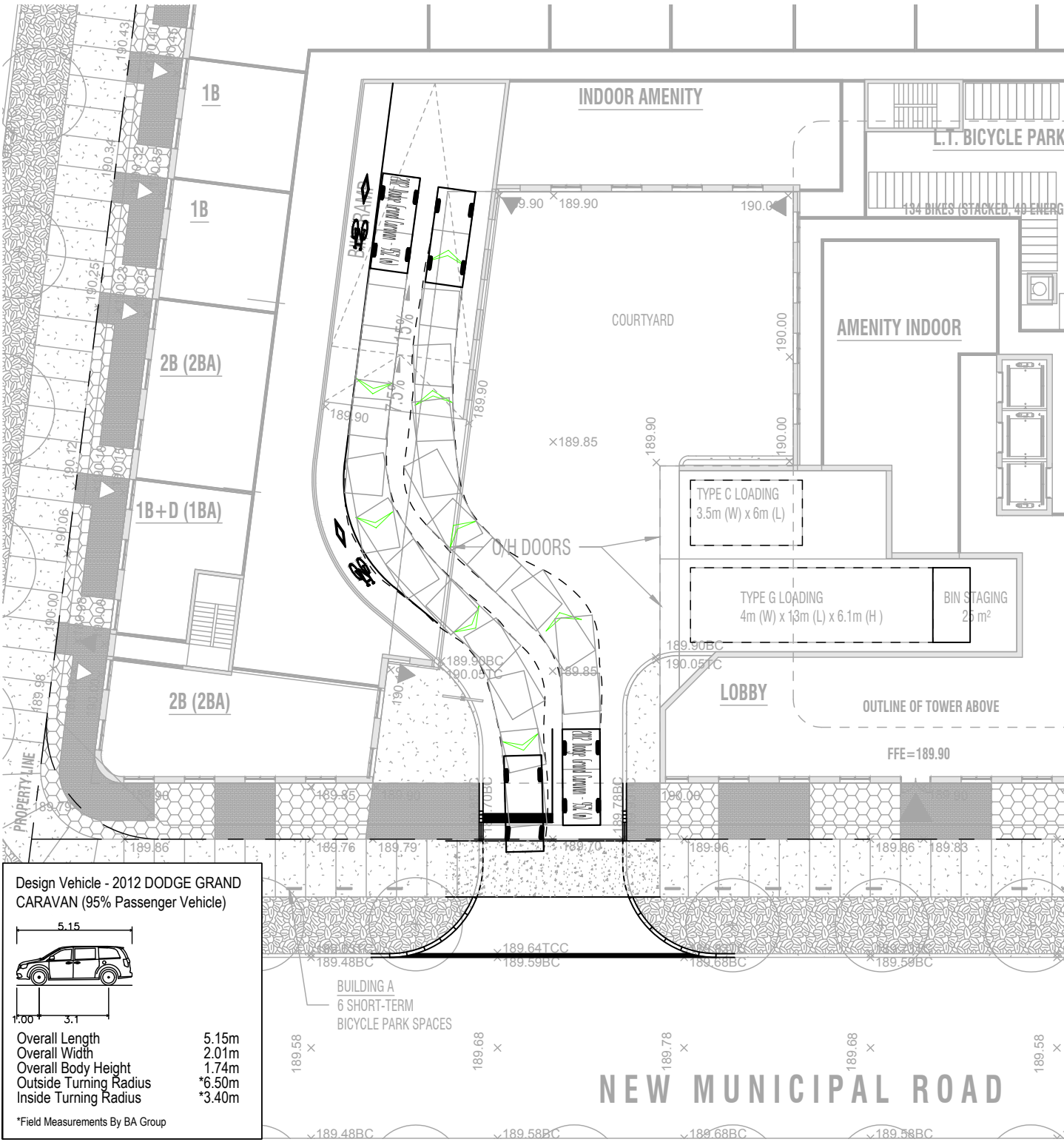


Project: 3400 Dufferin
 Project No. 6430-23
 Date: July 25, 2022
 Revised: August 10, 2022

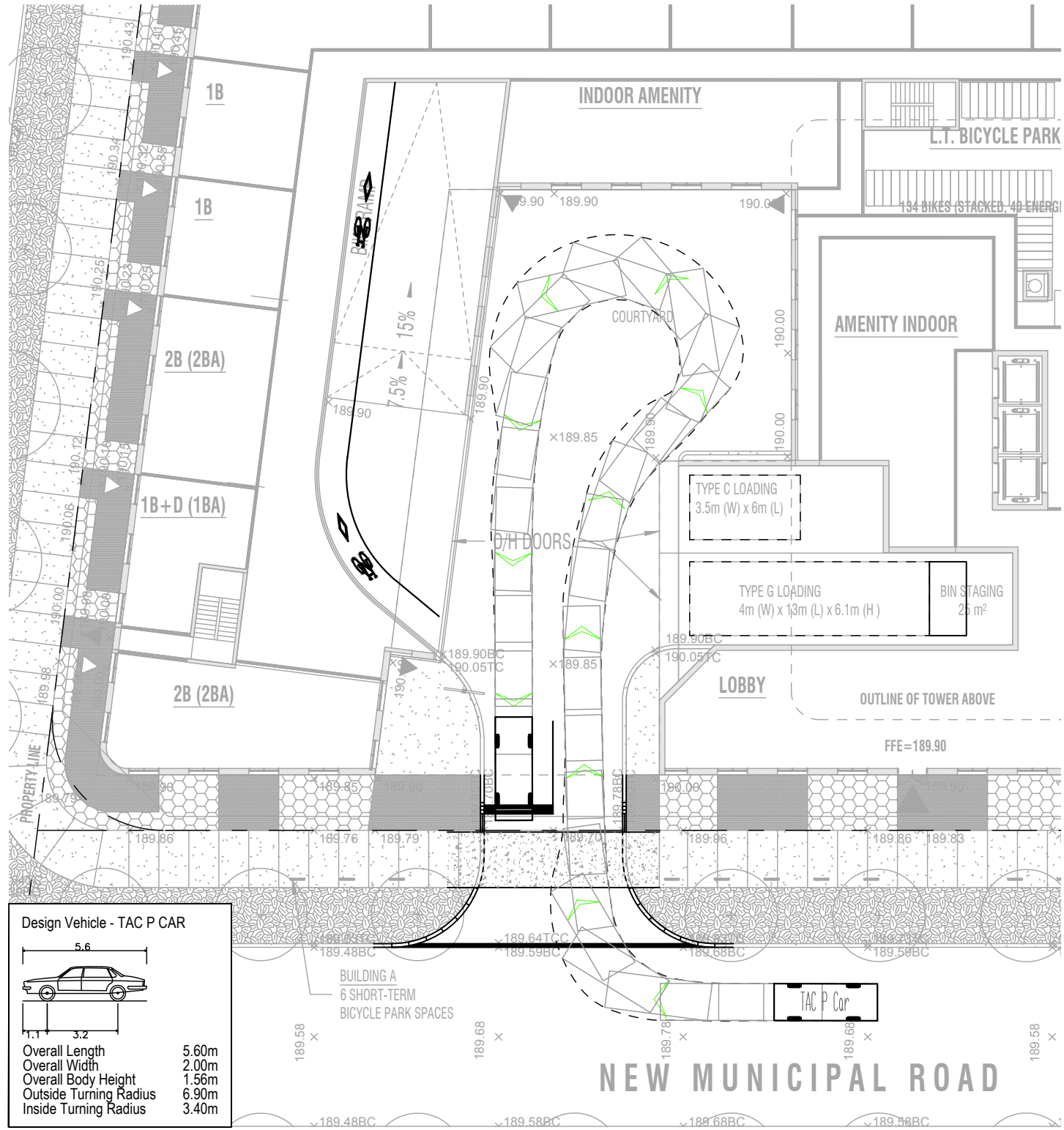


Drawing No. **VMD-2**

Parking Ramp



Pick-Up/Drop-Off



Date Plotted: August 10, 2022. Filename: J:\6430-23\ba\site Plan Review\2022\Rev 8 - Aug 10-2022 - VMD\sta-3400 Dufferin-SPR Rev 6-6430-23.dwg

Design Vehicle - 2012 DODGE GRAND CARAVAN (95% Passenger Vehicle)

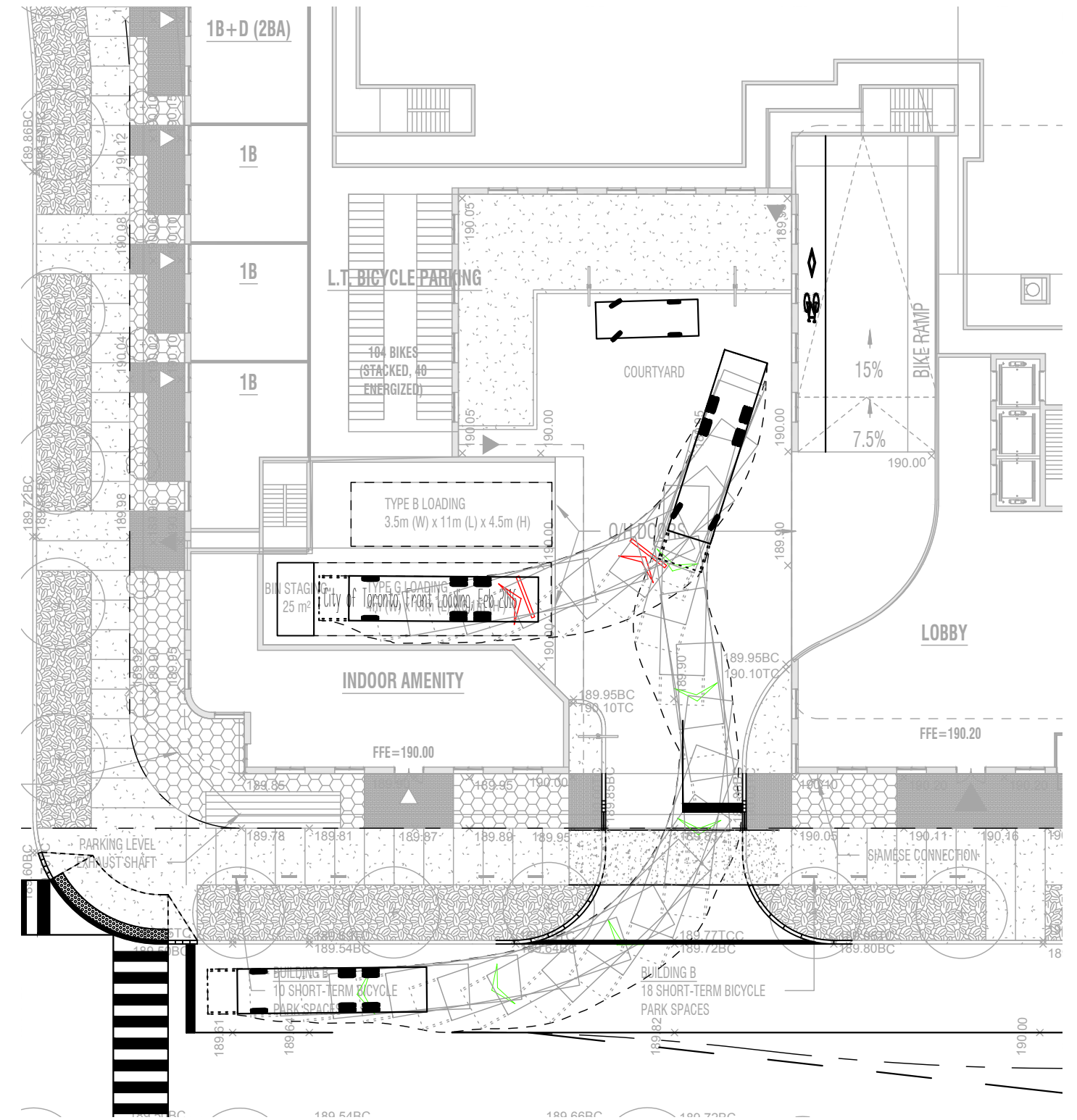
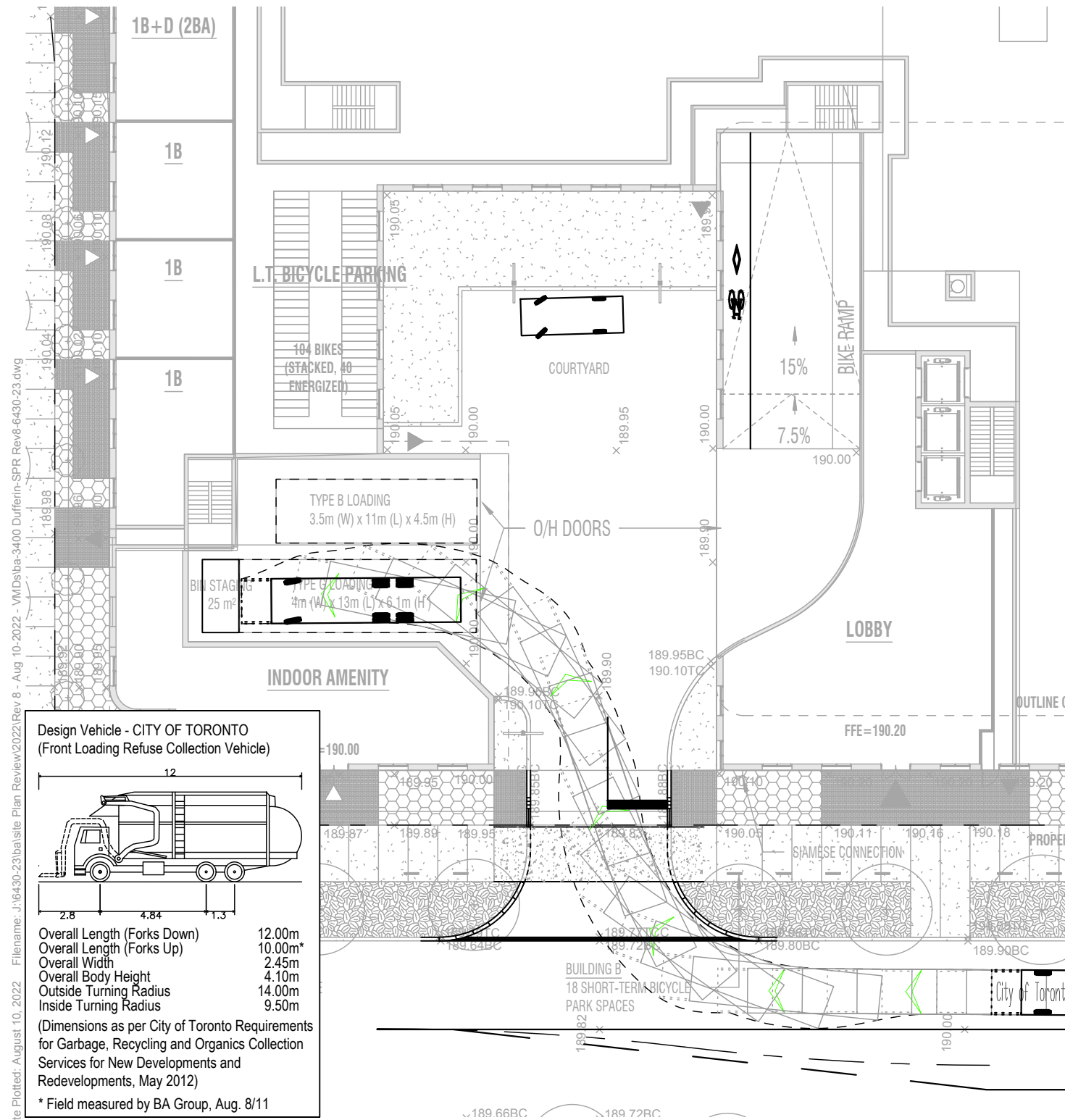
Overall Length 5.15m
 Overall Width 2.01m
 Overall Body Height 1.74m
 Outside Turning Radius *6.50m
 Inside Turning Radius *3.40m
 *Field Measurements By BA Group

Design Vehicle - TAC P CAR

Overall Length 5.60m
 Overall Width 2.00m
 Overall Body Height 1.56m
 Outside Turning Radius 6.90m
 Inside Turning Radius 3.40m

INBOUND

OUTBOUND



Design Vehicle - CITY OF TORONTO
(Front Loading Refuse Collection Vehicle)

Overall Length (Forks Down) 12.00m
 Overall Length (Forks Up) 10.00m*
 Overall Width 2.45m
 Overall Body Height 4.10m
 Outside Turning Radius 14.00m
 Inside Turning Radius 9.50m

(Dimensions as per City of Toronto Requirements for Garbage, Recycling and Organics Collection Services for New Developments and Redevelopments, May 2012)
 * Field measured by BA Group, Aug. 8/11

3400 Dufferin - Northeast Site (Site 'B')

City of Toronto Refuse Truck Design Vehicle

Inbound / Outbound Manoeuvres



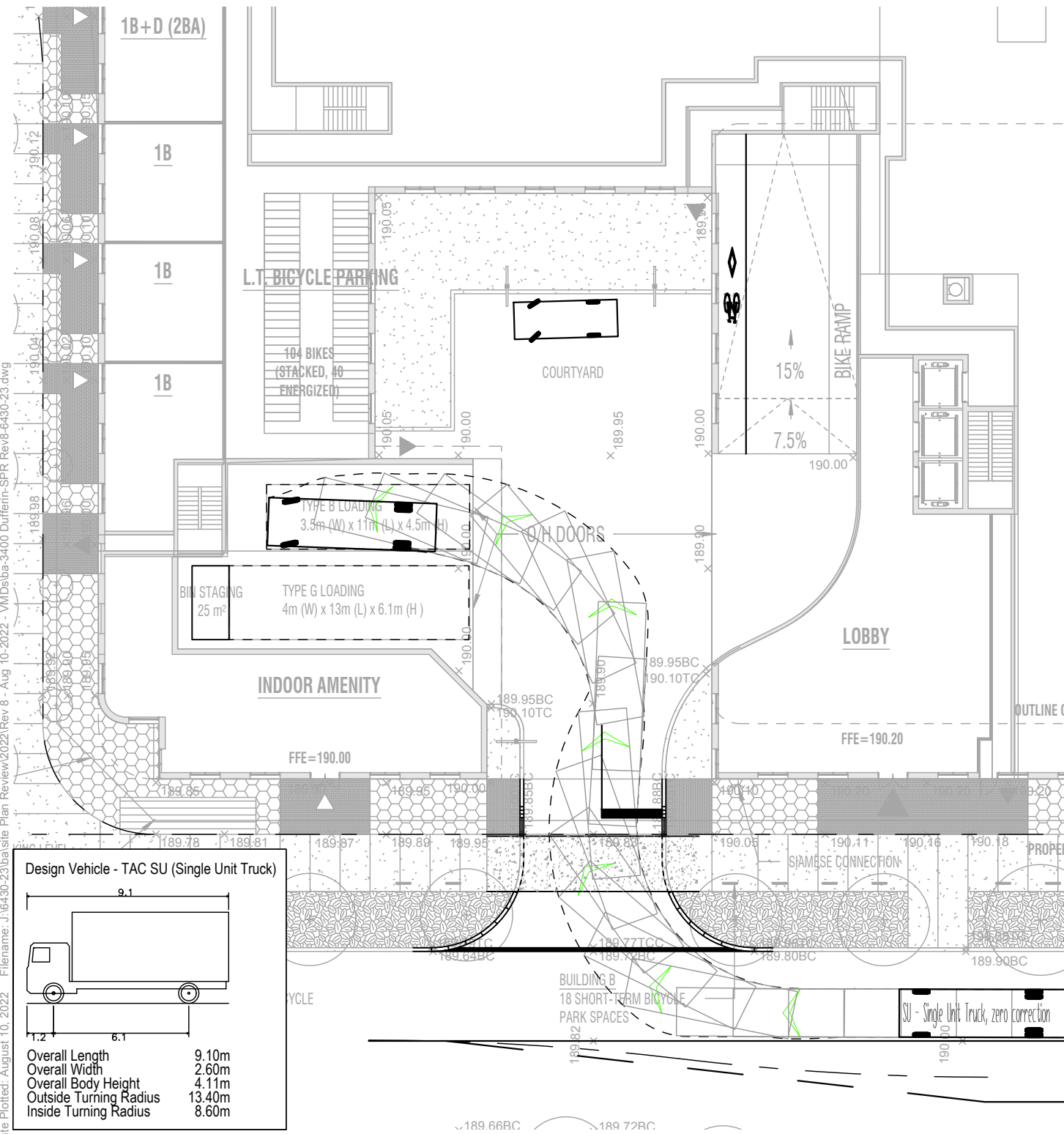
Project: 3400 Dufferin
 Project No. 6430-23
 Date: July 25, 2022
 Revised: August 10, 2022



Drawing No. **VMD-4**

Date Plotted: August 10, 2022. Filename: J:\6430-23\ba\site Plan Review\2022\Rev 8 - Aug 10-2022 - VMD\sta-3400 Dufferin-SPR Rev-6430-23.dwg

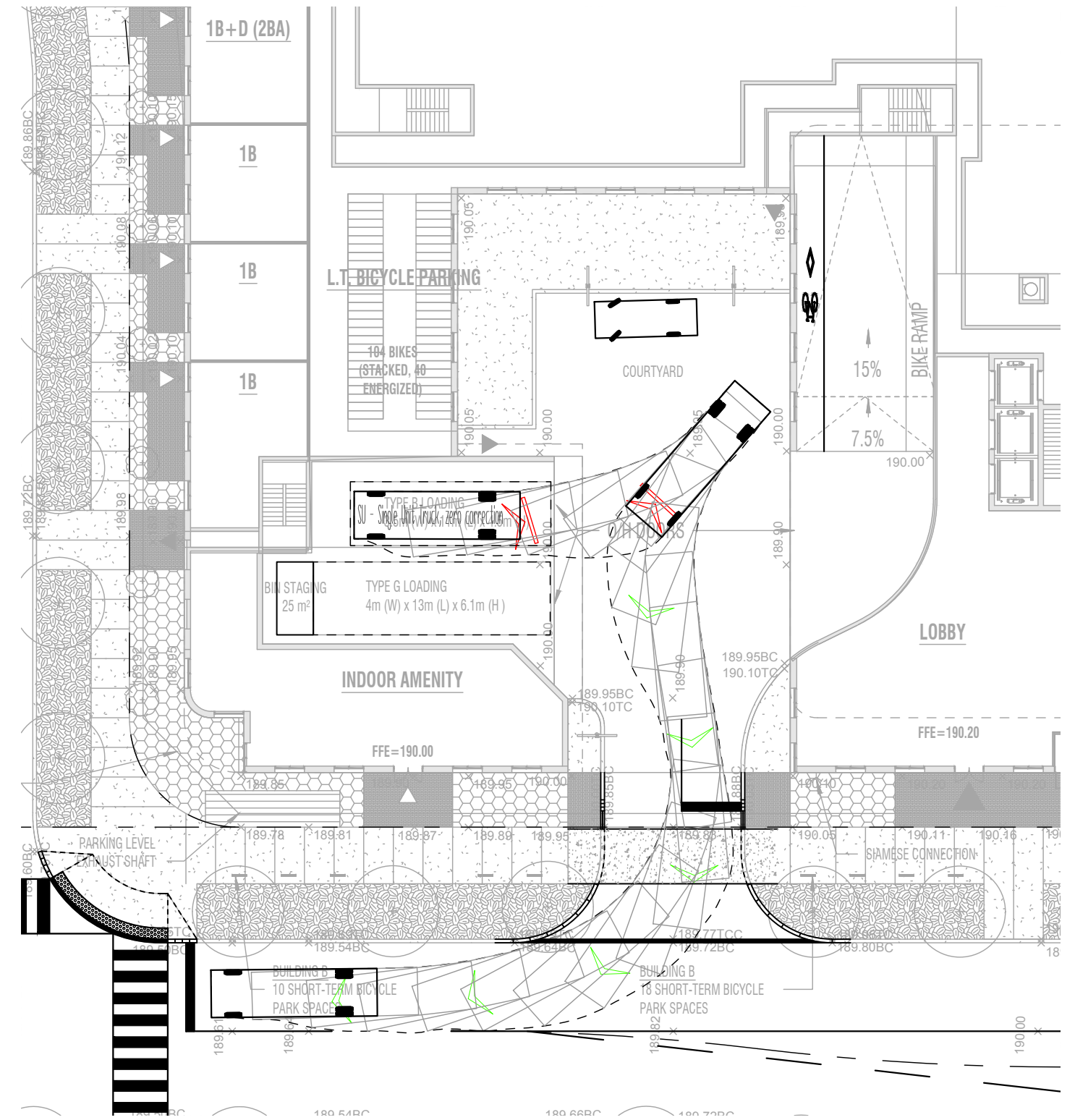
INBOUND



Design Vehicle - TAC SU (Single Unit Truck)

Overall Length 9.10m
 Overall Width 2.60m
 Overall Body Height 4.11m
 Outside Turning Radius 13.40m
 Inside Turning Radius 8.60m

OUTBOUND



3400 Dufferin - Northeast Site (Site 'B')

Single Unit Delivery Truck Design Vehicle

Inbound / Outbound Manoeuvres



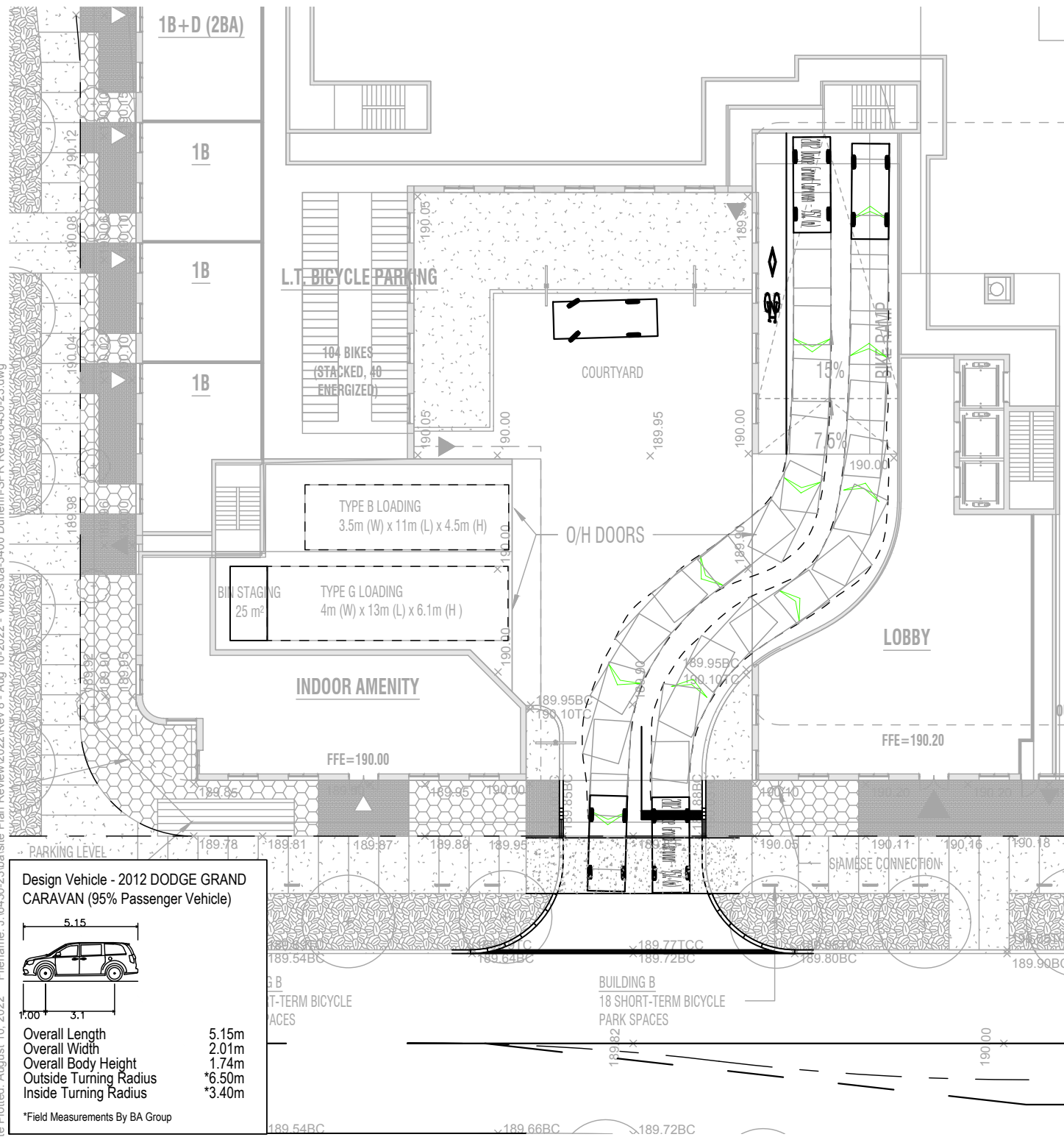
Project: 3400 Dufferin
 Project No. 6430-23
 Date: July 25, 2022
 Revised: August 10, 2022



Drawing No. **VMD-5**

Date Plotted: August 10, 2022. Filename: J:\6430-23\ba\Site Plan Review\2022\Rev 8 - Aug 10-2022 - VMD\sta-3400 Dufferin-SPR Rev 6430-23.dwg

Parking Ramp

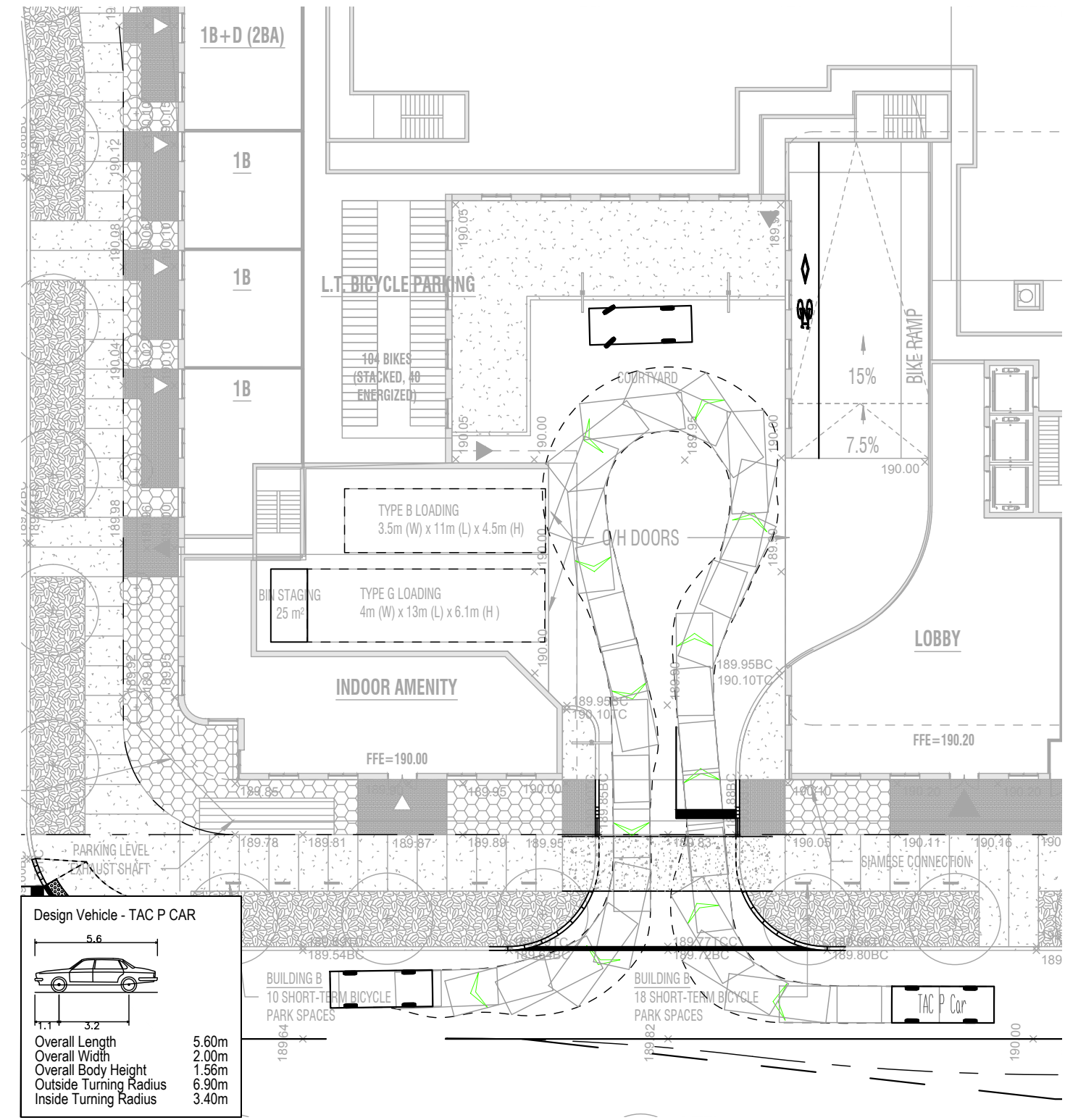


Design Vehicle - 2012 DODGE GRAND CARAVAN (95% Passenger Vehicle)

Overall Length 5.15m
 Overall Width 2.01m
 Overall Body Height 1.74m
 Outside Turning Radius 6.50m
 Inside Turning Radius 3.40m

*Field Measurements By BA Group

Pick-Up/Drop-Off



Design Vehicle - TAC P CAR

Overall Length 5.60m
 Overall Width 2.00m
 Overall Body Height 1.56m
 Outside Turning Radius 6.90m
 Inside Turning Radius 3.40m



3400 Dufferin - Northeast Site (Site 'B')
 Passenger Car Design Vehicles
 Parking Ramp and Pick-Up/Drop-Off Manoeuvres

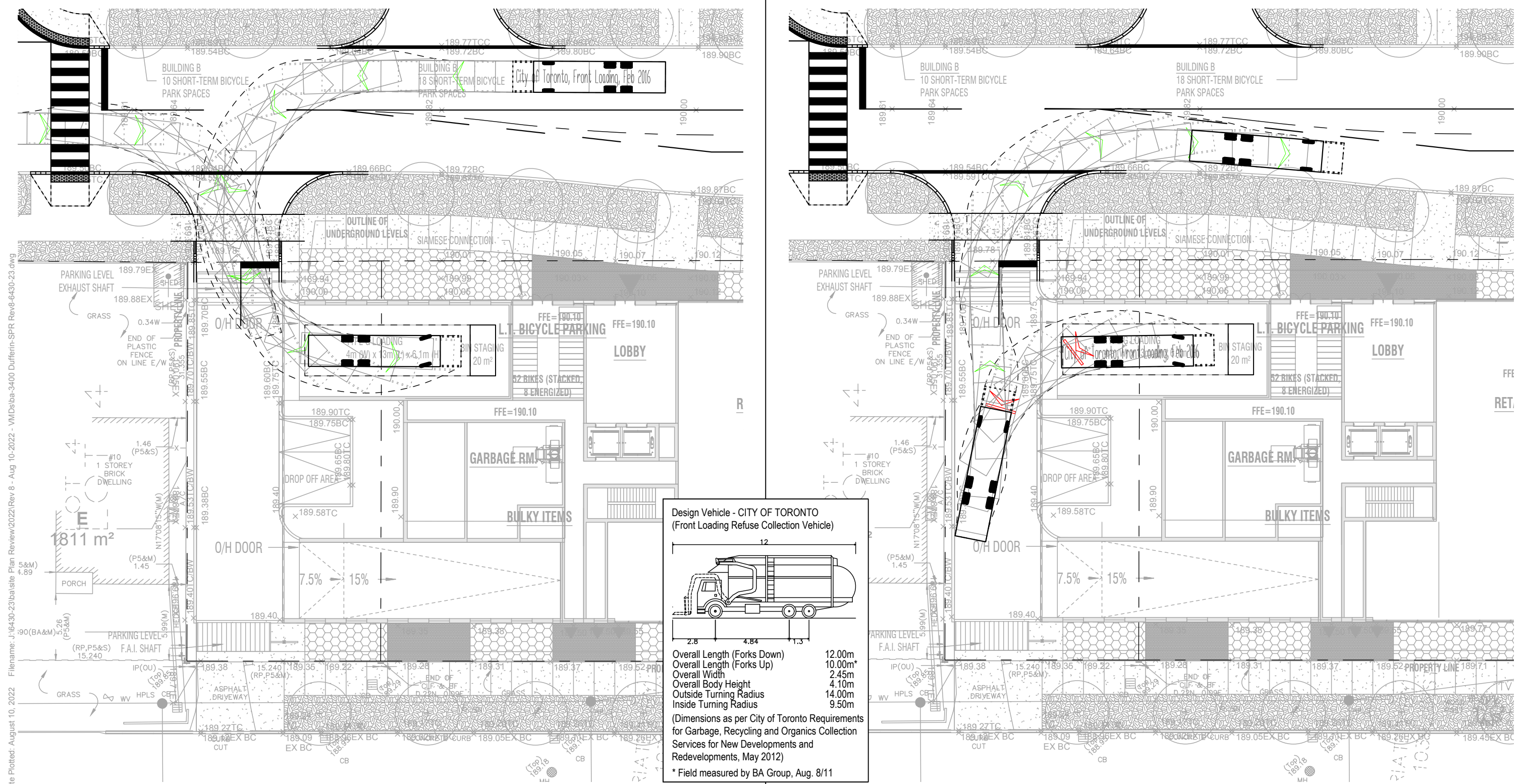
Project: 3400 Dufferin
 Project No. 6430-23
 Date: July 25, 2022
 Revised: August 10, 2022



Drawing No. **VMD-6**

INBOUND

OUTBOUND



Date Plotted: August 10, 2022 File: J:\6430-23\ba\site Plan Review\2022\Rev 8 - Aug 10-2022 - VMD\sta-3400 Dufferin-SPR Rev 6-6430-23.dwg



3400 Dufferin - Southeast Site (Site 'C')

City of Toronto Refuse Truck Design Vehicle

Inbound / Outbound Manoeuvres

Project: 3400 Dufferin
Project No. 6430-23
Date: July 25, 2022
Revised: August 10, 2022



Drawing No. **VMD-7**

Appendix E

Turning Movement Counts





Turning Movement Count (1 . BRIDGELAND AVE & 3450 DUFFERIN ST)

Start Time	E Approach BRIDGELAND AVE					S Approach HOLIDAY INN DRIVEWAY					W Approach BRIDGELAND AVE					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:30:00	116	2	0	0	118	1	0	0	6	1	0	71	0	1	71	190	
07:45:00	154	3	0	0	157	0	0	0	7	0	0	88	0	0	88	245	
08:00:00	151	0	0	0	151	2	0	0	4	2	0	89	0	0	89	242	
08:15:00	160	0	0	0	160	0	0	0	3	0	0	91	0	0	91	251	928
08:30:00	187	1	0	0	188	0	0	0	0	0	1	85	0	0	86	274	1012
08:45:00	219	2	0	0	221	1	0	0	9	1	1	96	0	0	97	319	1086
09:00:00	213	2	0	0	215	0	1	0	2	1	0	89	0	0	89	305	1149
09:15:00	169	0	0	0	169	2	0	0	4	2	0	99	0	0	99	270	1168
BREAK																	
16:00:00	136	1	0	1	137	1	0	0	2	1	0	145	0	0	145	283	
16:15:00	136	0	0	0	136	1	0	0	4	1	0	130	0	0	130	267	
16:30:00	154	0	0	0	154	2	0	0	2	2	0	120	0	0	120	276	
16:45:00	139	0	0	0	139	3	0	0	5	3	0	122	0	0	122	264	1090
17:00:00	125	0	0	1	125	2	0	0	10	2	0	163	0	0	163	290	1097
17:15:00	132	0	0	0	132	1	0	0	5	1	0	150	0	0	150	283	1113
17:30:00	153	0	0	0	153	0	0	0	5	0	0	124	0	0	124	277	1114
17:45:00	152	0	0	0	152	1	0	0	3	1	0	113	0	0	113	266	1116
Grand Total	2496	11	0	2	2507	17	1	0	71	18	2	1775	0	1	1777	4302	-
Approach%	99.6%	0.4%	0%	-	-	94.4%	5.6%	0%	-	-	0.1%	99.9%	0%	-	-	-	-
Totals %	58%	0.3%	0%	-	58.3%	0.4%	0%	0%	0.4%	0%	41.3%	0%	-	41.3%	-	-	-
Heavy	115	6	0	-	-	3	0	0	-	-	2	98	0	-	-	-	-
Heavy %	4.6%	54.5%	0%	-	-	17.6%	0%	0%	-	-	100%	5.5%	0%	-	-	-	-
Bicycles	2	0	0	-	-	0	0	0	-	-	0	0	0	-	-	-	-
Bicycle %	0.1%	0%	0%	-	-	0%	0%	0%	-	-	0%	0%	0%	-	-	-	-



Peak Hour: 08:30 AM - 09:30 AM Weather: Broken Clouds (18.39 °C)

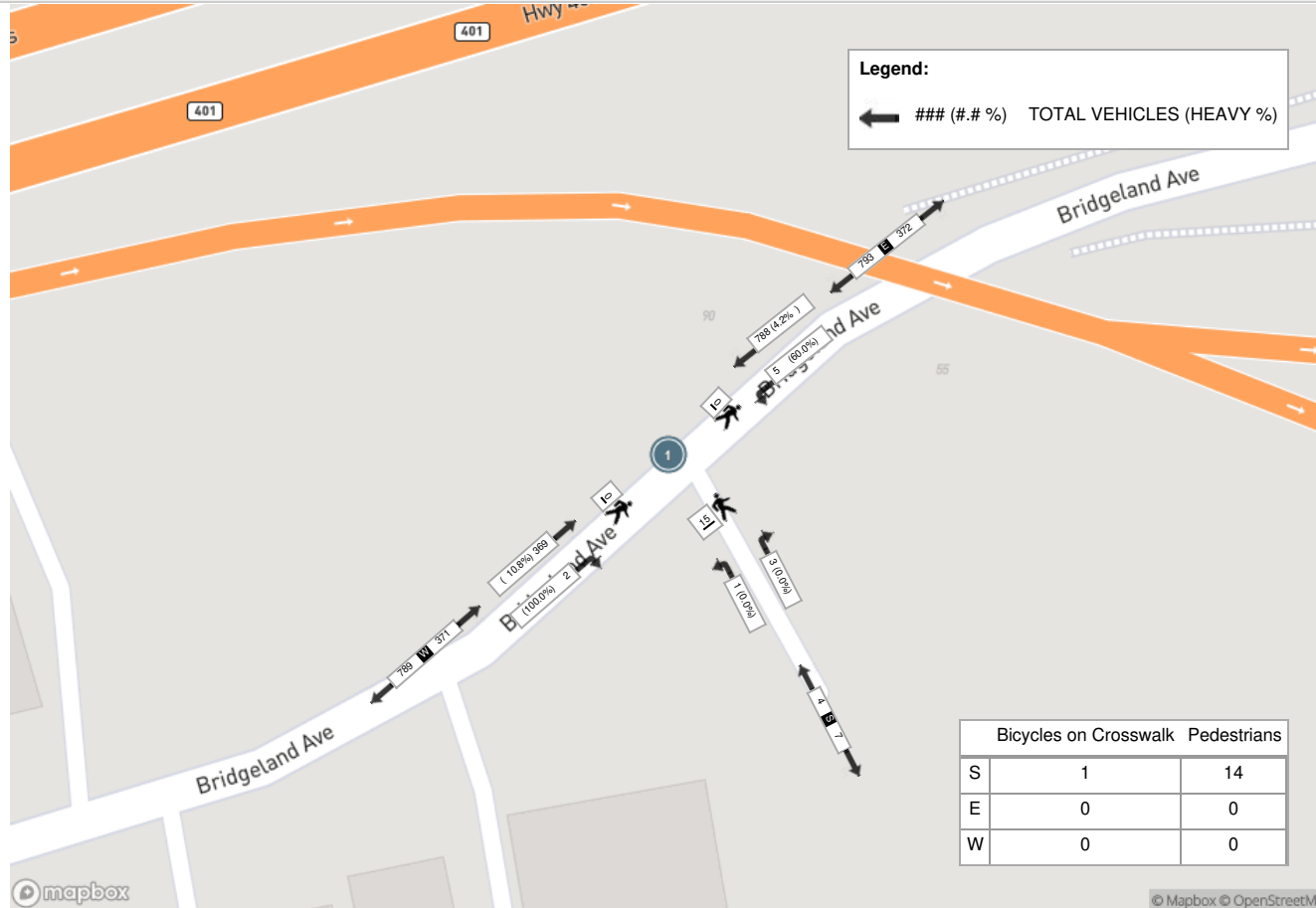
Start Time	E Approach BRIDGELAND AVE					S Approach HOLIDAY INN DRIVEWAY					W Approach BRIDGELAND AVE					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
08:30:00	187	1	0	0	188	0	0	0	0	0	1	85	0	0	86	274
08:45:00	219	2	0	0	221	1	0	0	9	1	1	96	0	0	97	319
09:00:00	213	2	0	0	215	0	1	0	2	1	0	89	0	0	89	305
09:15:00	169	0	0	0	169	2	0	0	4	2	0	99	0	0	99	270
Grand Total	788	5	0	0	793	3	1	0	15	4	2	369	0	0	371	1168
Approach%	99.4%	0.6%	0%	-	-	75%	25%	0%	-	-	0.5%	99.5%	0%	-	-	-
Totals %	67.5%	0.4%	0%	67.9%	0.3%	0.1%	0%	0.3%	0.2%	31.6%	0%	31.8%	-	-	-	-
PHF	0.9	0.63	0	0.9	0.38	0.25	0	0.5	0.5	0.93	0	0.94	-	-	-	-
Heavy	33	3	0	36	0	0	0	0	2	40	0	42	-	-	-	-
Heavy %	4.2%	60%	0%	4.5%	0%	0%	0%	0%	100%	10.8%	0%	11.3%	-	-	-	-
Lights	755	2	0	757	3	1	0	4	0	329	0	329	-	-	-	-
Lights %	95.8%	40%	0%	95.5%	100%	100%	0%	100%	0%	89.2%	0%	88.7%	-	-	-	-
Single-Unit Trucks	30	3	0	33	0	0	0	0	2	33	0	35	-	-	-	-
Single-Unit Trucks %	3.8%	60%	0%	4.2%	0%	0%	0%	0%	100%	8.9%	0%	9.4%	-	-	-	-
Buses	2	0	0	2	0	0	0	0	0	3	0	3	-	-	-	-
Buses %	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	0.8%	0%	0.8%	-	-	-	-
Articulated Trucks	1	0	0	1	0	0	0	0	0	4	0	4	-	-	-	-
Articulated Trucks %	0.1%	0%	0%	0.1%	0%	0%	0%	0%	0%	1.1%	0%	1.1%	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	14	-	-	-	0	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	93.3%	-	-	-	0%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	1	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	6.7%	-	-	-	0%	-	-	-	-
Bicycles on Road	1	0	0	0	-	0	0	0	-	0	0	0	-	-	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-



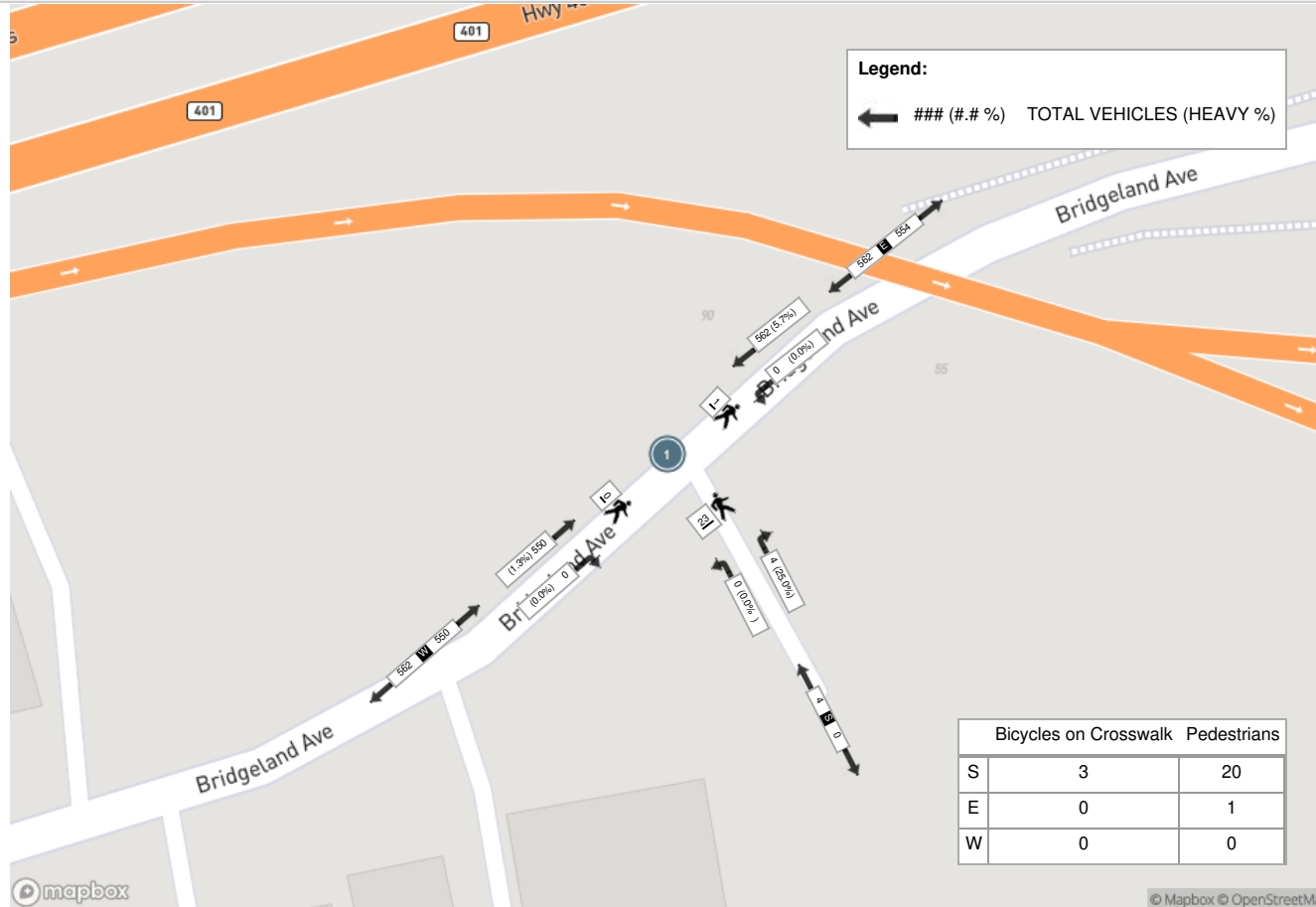
Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)

Start Time	E Approach BRIDGELAND AVE					S Approach HOLIDAY INN DRIVEWAY					W Approach BRIDGELAND AVE				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
17:00:00	125	0	0	1	125	2	0	0	10	2	0	163	0	0	163	290
17:15:00	132	0	0	0	132	1	0	0	5	1	0	150	0	0	150	283
17:30:00	153	0	0	0	153	0	0	0	5	0	0	124	0	0	124	277
17:45:00	152	0	0	0	152	1	0	0	3	1	0	113	0	0	113	266
Grand Total	562	0	0	1	562	4	0	0	23	4	0	550	0	0	550	1116
Approach%	100%	0%	0%	-	-	100%	0%	0%	-	-	0%	100%	0%	-	-	-
Totals %	50.4%	0%	0%	50.4%	50.4%	0.4%	0%	0%	0.4%	0%	49.3%	0%	49.3%	49.3%	49.3%	-
PHF	0.92	0	0	0.92	0.92	0.5	0	0	0.5	0	0.84	0	0.84	0.84	0.84	-
Heavy	32	0	0	32	32	1	0	0	1	0	7	0	7	7	7	-
Heavy %	5.7%	0%	0%	5.7%	5.7%	25%	0%	0%	25%	0%	1.3%	0%	1.3%	1.3%	1.3%	-
Lights	530	0	0	530	530	3	0	0	3	0	543	0	543	543	543	-
Lights %	94.3%	0%	0%	94.3%	94.3%	75%	0%	0%	75%	0%	98.7%	0%	98.7%	98.7%	98.7%	-
Single-Unit Trucks	26	0	0	26	26	1	0	0	1	0	5	0	5	5	5	-
Single-Unit Trucks %	4.6%	0%	0%	4.6%	4.6%	25%	0%	0%	25%	0%	0.9%	0%	0.9%	0.9%	0.9%	-
Buses	3	0	0	3	3	0	0	0	0	0	2	0	2	2	2	-
Buses %	0.5%	0%	0%	0.5%	0.5%	0%	0%	0%	0%	0%	0.4%	0%	0.4%	0.4%	0.4%	-
Articulated Trucks	3	0	0	3	3	0	0	0	0	0	0	0	0	0	0	-
Articulated Trucks %	0.5%	0%	0%	0.5%	0.5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	1	-	-	-	-	20	-	-	-	-	0	-	-
Pedestrians%	-	-	-	4.2%	-	-	-	-	83.3%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	12.5%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

Peak Hour: 08:30 AM - 09:30 AM Weather: Broken Clouds (18.39 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)





Turning Movement Count (2 . DUFFERIN ST & BRIDGELAND AVE / YORKDALE RD)

Start Time	N Approach DUFFERIN RD						E Approach YORKDALE RD						S Approach DUFFERIN RD						W Approach BRIDGELAND AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	41	114	8	0	0	163	45	67	57	0	3	169	11	190	8	1	5	210	8	23	44	0	2	75	617	
07:45:00	57	128	6	0	1	191	61	92	83	0	2	236	19	218	8	0	2	245	5	29	47	0	7	81	753	
08:00:00	39	134	5	1	2	179	59	106	78	0	2	243	18	228	6	0	2	252	7	35	53	0	3	95	769	
08:15:00	57	126	10	1	0	194	53	97	87	0	0	237	28	226	6	0	2	260	8	31	47	0	3	86	777	2916
08:30:00	54	139	7	1	0	201	62	130	111	0	0	303	30	229	5	1	0	265	8	34	45	0	2	87	856	3155
08:45:00	69	174	10	0	2	253	60	147	114	0	7	321	21	222	3	0	7	246	6	30	58	0	2	94	914	3316
09:00:00	40	126	3	0	0	169	90	164	112	0	1	366	13	230	13	0	3	256	9	25	46	0	2	80	871	3418
09:15:00	47	148	5	0	1	200	71	117	86	0	2	274	17	199	6	0	3	222	5	28	62	0	3	95	791	3432
BREAK																										
16:00:00	51	140	15	0	7	206	130	80	56	0	14	266	21	300	4	1	1	326	8	48	79	0	5	135	933	
16:15:00	54	171	16	0	0	241	145	79	58	0	2	282	17	288	6	2	3	313	8	51	82	0	2	141	977	
16:30:00	48	155	12	0	2	215	124	103	89	0	8	316	17	320	3	0	5	340	8	36	71	0	3	115	986	
16:45:00	53	180	16	2	0	251	117	83	81	0	9	281	11	301	4	0	0	316	3	35	84	0	7	122	970	3866
17:00:00	52	148	12	1	0	213	110	67	70	0	8	247	15	327	6	1	8	349	5	69	94	0	7	168	977	3910
17:15:00	55	182	3	0	3	240	124	74	84	0	8	282	24	351	3	0	5	378	4	48	82	0	10	134	1034	3967
17:30:00	59	200	19	1	1	279	126	88	98	0	9	312	11	294	4	0	3	309	3	46	73	0	7	122	1022	4003
17:45:00	46	152	16	0	0	214	128	102	67	0	7	297	14	313	6	0	1	333	6	41	71	0	6	118	962	3995
Grand Total	822	2417	163	7	19	3409	1505	1596	1331	0	82	4432	287	4236	91	6	50	4620	101	609	1038	0	71	1748	14209	-
Approach%	24.1%	70.9%	4.8%	0.2%	-	-	34%	36%	30%	0%	-	-	6.2%	91.7%	2%	0.1%	-	5.8%	34.8%	59.4%	0%	-	-	-	-	
Totals %	5.8%	17%	1.1%	0%	-	24%	10.6%	11.2%	9.4%	0%	-	31.2%	2%	29.8%	0.6%	0%	-	32.5%	0.7%	4.3%	7.3%	0%	-	12.3%	-	
Heavy	39	113	5	0	-	-	37	65	24	0	-	-	30	203	18	0	-	-	9	34	57	0	-	-	-	
Heavy %	4.7%	4.7%	3.1%	0%	-	-	2.5%	4.1%	1.8%	0%	-	-	10.5%	4.8%	19.8%	0%	-	-	8.9%	5.6%	5.5%	0%	-	-	-	
Bicycles	1	3	0	0	-	-	0	0	0	0	-	-	0	4	0	0	-	-	0	0	0	0	-	-	-	
Bicycle %	0.1%	0.1%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	0.1%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	



Peak Hour: 08:30 AM - 09:30 AM Weather: Broken Clouds (18.39 °C)

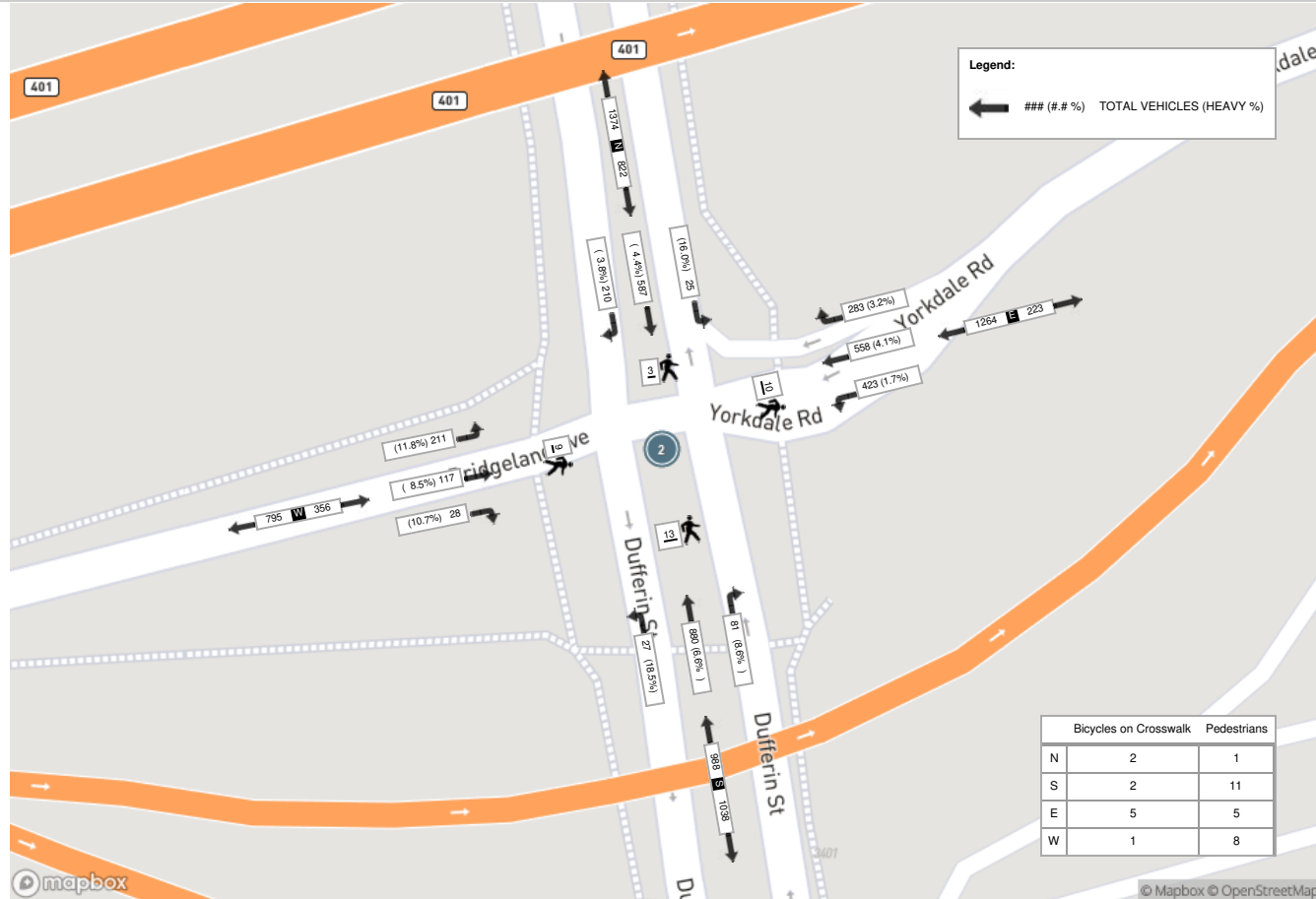
Start Time	N Approach DUFFERIN RD						E Approach YORKDALE RD						S Approach DUFFERIN RD						W Approach BRIDGELAND AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	54	139	7	1	0	201	62	130	111	0	0	303	30	229	5	1	0	265	8	34	45	0	2	87	856
08:45:00	69	174	10	0	2	253	60	147	114	0	7	321	21	222	3	0	7	246	6	30	58	0	2	94	914
09:00:00	40	126	3	0	0	169	90	164	112	0	1	366	13	230	13	0	3	256	9	25	46	0	2	80	871
09:15:00	47	148	5	0	1	200	71	117	86	0	2	274	17	199	6	0	3	222	5	28	62	0	3	95	791
Grand Total	210	587	25	1	3	823	283	558	423	0	10	1264	81	880	27	1	13	989	28	117	211	0	9	356	3432
Approach%	25.5%	71.3%	3%	0.1%	-	-	22.4%	44.1%	33.5%	0%	-	-	8.2%	89%	2.7%	0.1%	-	-	7.9%	32.9%	59.3%	0%	-	-	-
Totals %	6.1%	17.1%	0.7%	0%	24%	24%	8.2%	16.3%	12.3%	0%	36.8%	36.8%	2.4%	25.6%	0.8%	0%	28.8%	28.8%	0.8%	3.4%	6.1%	0%	10.4%	10.4%	-
PHF	0.76	0.84	0.63	0.25	0.81	0.81	0.79	0.85	0.93	0	0.86	0.86	0.68	0.96	0.52	0.25	0.93	0.93	0.78	0.86	0.85	0	0.94	0.94	-
Heavy	8	26	4	0	38	38	9	23	7	0	39	39	7	58	5	0	70	70	3	10	25	0	38	38	-
Heavy %	3.8%	4.4%	16%	0%	4.6%	4.6%	3.2%	4.1%	1.7%	0%	3.1%	3.1%	8.6%	6.6%	18.5%	0%	7.1%	7.1%	10.7%	8.5%	11.8%	0%	10.7%	10.7%	-
Lights	202	561	21	1	785	785	274	535	416	0	1225	1225	74	822	22	1	919	919	25	107	186	0	318	318	-
Lights %	96.2%	95.6%	84%	100%	95.4%	95.4%	96.8%	95.9%	98.3%	0%	96.9%	96.9%	91.4%	93.4%	81.5%	100%	92.9%	92.9%	89.3%	91.5%	88.2%	0%	89.3%	89.3%	-
Single-Unit Trucks	8	4	0	0	12	12	6	22	6	0	34	34	3	25	3	0	31	31	3	7	22	0	32	32	-
Single-Unit Trucks %	3.8%	0.7%	0%	0%	1.5%	1.5%	2.1%	3.9%	1.4%	0%	2.7%	2.7%	3.7%	2.8%	11.1%	0%	3.1%	3.1%	10.7%	6%	10.4%	0%	9%	9%	-
Buses	0	21	3	0	24	24	2	0	1	0	3	3	4	25	2	0	31	31	0	3	0	0	3	3	-
Buses %	0%	3.6%	12%	0%	2.9%	2.9%	0.7%	0%	0.2%	0%	0.2%	0.2%	4.9%	2.8%	7.4%	0%	3.1%	3.1%	0%	2.6%	0%	0%	0.8%	0.8%	-
Articulated Trucks	0	1	1	0	2	2	1	1	0	0	2	2	0	8	0	0	8	8	0	0	3	0	3	3	-
Articulated Trucks %	0%	0.2%	4%	0%	0.2%	0.2%	0.4%	0.2%	0%	0%	0.2%	0.2%	0%	0.9%	0%	0%	0.8%	0.8%	0%	0%	1.4%	0%	0.8%	0.8%	-
Pedestrians	-	-	-	-	1	-	-	-	-	5	-	-	-	-	-	11	-	-	-	-	-	-	8	-	-
Pedestrians%	-	-	-	-	2.9%	-	-	-	-	14.3%	-	-	-	-	-	31.4%	-	-	-	-	-	-	22.9%	-	-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	5	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	5.7%	-	-	-	-	14.3%	-	-	-	-	-	5.7%	-	-	-	-	-	-	2.9%	-	-
Bicycles on Road	1	0	0	0	0	-	0	0	0	0	-	-	0	1	0	0	-	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-



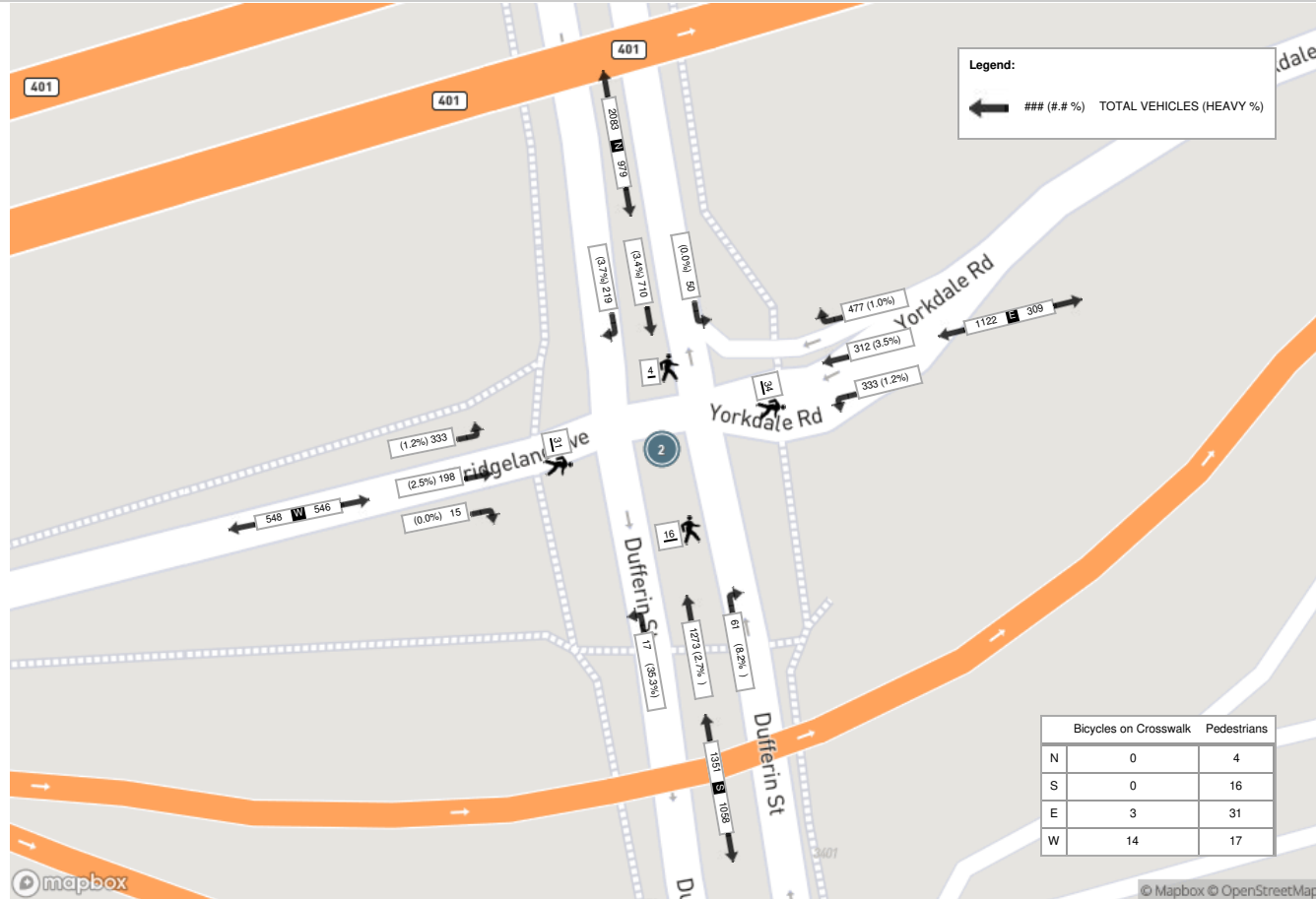
Peak Hour: 04:45 PM - 05:45 PM Weather: Clear Sky (29.17 °C)

Start Time	N Approach DUFFERIN RD						E Approach YORKDALE RD						S Approach DUFFERIN RD						W Approach BRIDGELAND AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	53	180	16	2	0	251	117	83	81	0	9	281	11	301	4	0	0	316	3	35	84	0	7	122	970
17:00:00	52	148	12	1	0	213	110	67	70	0	8	247	15	327	6	1	8	349	5	69	94	0	7	168	977
17:15:00	55	182	3	0	3	240	124	74	84	0	8	282	24	351	3	0	5	378	4	48	82	0	10	134	1034
17:30:00	59	200	19	1	1	279	126	88	98	0	9	312	11	294	4	0	3	309	3	46	73	0	7	122	1022
Grand Total	219	710	50	4	4	983	477	312	333	0	34	1122	61	1273	17	1	16	1352	15	198	333	0	31	546	4003
Approach%	22.3%	72.2%	5.1%	0.4%	-	-	42.5%	27.8%	29.7%	0%	-	-	4.5%	94.2%	1.3%	0.1%	-	-	2.7%	36.3%	61%	0%	-	-	-
Totals %	5.5%	17.7%	1.2%	0.1%	24.6%	11.9%	7.8%	8.3%	0%	28%	1.5%	31.8%	0.4%	0%	33.8%	0.4%	4.9%	8.3%	0%	13.6%	-	-	-		
PHF	0.93	0.89	0.66	0.5	0.88	0.95	0.89	0.85	0	0.9	0.64	0.91	0.71	0.25	0.89	0.75	0.72	0.89	0	0.81	-	-	-		
Heavy	8	24	0	0	32	5	11	4	0	20	5	35	6	0	46	0	5	4	0	9	-	-	-		
Heavy %	3.7%	3.4%	0%	0%	3.3%	1%	3.5%	1.2%	0%	1.8%	8.2%	2.7%	35.3%	0%	3.4%	0%	2.5%	1.2%	0%	1.6%	-	-	-		
Lights	211	686	50	4	951	472	301	329	0	1102	56	1238	11	1	1306	15	193	329	0	537	-	-	-		
Lights %	96.3%	96.6%	100%	100%	96.7%	99%	96.5%	98.8%	0%	98.2%	91.8%	97.3%	64.7%	100%	96.6%	100%	97.5%	98.8%	0%	98.4%	-	-	-		
Single-Unit Trucks	8	6	0	0	14	5	11	3	0	19	2	17	4	0	23	0	2	4	0	6	-	-	-		
Single-Unit Trucks %	3.7%	0.8%	0%	0%	1.4%	1%	3.5%	0.9%	0%	1.7%	3.3%	1.3%	23.5%	0%	1.7%	0%	1%	1.2%	0%	1.1%	-	-	-		
Buses	0	18	0	0	18	0	0	1	0	1	3	16	2	0	21	0	3	0	0	3	-	-	-		
Buses %	0%	2.5%	0%	0%	1.8%	0%	0%	0.3%	0%	0.1%	4.9%	1.3%	11.8%	0%	1.6%	0%	1.5%	0%	0%	0.5%	-	-	-		
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	-	-	-		
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.1%	0%	0%	0%	0%	0%	-	-	-		
Pedestrians	-	-	-	-	4	-	-	-	-	31	-	-	-	-	16	-	-	-	-	17	-	-	-		
Pedestrians%	-	-	-	-	4.7%	-	-	-	-	36.5%	-	-	-	-	18.8%	-	-	-	-	20%	-	-	-		
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-	-	-	14	-	-	-		
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	3.5%	-	-	-	-	0%	-	-	-	-	16.5%	-	-	-		
Bicycles on Road	0	1	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: 08:30 AM - 09:30 AM Weather: Broken Clouds (18.39 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Clear Sky (29.17 °C)





Turning Movement Count (7 . DUFFERIN ST & CARTWRIGHT AVE)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach CARTWRIGHT AVE					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	13	295	0	0	308	217	1	0	1	218	2	2	0	3	4	530	
07:45:00	17	375	0	0	392	233	1	0	0	234	6	3	0	4	9	635	
08:00:00	11	378	0	0	389	240	0	0	0	240	5	3	0	3	8	637	
08:15:00	11	396	0	0	407	239	2	0	0	241	5	4	0	4	9	657	2459
08:30:00	20	403	0	0	423	245	2	0	0	247	6	1	0	2	7	677	2606
08:45:00	23	453	0	0	476	260	4	0	0	264	7	0	0	0	7	747	2718
09:00:00	30	431	0	0	461	227	4	0	0	231	6	3	0	4	9	701	2782
09:15:00	25	386	0	0	411	211	3	0	0	214	6	3	0	1	9	634	2759
BREAK																	
16:00:00	8	329	0	0	337	244	4	1	0	249	17	8	0	2	25	611	
16:15:00	13	372	0	0	385	257	6	0	0	263	18	5	0	3	23	671	
16:30:00	14	363	0	0	377	259	0	0	0	259	17	5	0	1	22	658	
16:45:00	12	379	0	0	391	256	1	0	0	257	26	3	0	5	29	677	2617
17:00:00	8	354	0	0	362	246	2	0	0	248	29	17	0	9	46	656	2662
17:15:00	10	396	0	0	406	269	0	2	0	271	19	9	0	7	28	705	2696
17:30:00	3	415	0	0	418	229	0	0	0	229	21	14	0	7	35	682	2720
17:45:00	11	398	1	0	410	237	0	0	0	237	19	10	0	4	29	676	2719
Grand Total	229	6123	1	0	6353	3869	30	3	1	3902	209	90	0	59	299	10554	-
Approach%	3.6%	96.4%	0%	-	-	99.2%	0.8%	0.1%	-	-	69.9%	30.1%	0%	-	-	-	-
Totals %	2.2%	58%	0%	-	60.2%	36.7%	0.3%	0%	-	37%	2%	0.9%	0%	-	2.8%	-	-
Heavy	6	269	0	-	-	224	1	0	-	-	1	3	0	-	-	-	-
Heavy %	2.6%	4.4%	0%	-	-	5.8%	3.3%	0%	-	-	0.5%	3.3%	0%	-	-	-	-
Bicycles	1	3	0	-	-	4	0	0	-	-	0	0	0	-	-	-	-
Bicycle %	0.4%	0%	0%	-	-	0.1%	0%	0%	-	-	0%	0%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach CARTWRIGHT AVE					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
08:15:00	11	396	0	0	407	239	2	0	0	241	5	4	0	4	9	657
08:30:00	20	403	0	0	423	245	2	0	0	247	6	1	0	2	7	677
08:45:00	23	453	0	0	476	260	4	0	0	264	7	0	0	0	7	747
09:00:00	30	431	0	0	461	227	4	0	0	231	6	3	0	4	9	701
Grand Total	84	1683	0	0	1767	971	12	0	0	983	24	8	0	10	32	2782
Approach%	4.8%	95.2%	0%		-	98.8%	1.2%	0%		-	75%	25%	0%		-	-
Totals %	3%	60.5%	0%		63.5%	34.9%	0.4%	0%		35.3%	0.9%	0.3%	0%		1.2%	-
PHF	0.7	0.93	0		0.93	0.93	0.75	0		0.93	0.86	0.5	0		0.89	-
Heavy	5	83	0		88	71	1	0		72	1	1	0		2	-
Heavy %	6%	4.9%	0%		5%	7.3%	8.3%	0%		7.3%	4.2%	12.5%	0%		6.3%	-
Lights	79	1600	0		1679	900	11	0		911	23	7	0		30	-
Lights %	94%	95.1%	0%		95%	92.7%	91.7%	0%		92.7%	95.8%	87.5%	0%		93.8%	-
Single-Unit Trucks	5	42	0		47	32	0	0		32	1	1	0		2	-
Single-Unit Trucks %	6%	2.5%	0%		2.7%	3.3%	0%	0%		3.3%	4.2%	12.5%	0%		6.3%	-
Buses	0	27	0		27	29	1	0		30	0	0	0		0	-
Buses %	0%	1.6%	0%		1.5%	3%	8.3%	0%		3.1%	0%	0%	0%		0%	-
Articulated Trucks	0	14	0		14	10	0	0		10	0	0	0		0	-
Articulated Trucks %	0%	0.8%	0%		0.8%	1%	0%	0%		1%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	10	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	100%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	1	0	0	0	-	1	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



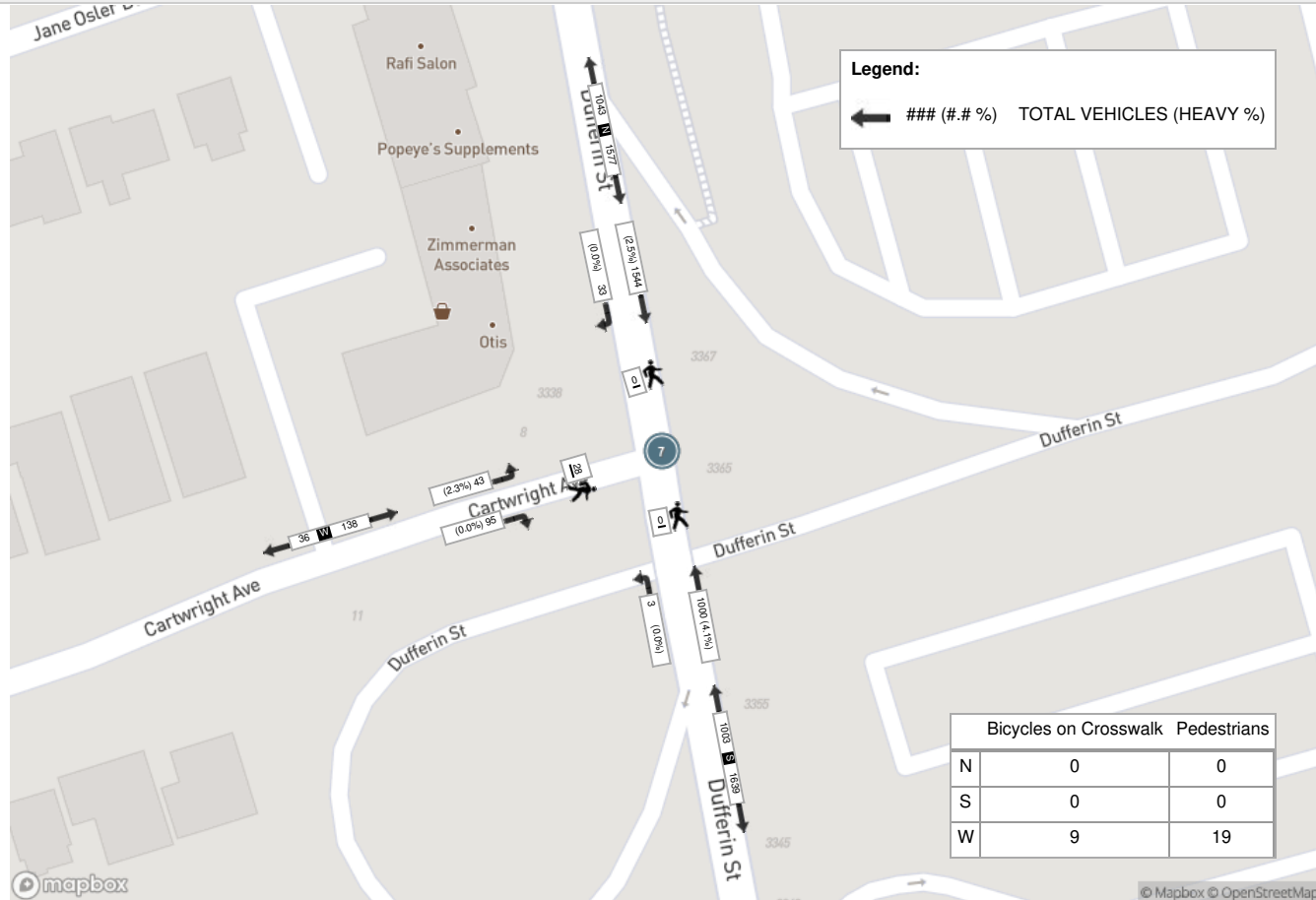
Peak Hour: 04:45 PM - 05:45 PM Weather: Clear Sky (29.17 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach CARTWRIGHT AVE					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:45:00	12	379	0	0	391	256	1	0	0	257	26	3	0	5	29	677
17:00:00	8	354	0	0	362	246	2	0	0	248	29	17	0	9	46	656
17:15:00	10	396	0	0	406	269	0	2	0	271	19	9	0	7	28	705
17:30:00	3	415	0	0	418	229	0	0	0	229	21	14	0	7	35	682
Grand Total	33	1544	0	0	1577	1000	3	2	0	1005	95	43	0	28	138	2720
Approach%	2.1%	97.9%	0%	-	-	99.5%	0.3%	0.2%	-	-	68.8%	31.2%	0%	-	-	-
Totals %	1.2%	56.8%	0%	58%	36.8%	0.1%	0.1%	36.9%	3.5%	1.6%	0%	5.1%	-	-	-	-
PHF	0.69	0.93	0	0.94	0.93	0.38	0.25	0.93	0.82	0.63	0	0.75	-	-	-	-
Heavy	0	39	0	39	41	0	0	41	0	1	0	1	-	-	-	-
Heavy %	0%	2.5%	0%	2.5%	4.1%	0%	0%	4.1%	0%	2.3%	0%	0.7%	-	-	-	-
Lights	33	1505	0	1538	959	3	2	964	95	42	0	137	-	-	-	-
Lights %	100%	97.5%	0%	97.5%	95.9%	100%	100%	95.9%	100%	97.7%	0%	99.3%	-	-	-	-
Single-Unit Trucks	0	18	0	18	23	0	0	23	0	1	0	1	-	-	-	-
Single-Unit Trucks %	0%	1.2%	0%	1.1%	2.3%	0%	0%	2.3%	0%	2.3%	0%	0.7%	-	-	-	-
Buses	0	20	0	20	17	0	0	17	0	0	0	0	-	-	-	-
Buses %	0%	1.3%	0%	1.3%	1.7%	0%	0%	1.7%	0%	0%	0%	0%	-	-	-	-
Articulated Trucks	0	1	0	1	1	0	0	1	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	0.1%	0%	0.1%	0.1%	0%	0%	0.1%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	19	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	0%	-	-	-	67.9%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	9	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	0%	-	-	-	32.1%	-	-	-	-
Bicycles on Road	0	0	0	0	-	1	0	0	0	-	0	0	0	-	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Clear Sky (29.17 °C)





Turning Movement Count (5 . DUFFERIN ST & HONDA ACCESS)

Start Time	N Approach DUFFERIN ST						E Approach YORKDALE MALL ACCESS						S Approach DUFFERIN ST						W Approach MIDTOWN HONDA ACCESS						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	6	336	0	0	2	342	3	0	0	0	6	3	0	234	2	0	5	236	1	0	0	0	1	1	582	
07:45:00	9	394	0	1	0	404	0	0	0	0	8	0	0	225	6	0	6	231	6	0	1	0	3	7	642	
08:00:00	5	372	0	0	0	377	3	0	1	0	3	4	0	248	2	0	4	250	1	0	1	0	1	2	633	
08:15:00	7	403	0	0	0	410	2	0	0	0	1	2	0	255	2	0	3	257	2	0	4	0	2	6	675	2532
08:30:00	7	433	0	1	1	441	4	0	0	0	1	4	0	254	4	0	5	258	2	0	1	0	1	3	706	2656
08:45:00	9	493	0	0	1	502	1	0	0	0	3	1	0	249	2	0	6	251	1	0	3	0	3	4	758	2772
09:00:00	12	438	0	1	1	451	0	0	2	0	9	2	0	239	7	0	3	246	3	0	3	0	1	6	705	2844
09:15:00	6	399	0	1	0	406	0	0	2	0	2	2	0	219	2	0	7	221	2	0	4	0	2	6	635	2804
BREAK																										
16:00:00	3	339	0	0	4	342	0	0	0	0	6	0	0	296	1	0	13	297	3	0	9	1	3	13	652	
16:15:00	8	371	0	0	3	379	3	0	0	0	4	3	1	295	2	1	13	299	9	0	9	0	1	18	699	
16:30:00	3	364	0	0	2	367	1	0	0	0	6	1	0	313	2	0	10	315	13	0	8	0	0	21	704	
16:45:00	7	376	0	0	3	383	1	0	0	0	4	1	0	285	4	0	16	289	9	0	8	0	3	17	690	2745
17:00:00	3	364	0	0	2	367	1	0	1	0	6	2	0	323	0	0	9	323	7	0	6	0	8	13	705	2798
17:15:00	3	400	0	0	0	403	2	0	0	0	3	2	0	344	1	0	16	345	3	0	7	0	9	10	760	2859
17:30:00	3	442	0	1	2	446	0	0	0	0	3	0	0	280	2	0	8	282	4	0	4	0	6	8	736	2891
17:45:00	5	400	0	0	2	405	2	0	0	0	2	2	0	297	2	1	14	300	7	0	6	0	6	13	720	2921
Grand Total	96	6324	0	5	23	6425	23	0	6	0	67	29	1	4356	41	2	138	4400	73	0	74	1	50	148	11002	-
Approach%	1.5%	98.4%	0%	0.1%	-	-	79.3%	0%	20.7%	0%	-	-	0%	99%	0.9%	0%	-	-	49.3%	0%	50%	0.7%	-	-	-	-
Totals %	0.9%	57.5%	0%	0%	-	58.4%	0.2%	0%	0.1%	0%	-	0.3%	0%	39.6%	0.4%	0%	40%	40%	0.7%	0%	0.7%	0%	1.3%	-	-	-
Heavy	3	267	0	0	-	-	15	0	5	0	-	-	0	244	1	0	-	-	3	0	0	0	-	-	-	-
Heavy %	3.1%	4.2%	0%	0%	-	-	65.2%	0%	83.3%	0%	-	-	0%	5.6%	2.4%	0%	-	-	4.1%	0%	0%	0%	-	-	-	-
Bicycles	0	4	0	0	-	-	1	0	0	0	-	-	0	4	0	0	-	-	0	0	0	0	-	-	-	-
Bicycle %	0%	0.1%	0%	0%	-	-	4.3%	0%	0%	0%	-	-	0%	0.1%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)

Start Time	N Approach DUFFERIN ST						E Approach YORKDALE MALL ACCESS						S Approach DUFFERIN ST						W Approach MIDTOWN HONDA ACCESS						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	7	403	0	0	0	410	2	0	0	0	1	2	0	255	2	0	3	257	2	0	4	0	2	6	675
08:30:00	7	433	0	1	1	441	4	0	0	0	1	4	0	254	4	0	5	258	2	0	1	0	1	3	706
08:45:00	9	493	0	0	1	502	1	0	0	0	3	1	0	249	2	0	6	251	1	0	3	0	3	4	758
09:00:00	12	438	0	1	1	451	0	0	2	0	9	2	0	239	7	0	3	246	3	0	3	0	1	6	705
Grand Total	35	1767	0	2	3	1804	7	0	2	0	14	9	0	997	15	0	17	1012	8	0	11	0	7	19	2844
Approach%	1.9%	97.9%	0%	0.1%	-	-	77.8%	0%	22.2%	0%	-	0%	98.5%	1.5%	0%	-	-	42.1%	0%	57.9%	0%	-	-	-	
Totals %	1.2%	62.1%	0%	0.1%	63.4%	0.2%	0%	0.1%	0%	0.3%	0%	35.1%	0.5%	0%	35.6%	0.3%	0%	0.4%	0%	0.7%	-	-	-	-	
PHF	0.73	0.9	0	0.5	0.9	0.44	0	0.25	0	0.56	0	0.98	0.54	0	0.98	0.67	0	0.69	0	0.79	-	-	-	-	
Heavy	0	85	0	0	85	4	0	1	0	5	0	74	1	0	75	1	0	0	0	1	-	-	-	-	
Heavy %	0%	4.8%	0%	0%	4.7%	57.1%	0%	50%	0%	55.6%	0%	7.4%	6.7%	0%	7.4%	12.5%	0%	0%	0%	5.3%	-	-	-	-	
Lights	35	1682	0	2	1719	3	0	1	0	4	0	923	14	0	937	7	0	11	0	18	-	-	-	-	
Lights %	100%	95.2%	0%	100%	95.3%	42.9%	0%	50%	0%	44.4%	0%	92.6%	93.3%	0%	92.6%	87.5%	0%	100%	0%	94.7%	-	-	-	-	
Single-Unit Trucks	0	47	0	0	47	3	0	1	0	4	0	33	1	0	34	1	0	0	0	1	-	-	-	-	
Single-Unit Trucks %	0%	2.7%	0%	0%	2.6%	42.9%	0%	50%	0%	44.4%	0%	3.3%	6.7%	0%	3.4%	12.5%	0%	0%	0%	5.3%	-	-	-	-	
Buses	0	25	0	0	25	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	-	-	-	-	
Buses %	0%	1.4%	0%	0%	1.4%	0%	0%	0%	0%	0%	0%	3.1%	0%	0%	3.1%	0%	0%	0%	0%	0%	-	-	-	-	
Articulated Trucks	0	13	0	0	13	1	0	0	0	1	0	10	0	0	10	0	0	0	0	0	-	-	-	-	
Articulated Trucks %	0%	0.7%	0%	0%	0.7%	14.3%	0%	0%	0%	11.1%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	-	-	-	-	
Pedestrians	-	-	-	-	3	-	-	-	-	11	-	-	-	-	17	-	-	-	-	7	-	-	-	-	
Pedestrians%	-	-	-	-	7.3%	-	-	-	-	26.8%	-	-	-	-	41.5%	-	-	-	-	17.1%	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-	-	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	7.3%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	
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: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)

Start Time	N Approach DUFFERIN ST						E Approach YORKDALE MALL ACCESS						S Approach DUFFERIN ST						W Approach MIDTOWN HONDA ACCESS						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	3	364	0	0	2	367	1	0	1	0	6	2	0	323	0	0	9	323	7	0	6	0	8	13	705
17:15:00	3	400	0	0	0	403	2	0	0	0	3	2	0	344	1	0	16	345	3	0	7	0	9	10	760
17:30:00	3	442	0	1	2	446	0	0	0	0	3	0	0	280	2	0	8	282	4	0	4	0	6	8	736
17:45:00	5	400	0	0	2	405	2	0	0	0	2	2	0	297	2	1	14	300	7	0	6	0	6	13	720
Grand Total	14	1606	0	1	6	1621	5	0	1	0	14	6	0	1244	5	1	47	1250	21	0	23	0	29	44	2921
Approach%	0.9%	99.1%	0%	0.1%	-	-	83.3%	0%	16.7%	0%	-	-	0%	99.5%	0.4%	0.1%	-	-	47.7%	0%	52.3%	0%	-	-	-
Totals %	0.5%	55%	0%	0%	55.5%	0.2%	0%	0%	0%	0.2%	0%	42.6%	0.2%	0%	42.8%	0.7%	0%	0.8%	0%	1.5%	-	-	-	-	-
PHF	0.7	0.91	0	0.25	0.91	0.63	0	0.25	0	0.75	0	0.9	0.63	0.25	0.91	0.75	0	0.82	0	0.85	-	-	-	-	-
Heavy	1	32	0	0	33	4	0	1	0	5	0	41	0	0	41	1	0	0	0	1	-	-	-	-	-
Heavy %	7.1%	2%	0%	0%	2%	80%	0%	100%	0%	83.3%	0%	3.3%	0%	0%	3.3%	4.8%	0%	0%	0%	2.3%	-	-	-	-	-
Lights	13	1574	0	1	1588	1	0	0	0	1	0	1203	5	1	1209	20	0	23	0	43	-	-	-	-	-
Lights %	92.9%	98%	0%	100%	98%	20%	0%	0%	0%	16.7%	0%	96.7%	100%	100%	96.7%	95.2%	0%	100%	0%	97.7%	-	-	-	-	-
Single-Unit Trucks	0	12	0	0	12	4	0	1	0	5	0	20	0	0	20	0	0	0	0	0	-	-	-	-	-
Single-Unit Trucks %	0%	0.7%	0%	0%	0.7%	80%	0%	100%	0%	83.3%	0%	1.6%	0%	0%	1.6%	0%	0%	0%	0%	0%	-	-	-	-	-
Buses	1	20	0	0	21	0	0	0	0	0	0	20	0	0	20	1	0	0	0	1	-	-	-	-	-
Buses %	7.1%	1.2%	0%	0%	1.3%	0%	0%	0%	0%	0%	0%	1.6%	0%	0%	1.6%	4.8%	0%	0%	0%	2.3%	-	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	-	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0.1%	0%	0%	0%	0%	0%	-	-	-	-	-
Pedestrians	-	-	-	-	6	-	-	-	-	12	-	-	-	-	-	-	-	46	-	-	-	-	18	-	-
Pedestrians%	-	-	-	-	6.3%	-	-	-	-	12.5%	-	-	-	-	-	-	47.9%	-	-	-	-	18.8%	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	11	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	2.1%	-	-	-	-	-	-	1%	-	-	-	-	11.5%	-	-	-
Bicycles on Road	0	1	0	0	0	-	1	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)





Turning Movement Count (6 . DUFFERIN ST & JANE OSTER BLVD)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach JANE OSLER BLVD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:30:00	5	314	0	0	319	232	0	1	1	233	1	7	0	3	8	560	
07:45:00	4	404	0	0	408	236	0	0	0	236	0	2	0	5	2	646	
08:00:00	0	379	0	0	379	248	2	1	0	251	1	2	0	5	3	633	
08:15:00	1	410	0	0	411	249	0	0	0	249	0	4	0	2	4	664	2503
08:30:00	3	422	0	0	425	252	1	0	0	253	1	4	0	3	5	683	2626
08:45:00	4	484	0	0	488	257	1	0	0	258	1	1	0	0	2	748	2728
09:00:00	9	444	0	0	453	241	0	0	0	241	1	5	0	3	6	700	2795
09:15:00	2	410	1	0	413	220	0	0	0	220	1	2	0	2	3	636	2767
BREAK																	
16:00:00	3	338	0	0	341	288	0	1	0	289	1	6	0	2	7	637	
16:15:00	2	384	0	0	386	299	1	1	0	301	0	4	0	5	4	691	
16:30:00	2	367	0	0	369	299	0	0	0	299	3	10	0	3	13	681	
16:45:00	5	391	1	1	397	284	3	1	0	288	1	6	0	10	7	692	2701
17:00:00	2	368	0	0	370	310	0	0	1	310	2	13	0	8	15	695	2759
17:15:00	7	406	0	0	413	341	2	0	0	343	0	11	0	11	11	767	2835
17:30:00	6	429	0	0	435	281	0	0	0	281	3	7	0	12	10	726	2880
17:45:00	0	415	0	0	415	291	1	0	0	292	0	5	0	8	5	712	2900
Grand Total	55	6365	2	1	6422	4328	11	5	2	4344	16	89	0	82	105	10871	-
Approach%	0.9%	99.1%	0%	-	-	99.6%	0.3%	0.1%	-	-	15.2%	84.8%	0%	-	-	-	-
Totals %	0.5%	58.6%	0%	59.1%	59.1%	39.8%	0.1%	0%	40%	40%	0.1%	0.8%	0%	1%	1%	-	-
Heavy	3	269	0	-	-	243	1	0	-	-	1	1	0	-	-	-	-
Heavy %	5.5%	4.2%	0%	-	-	5.6%	9.1%	0%	-	-	6.3%	1.1%	0%	-	-	-	-
Bicycles	0	3	0	-	-	10	0	0	-	-	0	0	0	-	-	-	-
Bicycle %	0%	0%	0%	-	-	0.2%	0%	0%	-	-	0%	0%	0%	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)

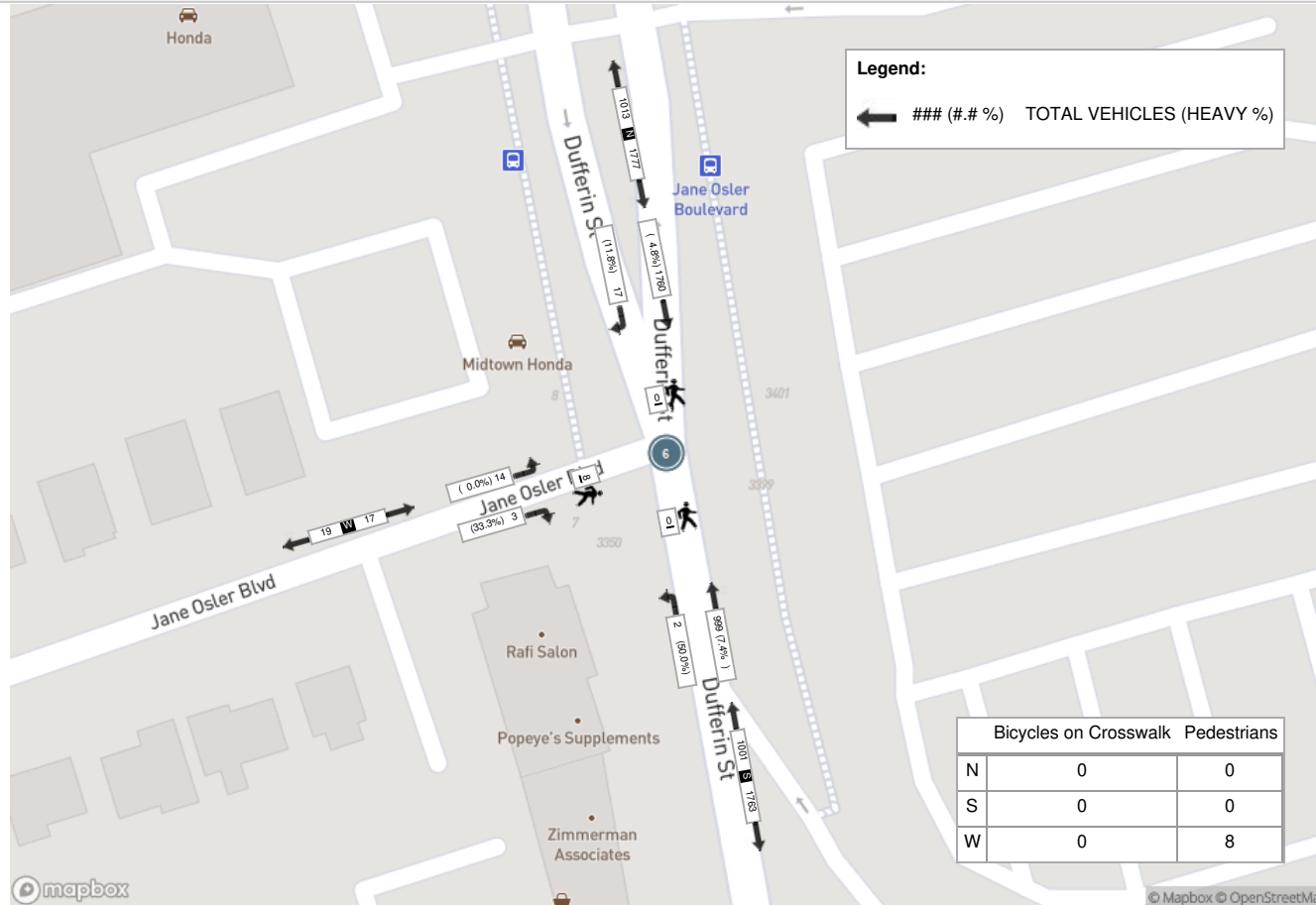
Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach JANE OSLER BLVD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
08:15:00	1	410	0	0	411	249	0	0	0	249	0	4	0	2	4	664
08:30:00	3	422	0	0	425	252	1	0	0	253	1	4	0	3	5	683
08:45:00	4	484	0	0	488	257	1	0	0	258	1	1	0	0	2	748
09:00:00	9	444	0	0	453	241	0	0	0	241	1	5	0	3	6	700
Grand Total	17	1760	0	0	1777	999	2	0	0	1001	3	14	0	8	17	2795
Approach%	1%	99%	0%	-	-	99.8%	0.2%	0%	-	-	17.6%	82.4%	0%	-	-	-
Totals %	0.6%	63%	0%	63.6%	63.6%	35.7%	0.1%	0%	35.8%	0.1%	0.5%	0%	0.6%	0.6%	-	-
PHF	0.47	0.91	0	0.91	0.91	0.97	0.5	0	0.97	0.75	0.7	0	0.71	0.71	-	-
Heavy	2	84	0	86	86	74	1	0	75	1	0	0	1	1	-	-
Heavy %	11.8%	4.8%	0%	4.8%	4.8%	7.4%	50%	0%	7.5%	33.3%	0%	0%	5.9%	5.9%	-	-
Lights	15	1676	0	1691	1691	925	1	0	926	2	14	0	16	16	-	-
Lights %	88.2%	95.2%	0%	95.2%	95.2%	92.6%	50%	0%	92.5%	66.7%	100%	0%	94.1%	94.1%	-	-
Single-Unit Trucks	2	46	0	48	48	33	0	0	33	0	0	0	0	0	-	-
Single-Unit Trucks %	11.8%	2.6%	0%	2.7%	2.7%	3.3%	0%	0%	3.3%	0%	0%	0%	0%	0%	-	-
Buses	0	25	0	25	25	32	1	0	33	1	0	0	1	1	-	-
Buses %	0%	1.4%	0%	1.4%	1.4%	3.2%	50%	0%	3.3%	33.3%	0%	0%	5.9%	5.9%	-	-
Articulated Trucks	0	13	0	13	13	9	0	0	9	0	0	0	0	0	-	-
Articulated Trucks %	0%	0.7%	0%	0.7%	0.7%	0.9%	0%	0%	0.9%	0%	0%	0%	0%	0%	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	8	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	0%	-	-	-	100%	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	0%	-	-	-
Bicycles on Road	0	0	0	0	-	4	0	0	0	-	0	0	0	-	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	0%	-	-	-



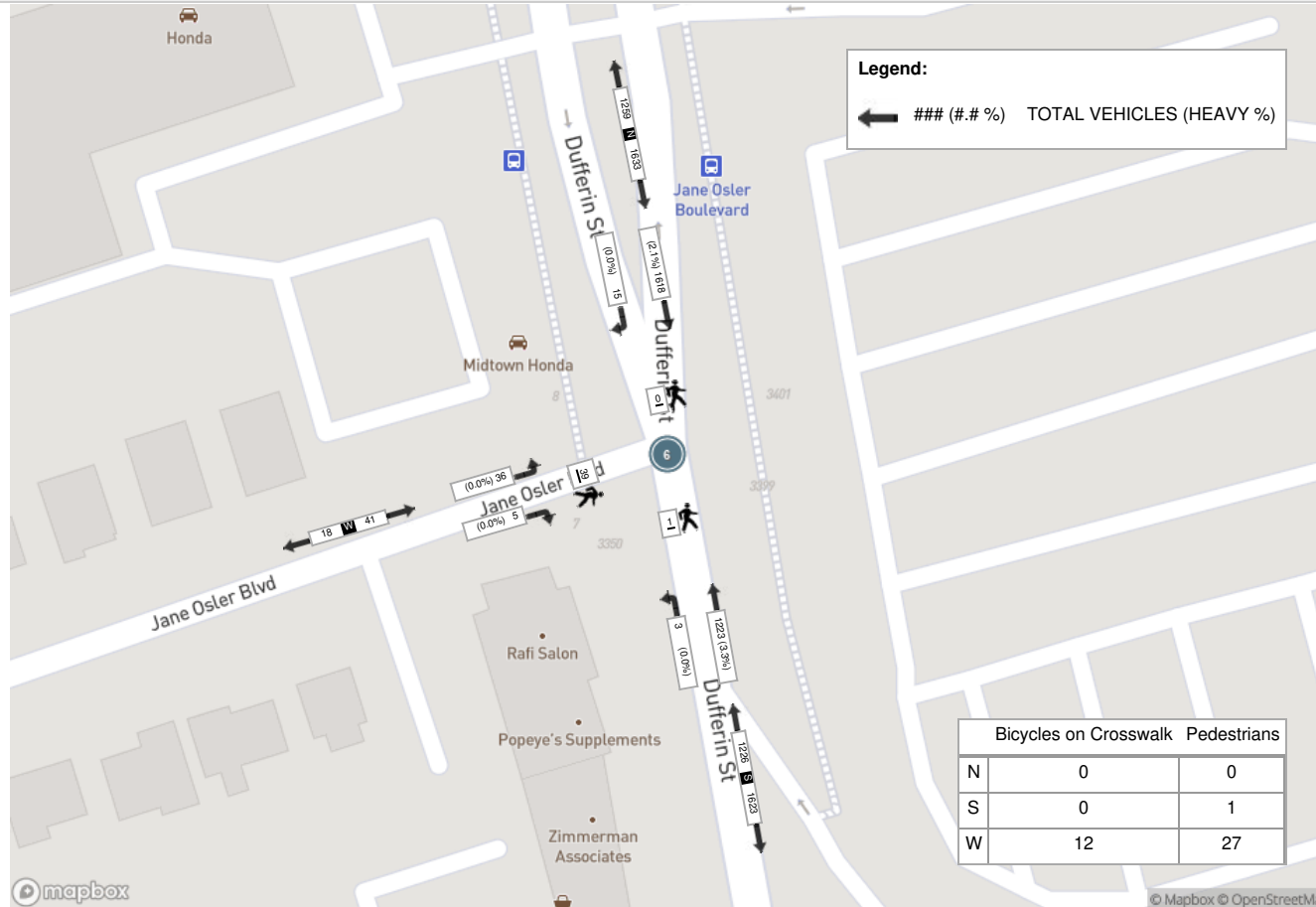
Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)

Start Time	N Approach DUFFERIN ST					S Approach DUFFERIN ST					W Approach JANE OSLER BLVD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
17:00:00	2	368	0	0	370	310	0	0	1	310	2	13	0	8	15	695
17:15:00	7	406	0	0	413	341	2	0	0	343	0	11	0	11	11	767
17:30:00	6	429	0	0	435	281	0	0	0	281	3	7	0	12	10	726
17:45:00	0	415	0	0	415	291	1	0	0	292	0	5	0	8	5	712
Grand Total	15	1618	0	0	1633	1223	3	0	1	1226	5	36	0	39	41	2900
Approach%	0.9%	99.1%	0%	-	-	99.8%	0.2%	0%	-	-	12.2%	87.8%	0%	-	-	-
Totals %	0.5%	55.8%	0%	56.3%	42.2%	0.1%	0%	42.3%	0.2%	1.2%	0%	1.4%	-	-	-	-
PHF	0.54	0.94	0	0.94	0.9	0.38	0	0.89	0.42	0.69	0	0.68	-	-	-	-
Heavy	0	34	0	34	40	0	0	40	0	0	0	0	0	0	0	-
Heavy %	0%	2.1%	0%	2.1%	3.3%	0%	0%	3.3%	0%	0%	0%	0%	0%	0%	0%	-
Lights	15	1584	0	1599	1183	3	0	1186	5	36	0	41	-	-	-	-
Lights %	100%	97.9%	0%	97.9%	96.7%	100%	0%	96.7%	100%	100%	0%	100%	-	-	-	-
Single-Unit Trucks	0	13	0	13	19	0	0	19	0	0	0	0	0	0	0	-
Single-Unit Trucks %	0%	0.8%	0%	0.8%	1.6%	0%	0%	1.5%	0%	0%	0%	0%	0%	0%	0%	-
Buses	0	21	0	21	20	0	0	20	0	0	0	0	0	0	0	-
Buses %	0%	1.3%	0%	1.3%	1.6%	0%	0%	1.6%	0%	0%	0%	0%	0%	0%	0%	-
Articulated Trucks	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	-
Articulated Trucks %	0%	0%	0%	0%	0.1%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	0	-	-	-	1	-	-	-	-	27	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	2.5%	-	-	-	-	67.5%	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	-	12	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	0%	-	-	-	-	30%	-	-	-
Bicycles on Road	0	0	0	0	-	2	0	0	0	-	0	0	0	-	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	-	0%	-	-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)





Turning Movement Count (3 . DUFFERIN ST & YORKDALE MALL ACCESS / HWY 401 EB OFF-RAMP)

Start Time	N Approach DUFFERIN ST					E Approach YORKDALE MALL ACCESS					S Approach DUFFERIN ST					W Approach HWY 401 OFF RAMP				Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	UTurn S:S	Peds S:	Approach Total	Right W:S	UTurn W:W	Peds W:	Approach Total		
07:30:00	181	0	0	0	181	3	0	0	3	3	4	221	0	0	225	148	0	2	148	557	
07:45:00	219	0	0	0	219	9	0	0	3	9	4	237	0	0	241	195	0	5	195	664	
08:00:00	219	0	0	0	219	7	0	0	4	7	3	243	0	0	246	156	0	3	156	628	
08:15:00	224	0	0	0	224	6	0	0	1	6	5	259	0	0	264	193	0	2	193	687	2536
08:30:00	257	0	0	1	257	3	0	0	0	3	3	252	0	0	255	178	0	1	178	693	2672
08:45:00	291	0	0	0	291	9	0	0	6	9	5	254	0	0	259	219	0	1	219	778	2786
09:00:00	249	0	0	0	249	9	0	0	4	9	2	246	0	0	248	213	0	0	213	719	2877
09:15:00	237	0	0	0	237	10	0	0	4	10	8	219	0	0	227	181	0	2	181	655	2845
***BREAK**																					
16:00:00	202	0	0	0	202	39	0	0	3	39	19	296	0	0	315	146	0	5	146	702	
16:15:00	239	0	0	0	239	30	0	0	2	30	17	295	0	0	312	141	0	2	141	722	
16:30:00	251	0	0	0	251	37	0	0	5	37	17	307	0	0	324	120	0	0	120	732	
16:45:00	268	0	0	0	268	34	0	0	1	34	11	307	0	0	318	123	0	5	123	743	2899
17:00:00	220	0	0	0	220	40	0	0	8	40	18	318	0	0	336	140	0	7	140	736	2933
17:15:00	275	0	0	0	275	36	0	0	1	36	17	350	0	0	367	134	0	11	134	812	3023
17:30:00	298	0	0	0	298	33	0	0	5	33	8	295	0	0	303	135	0	8	135	769	3060
17:45:00	251	0	0	0	251	31	0	0	3	31	14	307	0	0	321	158	0	4	158	761	3078
Grand Total	3881	0	0	1	3881	336	0	0	53	336	155	4406	0	0	4561	2580	0	58	2580	11358	-
Approach%	100%	0%	0%		-	100%	0%	0%		-	3.4%	96.6%	0%		-	100%	0%		-	-	-
Totals %	34.2%	0%	0%		34.2%	3%	0%	0%		3%	1.4%	38.8%	0%		40.2%	22.7%	0%		22.7%	-	-
Heavy	142	0	0		-	9	0	0		-	14	242	0		-	124	0		-	-	-
Heavy %	3.7%	0%	0%		-	2.7%	0%	0%		-	9%	5.5%	0%		-	4.8%	0%		-	-	-
Bicycles	6	0	0		-	1	0	0		-	0	7	0		-	0	0		-	-	-
Bicycle %	0.2%	0%	0%		-	0.3%	0%	0%		-	0%	0.2%	0%		-	0%	0%		-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)

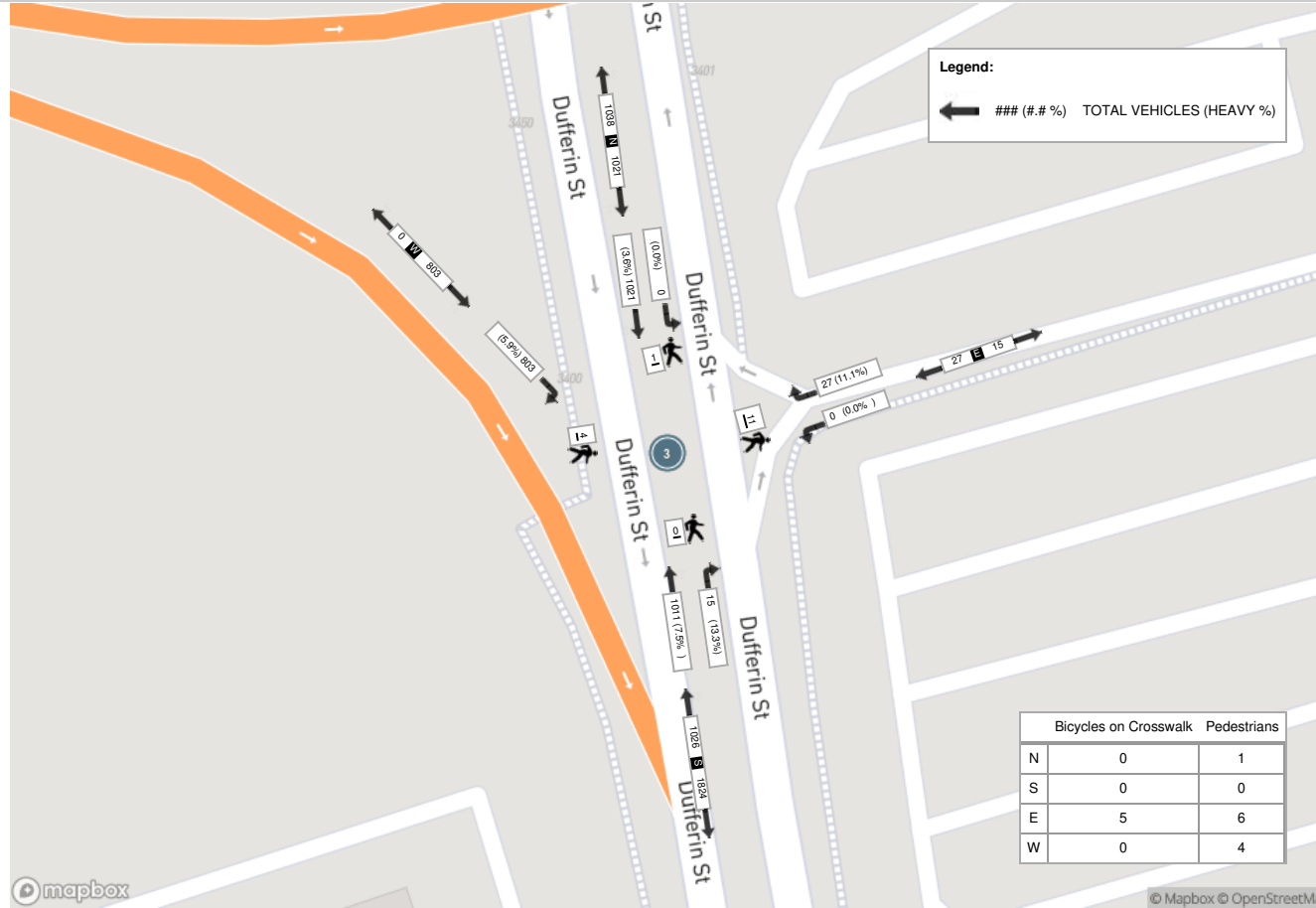
Start Time	N Approach DUFFERIN ST					E Approach YORKDALE MALL ACCESS					S Approach DUFFERIN ST					W Approach HWY 401 OFF RAMP					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total		
08:15:00	224	0	0	0	224	6	0	0	1	6	5	259	0	0	264	193	0	2	193	687	
08:30:00	257	0	0	1	257	3	0	0	0	3	3	252	0	0	255	178	0	1	178	693	
08:45:00	291	0	0	0	291	9	0	0	6	9	5	254	0	0	259	219	0	1	219	778	
09:00:00	249	0	0	0	249	9	0	0	4	9	2	246	0	0	248	213	0	0	213	719	
Grand Total	1021	0	0	1	1021	27	0	0	11	27	15	1011	0	0	1026	803	0	4	803	2877	
Approach%	100%	0%	0%	-	-	100%	0%	0%	-	-	1.5%	98.5%	0%	-	-	100%	0%	-	-	-	
Totals %	35.5%	0%	0%	35.5%	0.9%	0%	0%	0.9%	0.5%	35.1%	0%	35.7%	27.9%	0%	27.9%	-	-	-	-	-	
PHF	0.88	0	0	0.88	0.75	0	0	0.75	0.75	0.98	0	0.97	0.92	0	0.92	-	-	-	-	-	
Heavy	37	0	0	37	3	0	0	3	2	76	0	78	47	0	47	-	-	-	-	-	
Heavy %	3.6%	0%	0%	3.6%	11.1%	0%	0%	11.1%	13.3%	7.5%	0%	7.6%	5.9%	0%	5.9%	-	-	-	-	-	
Lights	984	0	0	984	24	0	0	24	13	935	0	948	756	0	756	-	-	-	-	-	
Lights %	96.4%	0%	0%	96.4%	88.9%	0%	0%	88.9%	86.7%	92.5%	0%	92.4%	94.1%	0%	94.1%	-	-	-	-	-	
Single-Unit Trucks	16	0	0	16	3	0	0	3	2	35	0	37	30	0	30	-	-	-	-	-	
Single-Unit Trucks %	1.6%	0%	0%	1.6%	11.1%	0%	0%	11.1%	13.3%	3.5%	0%	3.6%	3.7%	0%	3.7%	-	-	-	-	-	
Buses	18	0	0	18	0	0	0	0	0	28	0	28	6	0	6	-	-	-	-	-	
Buses %	1.8%	0%	0%	1.8%	0%	0%	0%	0%	0%	2.8%	0%	2.7%	0.7%	0%	0.7%	-	-	-	-	-	
Articulated Trucks	3	0	0	3	0	0	0	0	0	13	0	13	11	0	11	-	-	-	-	-	
Articulated Trucks %	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	1.3%	0%	1.3%	1.4%	0%	1.4%	-	-	-	-	-	
Pedestrians	-	-	-	1	-	-	-	6	-	-	-	0	-	-	4	-	-	-	-	-	
Pedestrians%	-	-	-	6.3%	-	-	-	37.5%	-	-	-	0%	-	-	25%	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	0	-	-	-	5	-	-	-	0	-	-	0	-	-	-	-	-	
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	31.3%	-	-	-	0%	-	-	0%	-	-	-	-	-	
Bicycles on Road	1	0	0	0	-	0	0	0	-	0	2	0	0	-	0	0	0	-	-	-	
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	0%	-	-	-	-	-	



Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)

Start Time	N Approach DUFFERIN ST					E Approach YORKDALE MALL ACCESS					S Approach DUFFERIN ST					W Approach HWY 401 OFF RAMP					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Right	UTurn	Peds	Approach Total		
17:00:00	220	0	0	0	220	40	0	0	8	40	18	318	0	0	336	140	0	7	140	736	
17:15:00	275	0	0	0	275	36	0	0	1	36	17	350	0	0	367	134	0	11	134	812	
17:30:00	298	0	0	0	298	33	0	0	5	33	8	295	0	0	303	135	0	8	135	769	
17:45:00	251	0	0	0	251	31	0	0	3	31	14	307	0	0	321	158	0	4	158	761	
Grand Total	1044	0	0	0	1044	140	0	0	17	140	57	1270	0	0	1327	567	0	30	567	3078	
Approach%	100%	0%	0%		-	100%	0%	0%		-	4.3%	95.7%	0%		-	100%	0%		-	-	
Totals %	33.9%	0%	0%		33.9%	4.5%	0%	0%		4.5%	1.9%	41.3%	0%		43.1%	18.4%	0%		18.4%	-	
PHF	0.88	0	0		0.88	0.88	0	0		0.88	0.79	0.91	0		0.9	0.9	0		0.9	-	
Heavy	25	0	0		25	1	0	0		1	2	41	0		43	8	0		8	-	
Heavy %	2.4%	0%	0%		2.4%	0.7%	0%	0%		0.7%	3.5%	3.2%	0%		3.2%	1.4%	0%		1.4%	-	
Lights	1019	0	0		1019	139	0	0		139	55	1229	0		1284	559	0		559	-	
Lights %	97.6%	0%	0%		97.6%	99.3%	0%	0%		99.3%	96.5%	96.8%	0%		96.8%	98.6%	0%		98.6%	-	
Single-Unit Trucks	7	0	0		7	1	0	0		1	2	21	0		23	5	0		5	-	
Single-Unit Trucks %	0.7%	0%	0%		0.7%	0.7%	0%	0%		0.7%	3.5%	1.7%	0%		1.7%	0.9%	0%		0.9%	-	
Buses	18	0	0		18	0	0	0		0	0	19	0		19	3	0		3	-	
Buses %	1.7%	0%	0%		1.7%	0%	0%	0%		0%	0%	1.5%	0%		1.4%	0.5%	0%		0.5%	-	
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	0	0		0	-	
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	0%	0%		0%	-	
Pedestrians	-	-	-	0	-	-	-	14		-	-	-	0		-	-	-	19	-	-	
Pedestrians%	-	-	-	0%	-	-	-	29.8%		-	-	-	0%		-	-	-	40.4%	-	-	
Bicycles on Crosswalk	-	-	-	0	-	-	-	3		-	-	-	0		-	-	-	11	-	-	
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	6.4%		-	-	-	0%		-	-	-	23.4%	-	-	
Bicycles on Road	1	0	0	0	-	0	0	0	0	-	0	3	0	0	-	0	0	0	-	-	
Bicycles on Road%	-	-	-	0%	-	-	-	0%		-	-	-	0%		-	-	-	0%	-	-	

Peak Hour: 08:15 AM - 09:15 AM Weather: Broken Clouds (18.39 °C)

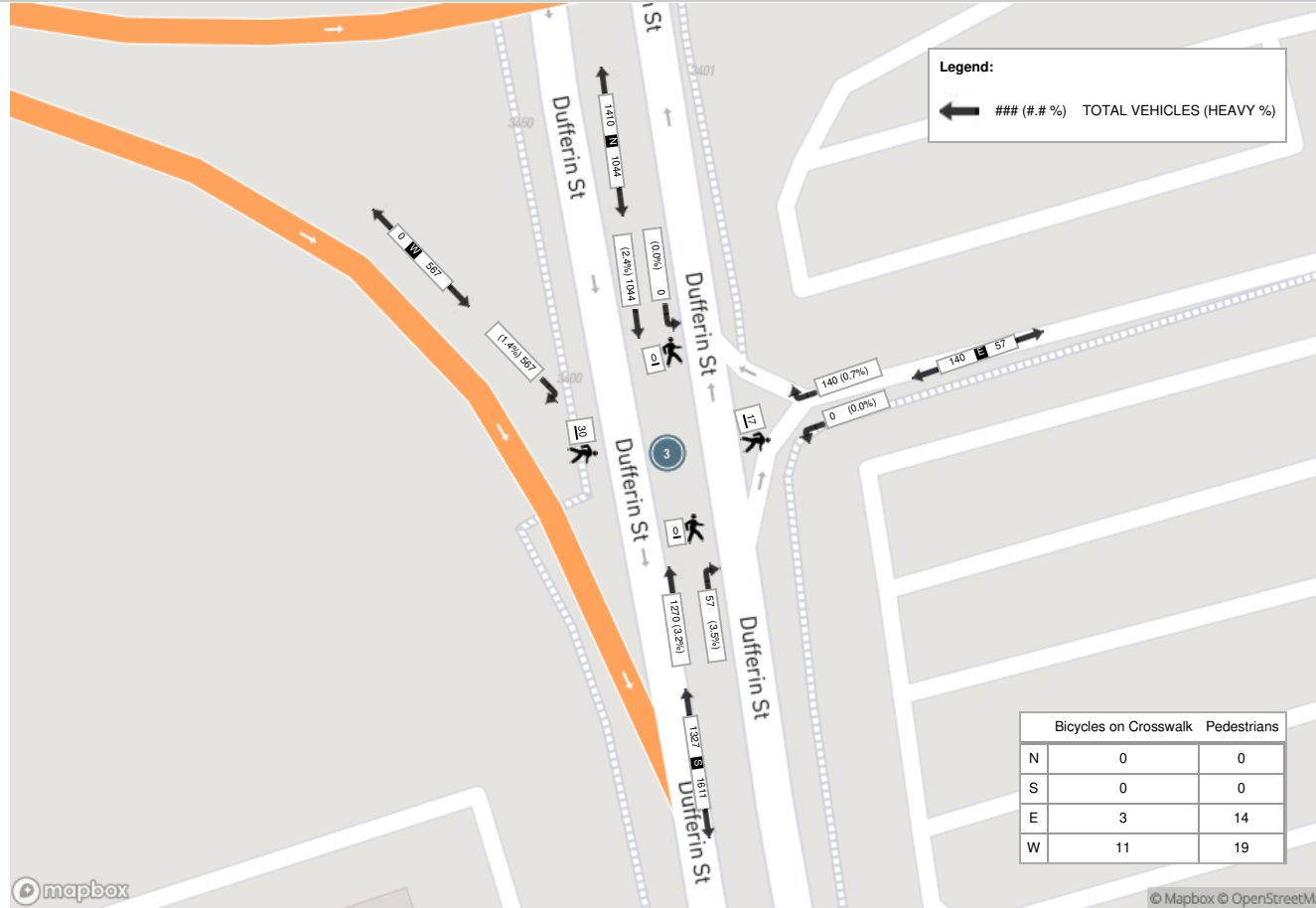


	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	0
E	5	6
W	0	4

mapbox

© Mapbox © OpenStreetMap

Peak Hour: 05:00 PM - 06:00 PM Weather: Clear Sky (29.17 °C)

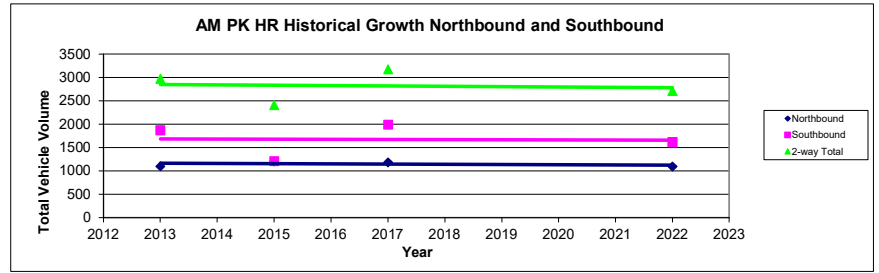


Appendix F
Corridor Growth Calculations

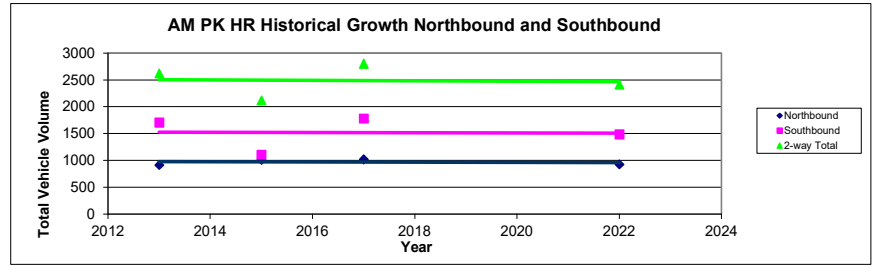


Project: 3309 Dufferin Street
Project ID: 7322-04
Intersection: Dufferin/Bentworth/Ranee
Peak Hour: AM

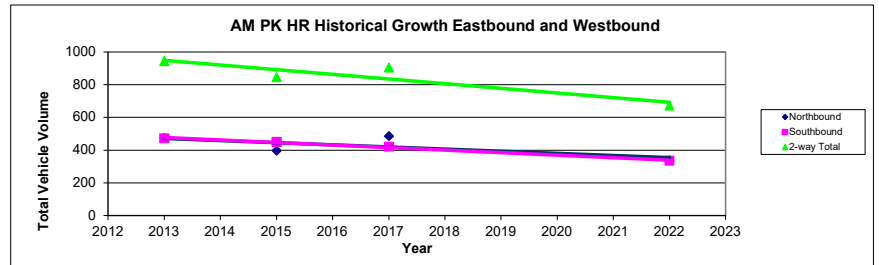
Count Information		North of Dufferin/Bentworth/Ranee		
Date	Year	Northbound	Southbound	2-way
	2013	1102	1871	2973
	2015	1201	1210	2411
	2017	1186	1991	3177
	2022	1097	1617	2714
Trend Point		1161.46	1684.55	2846.01
Slope		-3.99	-3.28	-7.27
Growth		-0.34%	-0.19%	-0.26%



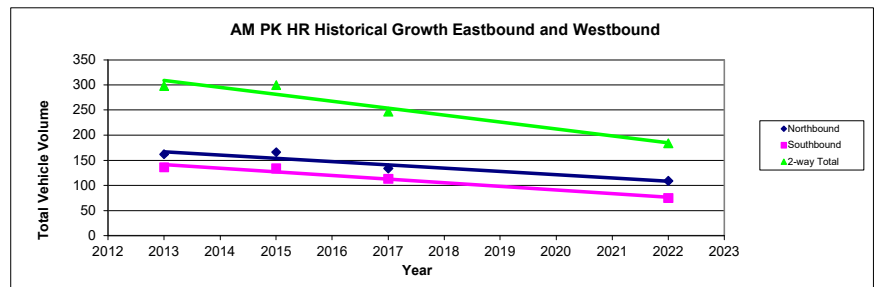
Count Information		South of Dufferin/Bentworth/Ranee		
Date	Year	Northbound	Southbound	2-way
	2013	914	1706	2620
	2015	1012	1107	2119
	2017	1020	1781	2801
	2022	928	1483	2411
Trend Point		974.49	1527.94	2502.44
Slope		-1.60	-2.32	-3.92
Growth		-0.16%	-0.15%	-0.16%



Count Information		East of Dufferin/Bentworth/Ranee		
Date	Year	Eastbound	Westbound	2-way
	2013	474	471	945
	2015	396	450	846
	2017	485	420	905
	2022	336	335	671
Trend Point		471.79	476.82	948.61
Slope		-13.08	-15.42	-28.50
Growth		-2.77%	-3.23%	-3.00%

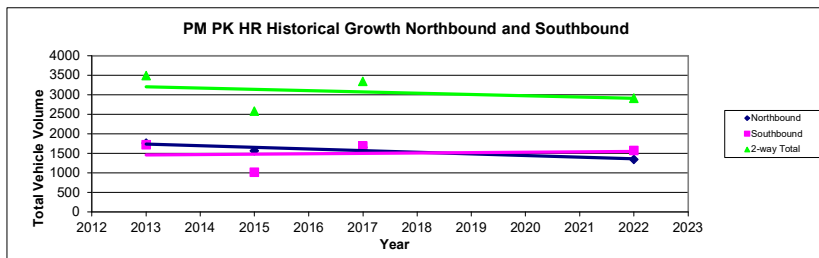


Count Information		West of Dufferin/Bentworth/Ranee		
Date	Year	Eastbound	Westbound	2-way
	2013	162	136	298
	2015	166	134	300
	2017	134	113	247
	2022	109	75	184
Trend Point		167.24	141.53	308.77
Slope		-6.53	-7.21	-13.74
Growth		-3.90%	-5.09%	-4.45%

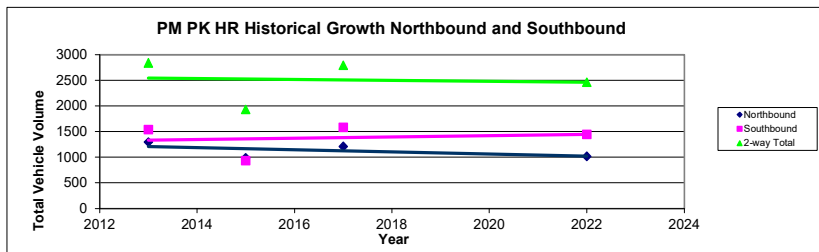


Project: 3309 Dufferin Street
Project ID: 7322-04
Intersection: Dufferin/Bentworth/Ranee
Peak Hour: PM

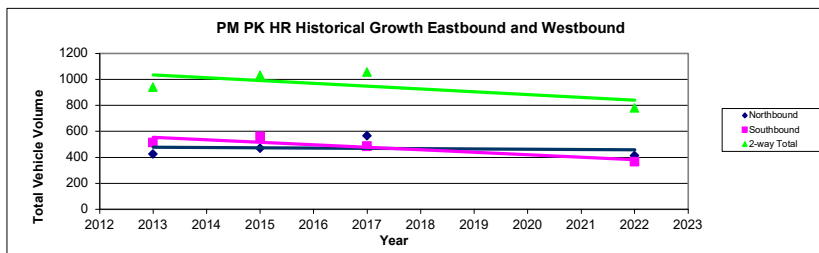
Count Information		North of Dufferin/Bentworth/Ranee		
Date	Year	Northbound	Southbound	2-way
	2013	1766	1720	3486
	2015	1563	1015	2578
	2017	1654	1689	3343
	2022	1343	1570	2913
Trend Point		1740.17	1461.75	3201.93
Slope		-42.31	9.80	-32.51
Growth		-2.43%	0.67%	-1.02%



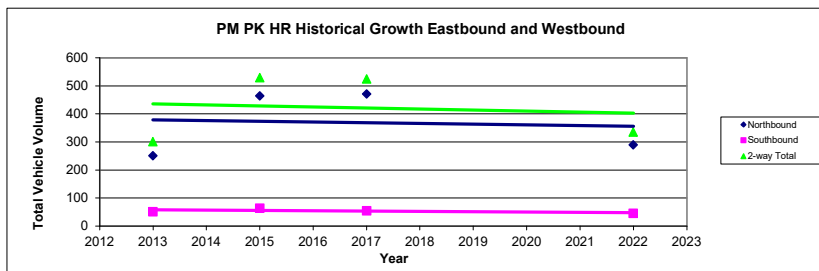
Count Information		South of Dufferin/Bentworth/Ranee		
Date	Year	Northbound	Southbound	2-way
	2013	1299	1543	2842
	2015	994	938	1932
	2017	1213	1584	2797
	2022	1021	1447	2468
Trend Point		1211.13	1330.65	2541.78
Slope		-21.17	12.63	-8.54
Growth		-1.75%	0.95%	-0.34%



Count Information		East of Dufferin/Bentworth/Ranee		
Date	Year	Eastbound	Westbound	2-way
	2013	426	515	941
	2015	471	562	1033
	2017	569	488	1057
	2022	414	368	782
Trend Point		478.88	555.38	1034.26
Slope		-2.37	-19.23	-21.60
Growth		-0.49%	-3.46%	-2.09%



Count Information		West of Dufferin/Bentworth/Ranee		
Date	Year	Eastbound	Westbound	2-way
	2013	251	50	301
	2015	465	64	529
	2017	471	54	525
	2022	290	45	335
Trend Point		378.87	57.42	436.28
Slope		-2.56	-1.11	-3.68
Growth		-0.68%	-1.94%	-0.84%



Appendix G
Transportation Tomorrow Survey (TTS) Data



3300 Dufferin St

6430-23

Residential Vehicular Site Traffic Distribution (AM Peak Hour)

Outbound

BA Group - EFS

2022-08-10

Wed Sep 16 2020 12:28:30 GMT-0400 (Eastern Daylight Time) - Run Time: 2779ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Start time of trip - start_time In 600-859

and

Trip purpose of origin - purp_orig In H,

and

Primary travel mode of trip - mode_prime In d,m,p,t,u

and

2006 GTA zone of origin - gta06_orig In 157,158,178,179,180

Trip 2016

Table:

	157	158	178	179	Total
PD 1 of Toronto	0	73	168	0	241
PD 2 of Toronto	0	46	0	13	59
PD 3 of Toronto	16	456	282	126	880
137	0	0	10	0	10
139	0	0	7	0	7
146	0	9	0	0	9
151	0	59	0	0	59
152	0	33	0	0	33
154	0	0	0	35	35
155	0	25	0	0	25
156	0	14	0	0	14
158	0	168	93	60	321
159	16	0	48	0	64
161	0	53	0	0	53
164	0	0	19	0	19
165	0	0	0	18	18
174	0	0	31	0	31
176	0	0	14	0	14
178	0	58	61	13	132
179	0	37	0	0	37
PD 4 of Toronto	0	81	265	105	451
PD 5 of Toronto	0	53	16	0	69
PD 6 of Toronto	0	0	18	0	18
PD 7 of Toronto	0	9	0	0	9
PD 8 of Toronto	0	151	23	122	296
PD 9 of Toronto	0	88	14	0	102
PD 10 of Toronto	0	83	23	22	128
PD 11 of Toronto	0	200	19	0	219
PD 12 of Toronto	0	11	0	0	11
PD 13 of Toronto	0	25	11	0	36
PD 16 of Toronto	0	74	53	14	141
Pickering	0	11	0	0	11
Oshawa	0	19	0	0	19
Markham	0	60	0	49	109
Vaughan	35	89	109	49	282
Caledon	0	0	23	23	46
Brampton	0	0	25	0	25
Mississauga	0	32	15	31	78
Waterloo	0	0	10	0	10
Kitchener	0	0	26	0	26

3300 Dufferin St

7659-03

Residential Vehicular Site Traffic Distribution (PM Peak Hour)

Inbound

BA Group - EFS

2022-08-10

Wed Sep 16 2020 14:36:50 GMT-0400 (Eastern Daylight Time) - Run Time: 2503ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In H,

and

Primary travel mode of trip - mode_prime In d,m,p,t,u

and

2006 GTA zone of destination - gta06_dest In 155,157,158,178,179,180

Trip 2016

Table:

	155	157	158	178	179	Total
PD 1 of Toronto	14	0	81	92	0	187
PD 2 of Toronto	0	0	57	22	0	79
PD 3 of Toronto	181	23	365	335	81	985
137	0	0	0	10	0	10
141	0	0	0	11	0	11
144	0	0	53	0	0	53
146	0	0	9	0	0	9
151	0	0	25	0	0	25
152	0	0	53	0	0	53
154	78	0	0	0	0	78
155	29	0	25	0	0	54
156	41	0	13	31	0	85
157	0	23	81	19	70	193
158	9	0	48	125	0	182
160	11	0	0	76	0	87
176	0	0	0	7	0	7
178	13	0	59	56	0	128
179	0	0	0	0	11	11
PD 4 of Toronto	20	32	12	98	26	188
PD 5 of Toronto	23	0	35	0	26	84
PD 6 of Toronto	0	0	0	25	0	25
PD 8 of Toronto	0	0	172	23	52	247
PD 9 of Toronto	44	0	65	14	0	123
PD 10 of Toronto	121	0	69	60	72	322
PD 11 of Toronto	29	0	96	0	0	125
PD 12 of Toronto	0	0	33	0	0	33
PD 13 of Toronto	0	0	25	0	0	25
PD 16 of Toronto	19	0	74	10	14	117
Oshawa	0	0	19	0	0	19
Richmond Hill	20	0	0	0	0	20
Vaughan	100	18	23	66	49	256
Caledon	0	0	0	23	23	46
Brampton	29	0	0	0	0	29
Mississauga	0	0	11	33	18	62
Oakville	0	24	0	0	0	24
Burlington	0	0	0	40	0	40
Barrie	0	0	0	22	0	22

3300 Dufferin St

7659-03

Residential Vehicular Site Traffic Distribution (AM Peak Hour)

Outbound

BA Group - EFS

2022-08-10

Traffic Volume Allocation											
Zone	Trips	%	NORTH Dufferin St	SOUTH Dufferin St	EAST Hwy 401	WEST Hwy 401	EAST Rane Ave	WEST Lawrence Ave	EAST Lawrence Ave	SOUTH Allen Rd	TOTAL
PD 1 of Toronto	241	7%		50%			50%				100%
PD 2 of Toronto	59	2%		40%				60%			100%
137	10	0%				50%		50%			100%
139	7	0%		40%		20%		40%			100%
146	9	0%		50%				50%			100%
151	59	2%		50%				50%			100%
152	33	1%		50%				50%			100%
154	35	1%				80%		20%			100%
155	25	1%				80%		20%			100%
156	14	0%		50%				50%			100%
158	321	10%		50%				50%			100%
159	64	2%		50%				50%			100%
161	53	2%		100%							100%
164	19	1%		100%							100%
165	18	1%		100%							100%
174	31	1%		80%					20%		100%
176	14	0%		100%							100%
178	132	4%		70%					30%		100%
179	37	1%		100%							100%
PD 4 of Toronto	451	14%					60%		40%		100%
PD 5 of Toronto	69	2%			80%				20%		100%
PD 6 of Toronto	18	1%			100%						100%
PD 7 of Toronto	9	0%		40%		60%					100%
PD 8 of Toronto	296	9%				70%		30%			100%
PD 9 of Toronto	102	3%				70%		30%			100%
PD 10 of Toronto	128	4%	60%			40%					100%
PD 11 of Toronto	219	7%			80%				20%		100%
PD 12 of Toronto	11	0%			100%						100%
PD 13 of Toronto	36	1%			100%						100%
PD 16 of Toronto	141	4%			100%						100%
Pickering	11	0%			100%						100%
Oshawa	19	1%			100%						100%
Markham	109	3%			80%	20%					100%
Vaughan	282	9%			100%						100%
Caledon	46	1%			100%						100%
Brampton	25	1%			100%						100%
Mississauga	78	2%			100%						100%
Waterloo	10	0%			100%						100%
Kitchener	26	1%			100%						100%
TOTAL TRIPS	3267	100%									

Assumed Split

Route Split Totals									TOTAL
NORTH Dufferin St	SOUTH Dufferin St	EAST Hwy 401	WEST Hwy 401	EAST Rane Ave	WEST Lawrence Ave	EAST Lawrence Ave	SOUTH Allen Rd	TOTAL	
0.00%	3.69%	0.00%	0.00%	3.69%	0.00%	0.00%	0.00%	7.4%	
0.00%	0.72%	0.00%	0.00%	0.00%	1.08%	0.00%	0.00%	1.8%	
0.00%	0.00%	0.00%	0.15%	0.00%	0.15%	0.00%	0.00%	0.3%	
0.00%	0.09%	0.00%	0.04%	0.00%	0.09%	0.00%	0.00%	0.2%	
0.00%	0.14%	0.00%	0.00%	0.00%	0.14%	0.00%	0.00%	0.3%	
0.00%	0.90%	0.00%	0.00%	0.00%	0.90%	0.00%	0.00%	1.8%	
0.00%	0.51%	0.00%	0.00%	0.00%	0.51%	0.00%	0.00%	1.0%	
0.00%	0.00%	0.00%	0.86%	0.00%	0.21%	0.00%	0.00%	1.1%	
0.00%	0.00%	0.00%	0.61%	0.00%	0.15%	0.00%	0.00%	0.8%	
0.00%	0.21%	0.00%	0.00%	0.00%	0.21%	0.00%	0.00%	0.4%	
0.00%	4.91%	0.00%	0.00%	0.00%	4.91%	0.00%	0.00%	9.8%	
0.00%	0.98%	0.00%	0.00%	0.00%	0.98%	0.00%	0.00%	2.0%	
0.00%	1.62%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.6%	
0.00%	0.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.6%	
0.00%	0.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.6%	
0.00%	0.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.19%	0.9%	
0.00%	0.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.4%	
0.00%	2.83%	0.00%	0.00%	0.00%	0.00%	1.21%	0.00%	4.0%	
0.00%	1.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.1%	
0.00%	0.00%	0.00%	0.00%	8.28%	0.00%	5.52%	0.00%	13.8%	
0.00%	0.00%	1.69%	0.00%	0.00%	0.00%	0.42%	0.00%	2.1%	
0.00%	0.00%	0.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.6%	
0.00%	0.11%	0.00%	0.17%	0.00%	0.00%	0.00%	0.00%	0.3%	
0.00%	0.00%	0.00%	6.34%	0.00%	2.72%	0.00%	0.00%	9.1%	
0.00%	0.00%	0.00%	2.19%	0.00%	0.94%	0.00%	0.00%	3.1%	
2.35%	0.00%	0.00%	1.57%	0.00%	0.00%	0.00%	0.00%	3.9%	
0.00%	0.00%	5.36%	0.00%	0.00%	0.00%	1.34%	0.00%	6.7%	
0.00%	0.00%	0.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.3%	
0.00%	0.00%	1.10%	0.00%	0.00%	0.00%	0.00%	0.00%	1.1%	
0.00%	0.00%	4.32%	0.00%	0.00%	0.00%	0.00%	0.00%	4.3%	
0.00%	0.00%	0.34%	0.00%	0.00%	0.00%	0.00%	0.00%	0.3%	
0.00%	0.00%	0.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.6%	
0.00%	0.00%	2.67%	0.67%	0.00%	0.00%	0.00%	0.00%	3.3%	
0.00%	0.00%	0.00%	8.63%	0.00%	0.00%	0.00%	0.00%	8.6%	
0.00%	0.00%	0.00%	1.41%	0.00%	0.00%	0.00%	0.00%	1.4%	
0.00%	0.00%	0.00%	0.77%	0.00%	0.00%	0.00%	0.00%	0.8%	
0.00%	0.00%	0.00%	2.39%	0.00%	0.00%	0.00%	0.00%	2.4%	
0.00%	0.00%	0.00%	0.31%	0.00%	0.00%	0.00%	0.00%	0.3%	
0.00%	0.00%	0.00%	0.80%	0.00%	0.00%	0.00%	0.00%	0.8%	
2.4%	20.2%	16.9%	26.9%	12.0%	13.0%	8.5%	0.2%	100.0%	

5%	20%	15%	25%	10%	15%	10%	0%	100%
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3300 Dufferin St

7659-03

Residential Vehicular Site Traffic Distribution (PM Peak Hour)

Inbound

BA Group - EFS

2022-08-10

Traffic Volume Allocation											
Zone	Trips	%	NORTH Dufferin St	SOUTH Dufferin St	EAST Hwy 401	WEST Hwy 401	EAST Raneae Ave	WEST Lawrence Ave	EAST Lawrence Ave	SOUTH Allen Rd	TOTAL
PD 1 of Toronto	187	6.1%		50%						50%	100%
PD 2 of Toronto	79	2.6%		20%				80%			100%
137	10	0.3%				50%		50%			100%
141	11	0.4%		30%				70%			100%
144	53	1.7%		50%				50%			100%
146	9	0.3%		60%				40%			100%
151	25	0.8%		50%				50%			100%
152	53	1.7%		50%				50%			100%
154	78	2.5%				50%		50%			100%
155	54	1.8%				50%		50%			100%
156	85	2.8%		50%				50%			100%
157	193	6.3%		50%				50%			100%
158	182	5.9%		60%				40%			100%
160	87	2.8%		70%				30%			100%
176	7	0.2%		60%					40%		100%
178	128	4.2%		80%				20%			100%
179	11	0.4%		50%			50%				100%
PD 4 of Toronto	188	6.1%						70%	30%		100%
PD 5 of Toronto	84	2.7%			100%						100%
PD 6 of Toronto	25	0.8%			100%						100%
PD 8 of Toronto	247	8.1%				100%					100%
PD 9 of Toronto	123	4.0%				100%					100%
PD 10 of Toronto	322	10.5%				100%					100%
PD 11 of Toronto	125	4.1%			100%						100%
PD 12 of Toronto	33	1.1%			100%						100%
PD 13 of Toronto	25	0.8%			100%						100%
PD 16 of Toronto	117	3.8%			100%						100%
Oshawa	19	0.6%			100%						100%
Richmond Hill	20	0.7%			40%	60%					100%
Vaughan	256	8.4%				100%					100%
Caledon	46	1.5%				100%					100%
Brampton	29	0.9%				100%					100%
Mississauga	62	2.0%				100%					100%
Oakville	24	0.8%				100%					100%
Burlington	40	1.3%				100%					100%
Barrie	22	0.7%				100%					100%
TOTAL TRIPS	3059	100%									100%

Assumed Split

FROM THE

Route Split Totals									
NORTH Dufferin St	SOUTH Dufferin St	EAST Hwy 401	WEST Hwy 401	EAST Raneae Ave	WEST Lawrence Ave	EAST Lawrence Ave	SOUTH Allen Rd	TOTAL	
0.00%	3.06%	0.00%	0.00%	0.00%	0.00%	0.00%	3.06%	6.1%	
0.00%	0.52%	0.00%	0.00%	0.00%	2.07%	0.00%	0.00%	2.6%	
0.00%	0.00%	0.00%	0.16%	0.00%	0.16%	0.00%	0.00%	0.3%	
0.00%	0.11%	0.00%	0.00%	0.00%	0.25%	0.00%	0.00%	0.4%	
0.00%	0.87%	0.00%	0.00%	0.00%	0.87%	0.00%	0.00%	1.7%	
0.00%	0.18%	0.00%	0.00%	0.00%	0.12%	0.00%	0.00%	0.3%	
0.00%	0.41%	0.00%	0.00%	0.00%	0.41%	0.00%	0.00%	0.8%	
0.00%	0.87%	0.00%	0.00%	0.00%	0.87%	0.00%	0.00%	1.7%	
0.00%	0.00%	0.00%	1.27%	0.00%	1.27%	0.00%	0.00%	2.5%	
0.00%	0.00%	0.00%	0.88%	0.00%	0.88%	0.00%	0.00%	1.8%	
0.00%	1.39%	0.00%	0.00%	0.00%	1.39%	0.00%	0.00%	2.8%	
0.00%	3.15%	0.00%	0.00%	0.00%	3.15%	0.00%	0.00%	6.3%	
0.00%	3.57%	0.00%	0.00%	0.00%	2.38%	0.00%	0.00%	5.9%	
0.00%	1.99%	0.00%	0.00%	0.00%	0.85%	0.00%	0.00%	2.8%	
0.00%	0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.09%	0.2%	
0.00%	3.35%	0.00%	0.00%	0.00%	0.84%	0.00%	0.00%	4.2%	
0.00%	0.18%	0.00%	0.00%	0.18%	0.00%	0.00%	0.00%	0.4%	
0.00%	0.00%	0.00%	0.00%	0.00%	4.30%	1.84%	0.00%	6.1%	
0.00%	0.00%	2.75%	0.00%	0.00%	0.00%	0.00%	0.00%	2.7%	
0.00%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.8%	
0.00%	0.00%	0.00%	8.07%	0.00%	0.00%	0.00%	0.00%	8.1%	
0.00%	0.00%	0.00%	4.02%	0.00%	0.00%	0.00%	0.00%	4.0%	
0.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	10.5%	
0.00%	0.00%	4.09%	0.00%	0.00%	0.00%	0.00%	0.00%	4.1%	
0.00%	0.00%	1.08%	0.00%	0.00%	0.00%	0.00%	0.00%	1.1%	
0.00%	0.00%	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.8%	
0.00%	0.00%	3.82%	0.00%	0.00%	0.00%	0.00%	0.00%	3.8%	
0.00%	0.00%	0.62%	0.00%	0.00%	0.00%	0.00%	0.00%	0.6%	
0.00%	0.00%	0.26%	0.39%	0.00%	0.00%	0.00%	0.00%	0.7%	
0.00%	0.00%	0.00%	8.37%	0.00%	0.00%	0.00%	0.00%	8.4%	
0.00%	0.00%	0.00%	1.50%	0.00%	0.00%	0.00%	0.00%	1.5%	
0.00%	0.00%	0.00%	0.95%	0.00%	0.00%	0.00%	0.00%	0.9%	
0.00%	0.00%	0.00%	2.03%	0.00%	0.00%	0.00%	0.00%	2.0%	
0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	0.00%	0.00%	0.8%	
0.00%	0.00%	0.00%	1.31%	0.00%	0.00%	0.00%	0.00%	1.3%	
0.00%	0.00%	0.00%	0.72%	0.00%	0.00%	0.00%	0.00%	0.7%	
0.0%	19.8%	14.3%	41.0%	0.2%	14.7%	5.1%	5.0%	100.0%	

0%	20%	15%	40%	0%	15%	5%	5%	100%
----	-----	-----	-----	----	-----	----	----	------



3300 Dufferin St

7659-03

Mode Split Trend Over Time

BA Group - EFS

2022-08-10

Residential (AM Peak Period)

Wed Sep 16 2020 11:52:01 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of origin - gta06_orig In 157,158,178,179,180

and

Start time of trip - start_time In 600-859

and

Trip purpose of origin - purp_orig In H,

Table: Trip 2016

Row:	Count:	Expanded:	
Transit excluding GO rail	105	2284	38%
Auto driver	122	2579	43%
Motorcycle	1	18	0%
Auto passenger	38	668	11%
School bus	5	103	2%
Walk	20	359	6%
Total:	291	6011	100%

Driver	43%
Passenger	13%
Transit	38%
Walk	6%
Cycle	0%
Total	100%

Retail Trips (AM Two-way)

Wed Sep 16 2020 12:07:36 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of origin - gta06_orig In 157,158,178,179,180

and

Start time of trip - start_time In 600-1059

and

Trip purpose of origin - purp_orig In M,

or

(2006 GTA zone of destination - gta06_dest In 157,158,178,179,180

and

Start time of trip - start_time In 600-1059

and

Trip purpose of destination - purp_dest In M,)

Table: Trip 2016

Row:	Count:	Expanded:	
Transit excluding GO rail	23	499	12%
Auto driver	157	2557	63%
Auto passenger	54	882	22%
Walk	6	115	3%
Total:	240	4052	100%

Driver	63%
Passenger	22%
Transit	12%
Walk	3%
Cycle	0%
Total	100%

Residential (PM Peak Period)

Wed Sep 16 2020 14:16:16 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of destination - gta06_dest In 157,158,178,179,180

and

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In H

Table: Trip 2016

Row:	Count:	Expanded:	
Transit excluding GO rail	96	2145	41%
Auto driver	102	2073	39%
Motorcycle	1	18	0%
Auto passenger	23	348	7%
School bus	6	155	3%
Paid rideshare	1	19	0%
Walk	23	498	9%
Total:	252	5256	100%

Driver	40%
Passenger	10%
Transit	41%
Walk	9%
Cycle	0%
Total	100%

Retail Trips (PM Two-way)

Wed Sep 16 2020 12:06:05 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of origin - gta06_orig In 157,158,178,179,180

and

Start time of trip - start_time In 1500-1759

and

Trip purpose of origin - purp_orig In M,

or

(2006 GTA zone of destination - gta06_dest In 157,158,178,179,180

and

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In M,)

Table: Trip 2016

Row:	Count:	Expanded:	
Transit excluding GO rail	68	1666	22%
Cycle	2	44	1%
Auto driver	244	4667	61%
Auto passenger	61	1024	13%
Taxi passenger	3	74	1%
Paid rideshare	2	38	1%
Walk	5	84	1%
Total:	385	7597	100%

Driver	61%
Passenger	15%
Transit	22%
Walk	1%
Cycle	1%
Total	100%

Tue Aug 02 2022 13:23:50 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

158,178,179,180 415,422,423

2006 GTA zone of destination - gta06_dest In 157

and

Start time of trip - start_time In 1500-1759

and

Trip purpose of destination - purp_dest In H

Table: Trip Count:

Row:	Count:	Expanded:	
Transit excluding GO rail	143	3560	41%
Auto driver	162	3565	41%
Motorcycle	1	18	0%
Auto passenger	36	725	8%
School bus	8	189	2%
Paid rideshare	2	57	1%
Walk	26	586	7%
Total:	378	8701	100%

Driver	41%
Passenger	11%
Transit	41%
Walk	7%
Cycle	0%
Total	100%

Tue Aug 02 2022 14:11:37 GMT-0400 (Eastern Daylight Time)

Frequency Distribution Query Form - Trip - 2016 v1.1

Field: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of origin - gta06_orig In 157,158,178,179,180,415,422,423

and

Start time of trip - start_time In 600-859

and

Trip purpose of origin - purp_orig In H,

Table: Trip 2016

Row:	Count:	Expanded:	
Transit excluding GO rail	141	3439	36%
Auto driver	182	4328	45%
Motorcycle	1	18	0%
Auto passenger	50	1074	11%
School bus	9	187	2%
Paid rideshare	1	39	0%
Walk	25	480	5%
Total:	409	9565	100%

Driver	45%
Passenger	14%
Transit	36%
Walk	5%
Cycle	0%
Total	100%

Appendix H Existing Signal Timing Plans



LOCATION:	Dufferin St & Bridgeland Ave / Yorkdale Rd (MTO Signal)	ATO / DISTRICT / WARD:	Area 2 / North York / Ward 8
TCS:	616	COMPUTER SYSTEM:	TransSuite
MODE/COMMENT:	SA2 with 2-Wire Polara APS	CONTROLLER/CABINET TYPE:	Econolite Cobalt /TS2T1
PREPARED BY / DATE:	Tazeen Fatema / November 27, 2020	CONFLICT FLASH:	Red & Red
CHECKED BY / DATE:	Ihtesham Ahmad / November 27, 2020	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing @1.2 ms)
IMPLEMENTATION DATE:	April 6, 2021	CHANNEL/DROP:	5019/20
		CONTROLLER FIRMWARE:	32.63.10



NEMA Phase	Local Plan Sytem Plan	OFF	AM	PM	NGHT	WKND	ALLEN SB CLR	ALLEN NB CLR	Phase Mode (Fixed/Demanded/Callable)	Remarks
		All Other Times	06:00-09:30 M-F	15:00-19:00 M-F	23:00-06:00 Daily	10:00-20:00 Sat & Sun	TBD	TBD		
		Pattern 1 Plan 1	Pattern 2 Plan 2	Pattern 3 Plan 3	Pattern 4 Plan 4	Pattern 5 Plan 5	Pattern 6 Plan 6	Pattern 7 Plan 7		
1 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Callable/Extendable by setback Wavetronix detection	Pedestrian Minimums: NSWK = 7 seconds, NSFDD = 23 seconds EWWK = 7 seconds, EWFD = 28 seconds EB and WB phases are callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum EWG is 7 seconds. If ongoing vehicle demand exists on the detection zone, the EWG is capable of providing vehicle extensions up to the maximum. If a pedestrian call is received, the pedestrian minimums will be served. The EWWK & EWFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the NSG. Left Turn Passage Time = 2 sec APS is on during 7 secs of NSWK and EWWK when activated by APS pushbuttons and when no arrows are displayed. Extended push activation = 3 sec As per MTO's direction, it was decided to keep the clearances for all left turns at 1 sec to keep the current cycle lengths to maintain coordination with the other control area signals. An all red value of 1 sec does not conform to the City's SOP for left turn clearances.
2 Dufferin Street 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Fixed	
3 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Callable/Extendable by setback Wavetronix detection	
4 Bridgeland Avenue 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Callable by Wavetronix detector and/or Pushbutton; Extendable by Wavetronix detector	
5 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Callable/Extendable by setback Wavetronix detection	
6 Dufferin Street 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Fixed	
7 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Callable/Extendable by setback Wavetronix detection	
8 Yorkdale Road 	WLK FDW MIN MAX 1 AMB ALR SPLIT								Callable by Wavetronix detector and/or Pushbutton; Extendable by Wavetronix detector	
	CL OF	96 7	100 80	100 80	86 78	96 23	110 9	100 81		

Notes:

LOCATION:	Dufferin St & Yorkdale Mall / Plaza Pontiac Access	DISTRICT:	North York
MODE/COMMENT:	SA2-VMG with PR & TSP	COMPUTER SYSTEM:	TransSuite
TCS:	1137	CONTROLLER/CABINET TYPE:	Peek ATC-1000 / TS2T1
PREPARED/CHECKED BY:	Parsons / BA / DS	CONFLICT FLASH:	Red & Red
PREPARATION DATE:	March 30, 2017	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing at 1.2 m/s)
IMPLEMENTATION DATE:	June 20, 2017	CHANNEL/DROP:	4057/11
		CONTROLLER/FIRMWARE:	3.018.1.2976



NEMA Phase	Local Plan Split Table	OFF	AM	PM	NGHT	WKND	ALLEN CLR	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times	06:00-09:30 M-F	15:00-19:00 M-F	23:00-06:00 Daily	09:00-19:00 Sat/Sun	TBD		
		Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 16		
1	NOT USED								Pedestrian Minimums: NSWK = 7 sec, NSFD = 16 sec EWWK = 7 sec, EWFD = 25 sec
2	Dufferin St 							Fixed POZ activated by Request Loop (Max extension of 30 secs in Green/WLK)	EW phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum EWG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the EWG is capable of providing vehicle extensions up to the maximum green split. If a pedestrian call is received, the pedestrian minimum will be served. The EWWK & EWFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the NSG.
3	NOT USED								Side Street Passage Time = 3 sec See back for TSP instructions. NB and SB TSP enabled on Feb 23, 2016 Script #4 is used for TSP operation at this location in conjunction with firmware version 3.018.1.2976 (T = 340)
4	Private Access 							Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop. (Truncations allowed to pedestrian minimum)	
5	NOT USED								
6	Dufferin St 							Fixed POZ activated by Request Loop (Max extension of 30 secs in Green/WLK)	
7	NOT USED								
8	Yorkdale Mall 							Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop. (Truncations allowed to pedestrian minimum)	
	CL	96	100	100	86	96	110		
	OF	93	74	73	14	12	104		

Notes: Southbound left-turn prohibited. Northbound right-turn prohibited.
East leg is one-way westbound only.

LOC: Dufferin St & Yorkdale Mall / Plaza Pontiac Access
 MODE: SA2-VMG with PR & TSP
 TCS: 1137 PREPARATION DATE (TIMING CARD): March 30, 2017

OFFSET CORRECTION PARAMETERS

2.3.4 O.C. Extend / Reduce		(Max. time added & subtracted in sec.)								From page 1		2.3.2.x
		Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8	(Cycle)	(Slop)	O.C.
OFF												
Split 1	Ext.	--	36	--	--	--	36	--	--	96	28	24 s [25 %]
	Rdc.	--	27	--	1	--	27	--	1			
AM												
Split 2	Ext.	--	38	--	--	--	38	--	--	100	32	25 s [25 %]
	Rdc.	--	29	--	3	--	29	--	3			
PM												
Split 3	Ext.	--	38	--	--	--	38	--	--	100	32	25 s [25 %]
	Rdc.	--	31	--	1	--	31	--	1			
NGT												
Split 4	Ext.	--	32	--	--	--	32	--	--	86	18	22 s [25 %]
	Rdc.	--	17	--	1	--	17	--	1			
WKND												
Split 5	Ext.	--	36	--	--	--	36	--	--	96	28	24 s [25 %]
	Rdc.	--	27	--	1	--	27	--	1			
ALLEN CLR												
Split 16	Ext.	--	41	--	--	--	41	--	--	110	42	28 s [25 %]
	Rdc.	--	39	--	3	--	39	--	3			

T.S.P. PARAMETERS

PREPARED: Parsons / BA / DS

TSP RUN # 2	TSP RUN # 6
NB Thru	SB Thru

2.8.2 Transit Run Parameters

ATC Green Extend Mode (Equivalent TTC Algorithm)	Mode 2	Mode 2
	A	A

2.8.3 Transit Action Plan 1 (Used for all Patterns)

Run Enable (X = Yes)	X	X
Run Config = 1	Recovery = 2 (O.C. with delay)	

2.8.4 Transit Run Configuration 1

Delay / Extend / Fail	-- / -- / 235	-- / -- / 235
CALLS (and Extends)	Ø 2/6	Ø 2/6
Skips	--	--
Reduces (Truncates)	--	--

	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
--	-----	-----	-----	-----	-----	-----	-----	-----

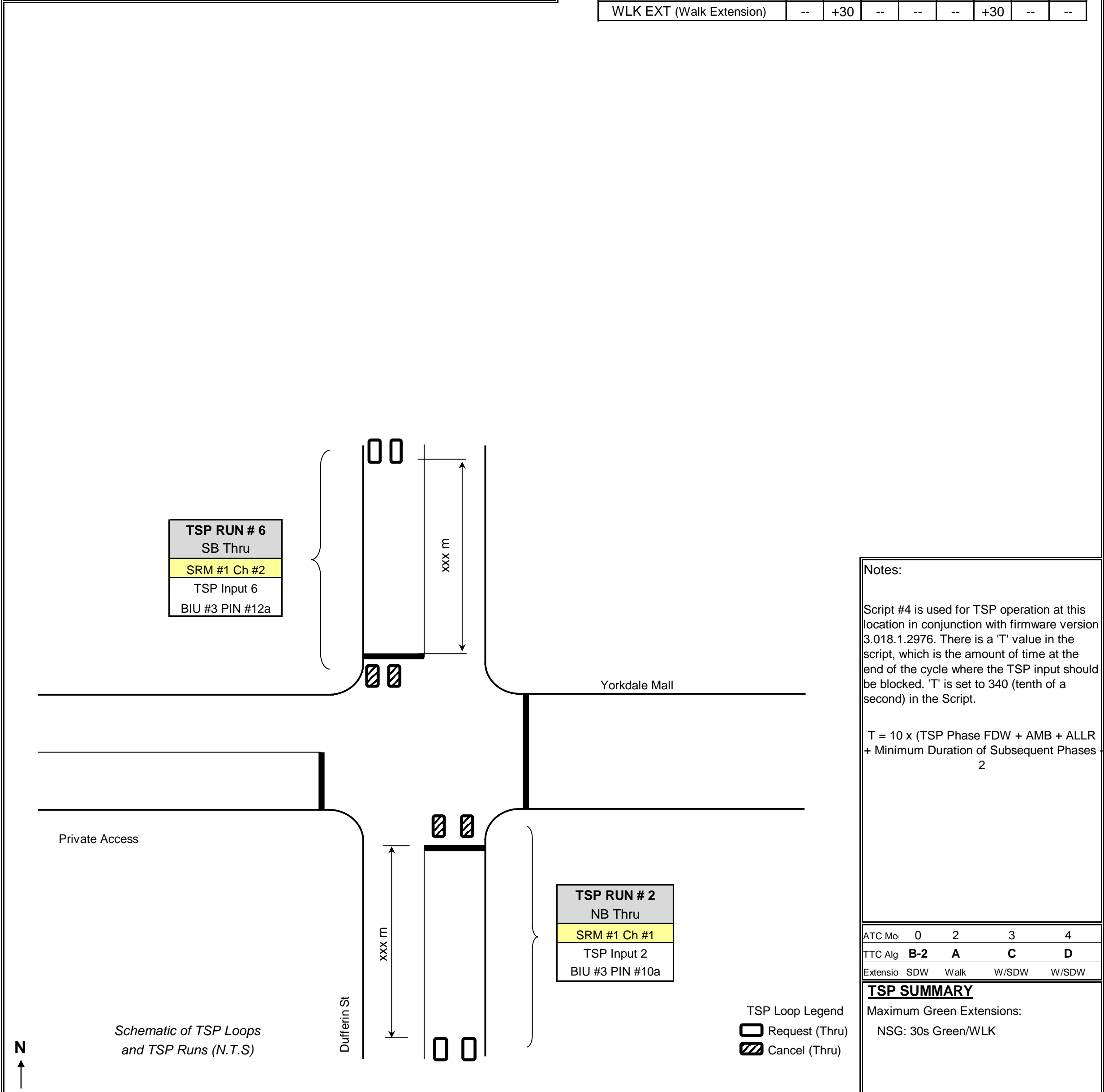
2.8.6 TSP Split Tables: 1, 3, 4 & 5

GRN EXT (SDW Extension)	--	--	--	--	--	--	--	--
GRN RDC (Reduction)	--	--	--	-1	--	--	--	-1
WLK EXT (Walk Extension)	--	+30	--	--	--	+30	--	--

	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 7	Ø 8
--	-----	-----	-----	-----	-----	-----	-----	-----

2.8.6 TSP Split Tables: 2 & 16

GRN EXT (SDW Extension)	--	--	--	--	--	--	--	--
GRN RDC (Reduction)	--	--	--	-3	--	--	--	-3
WLK EXT (Walk Extension)	--	+30	--	--	--	+30	--	--



Notes:
 Script #4 is used for TSP operation at this location in conjunction with firmware version 3.018.1.2976. There is a 'T' value in the script, which is the amount of time at the end of the cycle where the TSP input should be blocked. 'T' is set to 340 (tenth of a second) in the Script.

$$T = 10 \times (\text{TSP Phase FDW} + \text{AMB} + \text{ALLR} + \text{Minimum Duration of Subsequent Phases} - 2)$$

ATC Mo	0	2	3	4
TTC Alg	B-2	A	C	D
Extensio	SDW	Walk	W/SDW	W/SDW

TSP SUMMARY
 Maximum Green Extensions:
 NSG: 30s Green/WLK

Appendix I

Synchro Calibration Studies



Project: 3300 Dufferin Street
 Project No: 7659-03
 Location: Dufferin Street and Raneve Ave - Bentworth Ave
 Date: Thursday, November 4, 2021
 Study Time: 8:00 - 9:00 and 17:00 - 18:00

AM Peak Hour Signal Timing

Cycle #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average
Start Time	8:00	8:02	8:04	8:06	8:08	8:10	8:11	8:13	8:14	8:16	8:18	8:19	8:22	8:24	8:26	8:28	8:30	8:33	8:35	8:37	8:39	8:41	8:43	8:44	8:47	8:49	8:51	8:53	8:55	8:57	8:59	
N-S Phase	N-S Phase																															
SB Left Advance Green	15	18	11	7	0	14	22	15	8	14	9	6	22	18	0	6	22	0	14	11	15	22	8	0	15	9	19	0	18	7	15	12
SB Left Advance Amber	3	3	3	3	0	3	3	3	3	3	3	3	3	3	0	3	3	0	3	3	3	3	3	0	3	3	3	0	3	3	3	3
Green	93	53	93	53	93	42	63	63	63	63	63	93	62	97	87	82	82	93	82	92	70	78	49	93	93	83	83	93	87	80	67	77
Amber	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
All Red	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-adv	-18	-21	-14	-10	0	-17	-25	-18	-11	-17	-12	-9	-25	-21	0	-9	-25	0	-17	-14	-18	-25	-11	0	-18	-12	-22	0	-21	-10	-18	-14
N-S Total	100	60	100	60	100	49	70	70	70	70	70	100	69	104	94	89	89	100	89	99	77	85	56	100	100	90	90	100	94	87	74	84
E-W Phase	E-W Phase																															
Advance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Amber	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
All Red	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-adv	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E-W Total	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Cycle Length	130	90	130	90	130	79	100	100	100	100	100	130	99	134	124	119	119	130	119	129	107	115	86	130	130	120	120	130	124	117	104	114

PM Peak Hour Signal Timing

Cycle #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	Average	
Start Time	17:01	17:03	17:05	17:06	17:08	17:10	17:12	17:14	17:17	17:18	17:20	17:23	17:25	17:26	17:29	17:31	17:33	17:35	17:37	17:39	17:41	17:43	17:45	17:47	17:49	17:51	17:53	17:55	17:57		
N-S Phase	N-S Phase																														
SB Left Advance Green	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	10	11	13	13	13	13	13	13	13	13
SB Left Advance Amber	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Green	80	54	48	68	80	72	69	81	53	80	69	64	50	79	80	96	80	70	74	62	70	50	80	69	80	52	50	80	80	70	
Amber	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
All Red	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-adv	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-13	-14	-16	-16	-16	-16	-16	-16	-16	-16
N-S Total	87	61	55	75	87	79	76	88	60	87	76	71	57	86	87	103	87	77	81	69	77	57	87	76	87	59	57	87	87	77	
E-W Phase	E-W Phase																														
EB Left Advance Green	0	9	9	9	9	9	9	9	6	9	9	9	0	9	6	9	0	0	6	9	9	6	9	9	9	0	9	9	9	7	
EB Left Advance Amber	0	3	3	3	3	3	3	3	3	3	3	3	0	3	3	3	0	3	3	3	3	3	3	3	3	0	3	3	3	2	
Green	37	37	37	37	37	37	37	37	33	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Amber	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
All Red	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
-adv	0	-12	-12	-12	-12	-12	-12	-12	-9	-12	-12	-12	0	-12	-9	-12	0	0	-9	-12	-12	-9	-12	-12	-12	0	-12	-12	-12	-10	
E-W Total	43	43	43	43	43	43	43	43	39	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	
Cycle Length	130	104	98	118	130	122	119	131	99	130	119	114	100	129	130	146	130	120	124	112	120	100	130	119	130	102	100	130	130	120	

Cycle Length Percentile

	AM	PM
Max	134	146
90th Percentile	130	130
70th Percentile	129	130
50th Percentile	119	120
30th Percentile	100	114
10th Percentile	90	100
Min	79	98

Appendix J

Synchro Worksheets



HCM Unsignalized Intersection Capacity Analysis

1: Dufferin Street & Highway 401 EB Off-Ramp/Yorkdale Mall Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↘		↖	↗		↘	
Traffic Volume (veh/h)	0	0	805	0	0	25	0	1020	15	0	1040	0
Future Volume (Veh/h)	0	0	805	0	0	25	0	1020	15	0	1040	0
Sign Control	Yield			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	866	0	0	27	0	1097	16	0	1118	0
Pedestrians				5			5					
Lane Width (m)				3.0			3.4					
Walking Speed (m/s)				1.2			1.2					
Percent Blockage				0			0					
Right turn flare (veh)												
Median type				None			None					
Median storage (veh)												
Upstream signal (m)							92			127		
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	1484	2220	378	2346	2220	371	1118			1102		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1316	2093	378	2226	2093	141	1118			913		
tC, single (s)	7.5	6.5	7.0	7.5	6.5	7.1	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	0	0	100	97	100			100		
cM capacity (veh/h)	107	50	606	0	50	805	632			713		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3			
Volume Total	866	27	366	366	366	16	373	373	373			
Volume Left	0	0	0	0	0	0	0	0	0			
Volume Right	866	27	0	0	0	16	0	0	0			
sSH	606	805	1700	1700	1700	1700	1700	1700	1700			
Volume to Capacity	1.43	0.03	0.22	0.22	0.22	0.01	0.22	0.22	0.22			
Queue Length 95th (m)	323.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Control Delay (s)	221.7	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Lane LOS	F	A										
Approach Delay (s)	221.7	9.6	0.0									
Approach LOS	F	A										
Intersection Summary												
Average Delay			61.6									
Intersection Capacity Utilization			77.1%		ICU Level of Service		D					
Analysis Period (min)			15									

Queues

2: Dufferin Street & Honda Access

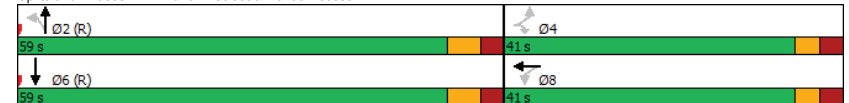
08-10-2022

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT
Lane Configurations	↖	↗	↔	↖	↗	↗
Traffic Volume (vph)	10	10	0	15	1020	1810
Future Volume (vph)	10	10	0	15	1020	1810
Lane Group Flow (vph)	11	11	5	16	1085	1963
Turn Type	Perm	Perm	NA	Perm	NA	NA
Protected Phases			8		2	
Permitted Phases	4	4			2	
Detector Phase	4	4	8	2	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	23.0	23.0	23.0
Minimum Split (s)	38.0	38.0	38.0	30.0	30.0	30.0
Total Split (s)	41.0	41.0	41.0	59.0	59.0	59.0
Total Split (%)	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	C-Min
v/c Ratio	0.06	0.05	0.03	0.13	0.28	0.48
Control Delay	33.1	0.5	0.2	10.3	4.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	0.5	0.2	10.3	4.5	5.3
Queue Length 50th (m)	2.1	0.0	0.0	0.5	14.8	34.7
Queue Length 95th (m)	5.6	0.0	0.0	6.4	53.7	93.2
Internal Link Dist (m)			78.5		44.1	67.7
Turn Bay Length (m)	40.0					
Base Capacity (vph)	472	500	403	122	3938	4073
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	0.02	0.02	0.01	0.13	0.28	0.48

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 74 (74%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Dufferin Street & Honda Access



HCM Signalized Intersection Capacity Analysis
2: Dufferin Street & Honda Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	10	0	0	5	15	1020	0	0	1810	35
Future Volume (vph)	10	0	10	0	0	5	15	1020	0	0	1810	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	5.0 5.0 5.0 5.0 6.0 6.0 6.0											
Lane Util. Factor	1.00 1.00 1.00 1.00 1.00 0.91 0.91											
Frpb, ped/bikes	1.00 0.98 0.96 1.00 1.00 1.00											
Flpb, ped/bikes	0.98 1.00 1.00 1.00 1.00 1.00											
FrT	1.00 0.85 0.86 1.00 1.00 1.00											
FlT Protected	0.95 1.00 1.00 0.95 1.00 1.00											
Satd. Flow (prot)	1653 1312 993 1573 4711 4872											
FlT Permitted	0.75 1.00 1.00 0.09 1.00 1.00											
Satd. Flow (perm)	1313 1312 993 146 4711 4872											
Peak-hour factor, PHF	0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94											
Adj. Flow (vph)	11 0 11 0 0 5 16 1085 0 0 1926 37											
RTOR Reduction (vph)	0 0 10 0 4 0 0 0 0 0 1 0											
Lane Group Flow (vph)	11 0 1 0 1 0 16 1085 0 0 1962 0											
Confl. Peds. (#/hr)	20 5 5 20 10 10 10											
Confl. Bikes (#/hr)	5											
Heavy Vehicles (%)	0% 0% 13% 50% 0% 57% 7% 7% 0% 0% 5% 0%											
Bus Blockages (#/hr)	0 0 0 0 0 0 0 13 0 0 0 0											
Turn Type	Perm Perm NA Perm NA NA											
Protected Phases	8 8 2 2 6											
Permitted Phases	4 4 8 2 6											
Actuated Green, G (s)	9.2 9.2 9.2 77.8 77.8 77.8											
Effective Green, g (s)	10.2 10.2 10.2 78.8 78.8 78.8											
Actuated g/C Ratio	0.10 0.10 0.10 0.79 0.79 0.79											
Clearance Time (s)	6.0 6.0 6.0 7.0 7.0 7.0											
Vehicle Extension (s)	3.0 3.0 3.0 3.0 3.0 3.0											
Lane Grp Cap (vph)	133 133 101 115 3712 3839											
v/s Ratio Prot	0.00 0.23 c0.40											
v/s Ratio Perm	c0.01 0.00 0.11											
v/c Ratio	0.08 0.01 0.01 0.14 0.29 0.51											
Uniform Delay, d1	40.7 40.4 40.3 2.5 2.9 3.8											
Progression Factor	1.00 1.00 1.00 1.00 1.00 0.89											
Incremental Delay, d2	0.3 0.0 0.0 2.5 0.2 0.5											
Delay (s)	40.9 40.4 40.4 5.0 3.1 3.8											
Level of Service	D D D A A A											
Approach Delay (s)	40.7 40.4 3.1 3.8											
Approach LOS	D D A A											
Intersection Summary												
HCM 2000 Control Delay	3.9 HCM 2000 Level of Service A											
HCM 2000 Volume to Capacity ratio	0.47											
Actuated Cycle Length (s)	100.0 Sum of lost time (s) 12.0											
Intersection Capacity Utilization	74.1% ICU Level of Service D											
Analysis Period (min)	15											
c Critical Lane Group												

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Synchro 11 Report
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HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Jane Osler Blvd

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	15	5	0	1020	1805	15		
Future Volume (Veh/h)	15	5	0	1020	1805	15		
Sign Control	Stop Free Free							
Grade	0% 0% 0%							
Peak Hour Factor	0.94 0.94 0.94 0.94 0.94 0.94							
Hourly flow rate (vph)	16 5 0 1085 1920 16							
Pedestrians	10							
Lane Width (m)	3.0							
Walking Speed (m/s)	1.2							
Percent Blockage	1							
Right turn flare (veh)								
Median type	None None							
Median storage (veh)								
Upstream signal (m)	331 68							
pX, platoon unblocked	0.86 0.86 0.86							
vC, conflicting volume	2300 658 1946							
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1933 18 1520							
tC, single (s)	*6.0 *6.0 4.1							
tC, 2 stage (s)								
tF (s)	*3.0 *3.0 2.2							
p0 queue free %	80 99 100							
cM capacity (veh/h)	82 999 379							
Direction, Lane #								
	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	21	0	362	362	362	768	768	400
Volume Left	16	0	0	0	0	0	0	0
Volume Right	5	0	0	0	0	0	0	16
eSH	105	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.20	0.00	0.21	0.21	0.21	0.45	0.45	0.24
Queue Length 95th (m)	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	E							
Approach Delay (s)	47.7 0.0						0.0	
Approach LOS	E							
Intersection Summary								
Average Delay	0.3							
Intersection Capacity Utilization	45.2%				ICU Level of Service A			
Analysis Period (min)	15							
* User Entered Value								

Existing AM 2:42 pm 07-18-2022

Synchro 11 Report
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HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Cartwright Avenue

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↔	↔	↔	↕	↕	↕	
Traffic Volume (veh/h)	10	25	10	980	1725	85	
Future Volume (Veh/h)	10	25	10	980	1725	85	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	11	27	11	1054	1855	91	
Pedestrians	10						
Lane Width (m)	3.0						
Walking Speed (m/s)	1.2						
Percent Blockage	1						
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (m)				242	156		
pX, platoon unblocked	0.86	0.86	0.86				
vC, conflicting volume	2460	674	1956				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2126	48	1540				
tC, single (s)	*6.0	*6.0	4.3				
tC, 2 stage (s)							
tF (s)	*3.0	*3.0	2.3				
p0 queue free %	82	97	97				
cM capacity (veh/h)	61	964	341				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	38	11	527	527	742	742	462
Volume Left	11	11	0	0	0	0	0
Volume Right	27	0	0	0	0	0	91
sSH	183	341	1700	1700	1700	1700	1700
Volume to Capacity	0.21	0.03	0.31	0.31	0.44	0.44	0.27
Queue Length 95th (m)	6.0	0.8	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	29.8	15.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	C					
Approach Delay (s)	29.8	0.2			0.0		
Approach LOS	D						
Intersection Summary							
Average Delay			0.4				
Intersection Capacity Utilization			45.3%		ICU Level of Service	A	
Analysis Period (min)			15				
* User Entered Value							

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Queues
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

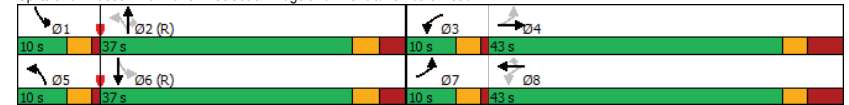
08-10-2022

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↕	↕	↕	↕
Traffic Volume (vph)	225	120	425	560	285	25	940	80	25	585
Future Volume (vph)	225	120	425	560	285	25	940	80	25	585
Lane Group Flow (vph)	227	151	429	566	288	25	949	81	25	603
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	7.0	6.0	7.0	7.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	10.0	42.5	10.0	42.5	42.5	10.0	36.5	36.5	10.0	36.5
Total Split (s)	10.0	43.0	10.0	43.0	43.0	10.0	37.0	37.0	10.0	37.0
Total Split (%)	10.0%	43.0%	10.0%	43.0%	43.0%	10.0%	37.0%	37.0%	10.0%	37.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0	3.3
All-Red Time (s)	1.0	4.5	1.0	4.5	4.5	1.0	3.2	3.2	1.0	3.2
Lost Time Adjust (s)	-2.5	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	1.5	6.5	3.0	6.5	6.5	3.0	5.5	5.5	3.0	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.96	0.26	0.77	0.90	0.47	0.11	0.73	0.13	0.14	0.61
Control Delay	68.7	21.8	31.3	50.3	11.2	14.5	27.8	2.2	17.7	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.7	21.8	31.3	50.3	11.2	14.5	27.8	2.2	17.7	26.6
Queue Length 50th (m)	25.1	19.1	56.7	105.4	13.9	2.8	81.3	0.0	2.8	60.6
Queue Length 95th (m)	#71.1	34.4	85.2	#167.0	36.4	4.4	#135.8	1.0	7.8	95.5
Internal Link Dist (m)			181.3		133.3		102.7			152.9
Turn Bay Length (m)	75.0		65.0			170.0			125.0	
Base Capacity (vph)	237	616	558	659	642	219	1304	605	185	1308
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	0.96	0.25	0.77	0.86	0.45	0.11	0.73	0.13	0.14	0.61

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 80 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Dufferin Street & Bridgeland Avenue/Yorkdale Road



Existing AM 2:42 pm 07-18-2022

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HCM Signalized Intersection Capacity Analysis
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	225	120	30	425	560	285	25	940	80	25	585	210
Future Volume (vph)	225	120	30	425	560	285	25	940	80	25	585	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	1.5	6.5		3.0	6.5	6.5	3.0	5.5	5.5	3.0	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	1666		1652	1807	1434	1415	3336	1337	1452	3265	
Flt Permitted	0.16	1.00		0.66	1.00	1.00	0.22	1.00	1.00	0.15	1.00	
Satd. Flow (perm)	252	1666		1149	1807	1434	322	3336	1337	225	3265	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	227	121	30	429	566	288	25	949	81	25	591	212
RTOR Reduction (vph)	0	9	0	0	122	0	0	51	0	34	0	0
Lane Group Flow (vph)	227	142	0	429	566	166	25	949	30	25	769	0
Confl. Peds. (#/hr)	10				10	10		5	5		10	
Confl. Bikes (#/hr)								5				
Heavy Vehicles (%)	12%	9%	11%	2%	4%	3%	19%	7%	9%	16%	4%	4%
Bus Blockages (#/hr)	0	0	3	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	39.9	33.7		39.9	33.7	33.7	38.1	35.7	35.7	38.1	35.7	
Effective Green, g (s)	44.9	34.7		41.9	34.7	34.7	40.1	36.7	36.7	40.1	36.7	
Actuated g/C Ratio	0.45	0.35		0.42	0.35	0.35	0.40	0.37	0.37	0.40	0.37	
Clearance Time (s)	4.0	7.5		4.0	7.5	7.5	4.0	6.5	6.5	4.0	6.5	
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)	228	578		517	627	497	166	1224	490	131	1198	
v/s Ratio Prot	c0.09	0.09		0.06	c0.31		0.01	c0.28		c0.01	0.24	
v/s Ratio Perm	0.36			0.29		0.12	0.06		0.02	0.07		
v/c Ratio	1.00	0.25		0.83	0.90	0.33	0.15	0.78	0.06	0.19	0.64	
Uniform Delay, d1	22.8	23.3		24.5	31.0	24.1	19.3	28.0	20.5	20.1	26.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.83	0.86	2.17	1.00	1.00	
Incremental Delay, d2	58.0	0.2		10.6	16.3	0.4	0.4	4.7	0.2	0.7	2.7	
Delay (s)	80.9	23.5		35.1	47.3	24.5	16.4	28.7	44.7	20.8	28.9	
Level of Service	F	C		D	D	C	B	C	D	C	C	
Approach Delay (s)		58.0			38.1			29.7			28.6	
Approach LOS		E			D			C			C	
Intersection Summary												
HCM 2000 Control Delay	35.5		HCM 2000 Level of Service		D							
HCM 2000 Volume to Capacity ratio	0.83											
Actuated Cycle Length (s)	100.0		Sum of lost time (s)		18.0							
Intersection Capacity Utilization	81.3%		ICU Level of Service		D							
Analysis Period (min)	15											
c Critical Lane Group												

Existing AM 2:42 pm 07-18-2022

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HCM Unsignalized Intersection Capacity Analysis
6: 3450 Dufferin St & Bridgeland Avenue

08-10-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	370	0	5	790	0	5
Future Volume (Veh/h)	370	0	5	790	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	402	0	5	859	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)				205		
pX, platoon unblocked				0.69		
vC, conflicting volume			402		1271	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			402		1169	402
tC, single (s)			4.7		6.4	6.2
tC, 2 stage (s)						
tF (s)				2.7	3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			902		148	653
Direction, Lane #						
Volume Total	402	864	5			
Volume Left	0	5	0			
Volume Right	0	0	5			
cSH	1700	902	653			
Volume to Capacity	0.24	0.01	0.01			
Queue Length 95th (m)	0.0	0.1	0.2			
Control Delay (s)	0.0	0.2	10.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.2	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization	55.6%		ICU Level of Service		B	
Analysis Period (min)	15					

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HCM Unsignalized Intersection Capacity Analysis

1: Dufferin Street & Highway 401 EB Off-Ramp/Yorkdale Mall Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↖			↖		↖↖↖	↖		↖↖↖		
Traffic Volume (veh/h)	0	0	565	0	0	140	0	1275	55	0	1065	0	
Future Volume (Veh/h)	0	0	565	0	0	140	0	1275	55	0	1065	0	
Sign Control	Yield			Stop			Free			Free			
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)	0	0	595	0	0	147	0	1342	58	0	1121	0	
Pedestrians	20			15									
Lane Width (m)	3.0			3.0									
Walking Speed (m/s)	1.2			1.2									
Percent Blockage	1			1									
Right turn flare (veh)													
Median type							None			None			
Median storage (veh)													
Upstream signal (m)							92			127			
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91			
vC, conflicting volume	1588	2498	394	2326	2498	462	1141			1357			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1288	2291	394	2101	2291	45	1141			1032			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	100	100	1	100	100	84	100			100			
cM capacity (veh/h)	91	35	600	0	35	916	611			611			
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3				
Volume Total	595	147	447	447	447	58	374	374	374				
Volume Left	0	0	0	0	0	0	0	0	0				
Volume Right	595	147	0	0	0	58	0	0	0				
sSH	600	916	1700	1700	1700	1700	1700	1700	1700				
Volume to Capacity	0.99	0.16	0.26	0.26	0.26	0.03	0.22	0.22	0.22				
Queue Length 95th (m)	117.1	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (s)	61.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Lane LOS	F	A											
Approach Delay (s)	61.0	9.7	0.0				0.0						
Approach LOS	F	A											
Intersection Summary													
Average Delay	11.6												
Intersection Capacity Utilization	62.2%			ICU Level of Service			B						
Analysis Period (min)	15												

Queues

2: Dufferin Street & Honda Access

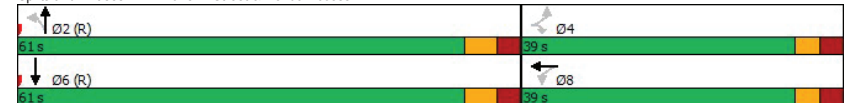
08-10-2022

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT
Lane Configurations	↖	↖	↖	↖	↖↖↖	↖↖↖
Traffic Volume (vph)	25	20	0	5	1300	1615
Future Volume (vph)	25	20	0	5	1300	1615
Lane Group Flow (vph)	26	21	5	5	1354	1698
Turn Type	Perm	Perm	NA	Perm	NA	NA
Protected Phases	8			2		
Permitted Phases	4	4	2			
Detector Phase	4	4	8	2	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	23.0	23.0	23.0
Minimum Split (s)	38.0	38.0	38.0	30.0	30.0	30.0
Total Split (s)	39.0	39.0	39.0	61.0	61.0	61.0
Total Split (%)	39.0%	39.0%	39.0%	61.0%	61.0%	61.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	C-Min
v/c Ratio	0.11	0.07	0.03	0.03	0.35	0.43
Control Delay	29.2	2.8	0.2	9.8	7.3	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	2.8	0.2	9.8	7.3	9.8
Queue Length 50th (m)	5.1	0.0	0.0	0.2	20.4	39.3
Queue Length 95th (m)	9.7	2.1	0.0	2.3	70.1	76.5
Internal Link Dist (m)			78.5	44.1	67.7	
Turn Bay Length (m)						
Base Capacity (vph)	452	495	330	162	3816	3944
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	0.06	0.04	0.02	0.03	0.35	0.43

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 73 (73%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Dufferin Street & Honda Access



HCM Signalized Intersection Capacity Analysis
2: Dufferin Street & Honda Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Traffic Volume (vph)	25	0	20	0	0	5	5	1300	0	0	1615	15
Future Volume (vph)	25	0	20	0	0	5	5	1300	0	0	1615	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	5.0 5.0 5.0 6.0 6.0 6.0											
Lane Util. Factor	1.00 1.00 1.00 1.00 1.00 1.00 0.91 0.91 0.91											
Frbp, ped/bikes	1.00 0.95 0.98 1.00 1.00 1.00											
Flpb, ped/bikes	1.00 1.00 1.00 1.00 1.00 1.00											
Frt	1.00 0.85 0.86 1.00 1.00 1.00											
Fit Protected	0.95 1.00 1.00 0.95 1.00 1.00											
Satd. Flow (prot)	1677 1372 888 1679 4860 5020											
Fit Permitted	0.75 1.00 1.00 0.12 1.00 1.00											
Satd. Flow (perm)	1332 1372 888 207 4860 5020											
Peak-hour factor, PHF	0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96											
Adj. Flow (vph)	26 0 21 0 0 5 5 1354 0 0 1682 16											
RTOR Reduction (vph)	0 0 18 0 4 0 0 0 0 0 1 0											
Lane Group Flow (vph)	26 0 3 0 1 0 5 1354 0 0 1697 0											
Confl. Peds. (#/hr)	5 45 45 5 20 10 10 20											
Heavy Vehicles (%)	0% 0% 4% 100% 0% 80% 0% 3% 0% 0% 2% 0%											
Bus Blockages (#/hr)	0 0 0 0 0 0 0 18 0 0 0 0											
Turn Type	Perm Perm NA Perm NA NA											
Protected Phases	8 2 6											
Permitted Phases	4 4 8 2											
Actuated Green, G (s)	14.3 14.3 14.3 72.7 72.7 72.7											
Effective Green, g (s)	15.3 15.3 15.3 73.7 73.7 73.7											
Actuated g/C Ratio	0.15 0.15 0.15 0.74 0.74 0.74											
Clearance Time (s)	6.0 6.0 6.0 7.0 7.0 7.0											
Vehicle Extension (s)	3.0 3.0 3.0 3.0 3.0 3.0											
Lane Grp Cap (vph)	203 209 135 152 3581 3699											
v/s Ratio Prot	0.00 0.02 0.28 c0.34											
v/s Ratio Perm	c0.02 0.00 0.02 0.03 0.38 0.46											
v/c Ratio	0.13 0.02 0.01 0.03 0.38 0.46											
Uniform Delay, d1	36.6 36.0 35.9 3.5 4.8 5.2											
Progression Factor	1.00 1.00 1.00 1.00 1.00 1.24											
Incremental Delay, d2	0.3 0.0 0.0 0.4 0.3 0.4											
Delay (s)	36.9 36.0 35.9 3.9 5.1 6.9											
Level of Service	D D D A A A											
Approach Delay (s)	36.5 35.9 5.1 6.9											
Approach LOS	D D A A											
Intersection Summary												
HCM 2000 Control Delay	6.6 HCM 2000 Level of Service A											
HCM 2000 Volume to Capacity ratio	0.41											
Actuated Cycle Length (s)	100.0 Sum of lost time (s) 12.0											
Intersection Capacity Utilization	75.9% ICU Level of Service D											
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Jane Osler Blvd

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	[Diagrammatic Lane Configurations]							
Traffic Volume (veh/h)	35	5	5	1270	1620	15		
Future Volume (Veh/h)	35	5	5	1270	1620	15		
Sign Control	Stop Free Free							
Grade	0% 0% 0%							
Peak Hour Factor	0.95 0.95 0.95 0.95 0.95 0.95							
Hourly flow rate (vph)	37 5 5 1337 1705 16							
Pedestrians	30							
Lane Width (m)	3.0							
Walking Speed (m/s)	1.2							
Percent Blockage	2							
Right turn flare (veh)								
Median type	None None							
Median storage (veh)								
Upstream signal (m)	331 68							
pX, platoon unblocked	0.87 0.87 0.87							
vC, conflicting volume	2199 606 1751							
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	1842 3 1325							
tC, single (s)	*6.0 *6.0 4.1							
tC, 2 stage (s)								
tF (s)	*3.0 *3.0 2.2							
p0 queue free %	60 100 99							
cM capacity (veh/h)	91 1014 448							
Direction, Lane #								
	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	42	5	446	446	446	682	682	357
Volume Left	37	5	0	0	0	0	0	0
Volume Right	5	0	0	0	0	0	0	16
gSH	102	448	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.41	0.01	0.26	0.26	0.26	0.40	0.40	0.21
Queue Length 95th (m)	13.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	62.6	13.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B						
Approach Delay (s)	62.6	0.0				0.0		
Approach LOS	F							
Intersection Summary								
Average Delay	0.9							
Intersection Capacity Utilization	41.7% ICU Level of Service A							
Analysis Period (min)	15							
* User Entered Value								

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Cartwright Avenue

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↔	↔	↔	↑↑	↑↑↑	↔	
Traffic Volume (veh/h)	45	95	5	1010	1590	35	
Future Volume (Veh/h)	45	95	5	1010	1590	35	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	46	98	5	1041	1639	36	
Pedestrians	30						
Lane Width (m)	3.0						
Walking Speed (m/s)	1.2						
Percent Blockage	2						
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (m)				242	156		
pX, platoon unblocked	0.87	0.87	0.87				
vC, conflicting volume	2218	594	1705				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1887	30	1301				
tC, single (s)	*6.0	*6.0	4.1				
tC, 2 stage (s)							
tF (s)	*3.0	*3.0	2.2				
p0 queue free %	47	90	99				
cM capacity (veh/h)	87	989	461				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	144	5	520	520	656	656	364
Volume Left	46	5	0	0	0	0	0
Volume Right	98	0	0	0	0	0	36
sSH	229	461	1700	1700	1700	1700	1700
Volume to Capacity	0.63	0.01	0.31	0.31	0.39	0.39	0.21
Queue Length 95th (m)	30.1	0.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	44.2	12.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	E	B					
Approach Delay (s)	44.2	0.1			0.0		
Approach LOS	E						
Intersection Summary							
Average Delay			2.2				
Intersection Capacity Utilization			46.6%		ICU Level of Service		A
Analysis Period (min)			15				
* User Entered Value							

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Queues
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

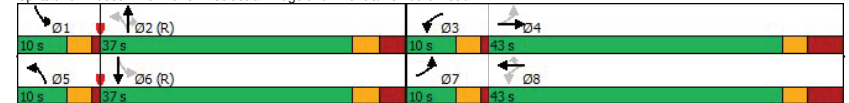
08-10-2022

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↑↑	↔	↔	↔
Traffic Volume (vph)	340	200	335	325	475	15	1340	60	50	715
Future Volume (vph)	340	200	335	325	475	15	1340	60	50	715
Lane Group Flow (vph)	351	221	345	335	490	15	1381	62	52	964
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	7.0	6.0	7.0	7.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	10.0	42.5	10.0	42.5	42.5	10.0	36.5	36.5	10.0	36.5
Total Split (s)	10.0	43.0	10.0	43.0	43.0	10.0	37.0	37.0	10.0	37.0
Total Split (%)	10.0%	43.0%	10.0%	43.0%	43.0%	10.0%	37.0%	37.0%	10.0%	37.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0	3.3
All-Red Time (s)	1.0	4.5	1.0	4.5	4.5	1.0	3.2	3.2	1.0	3.2
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-1.0	-1.0	-3.0	-1.0	-1.0	-1.0
Total Lost Time (s)	2.0	6.5	3.0	6.5	6.5	3.0	3.5	5.5	3.0	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.90	0.38	0.76	0.58	0.91	0.08	0.98	0.10	0.27	0.67
Control Delay	47.2	27.1	32.6	32.3	42.5	10.6	47.9	1.3	19.3	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	27.1	32.6	32.3	42.5	10.6	47.9	1.3	19.3	27.6
Queue Length 50th (m)	43.4	32.4	44.0	53.9	60.8	1.7	~179.7	0.2	5.8	77.2
Queue Length 95th (m)	#77.9	51.1	65.0	79.6	#119.5	m2.6	#223.8	0.0	13.2	#133.5
Internal Link Dist (m)		181.3		133.3			102.7			152.9
Turn Bay Length (m)	75.0		65.0			170.0			125.0	
Base Capacity (vph)	392	667	456	665	596	178	1410	618	194	1430
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	0.90	0.33	0.76	0.50	0.82	0.08	0.98	0.10	0.27	0.67

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 80 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Dufferin Street & Bridgeland Avenue/Yorkdale Road



HCM Signalized Intersection Capacity Analysis
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	340	200	15	335	325	475	15	1340	60	50	715	220
Future Volume (vph)	340	200	15	335	325	475	15	1340	60	50	715	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	2.0	6.5		3.0	6.5	6.5	3.0	3.5	5.5	3.0	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Fit Protected	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1756	1823		1660	1824	1322	1247	3500	1396	1685	3302	
Fit Permitted	0.40	1.00		0.56	1.00	1.00	0.18	1.00	1.00	0.10	1.00	
Satd. Flow (perm)	703	1823		977	1824	1322	231	3500	1396	176	3302	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	351	206	15	345	335	490	15	1381	62	52	737	227
RTOR Reduction (vph)	0	3	0	0	0	123	0	0	39	0	26	0
Lane Group Flow (vph)	351	218	0	345	335	367	15	1381	23	52	938	0
Confl. Peds. (#/hr)			15	15			20					20
Heavy Vehicles (%)	1%	2%	0%	1%	3%	14%	35%	2%	8%	0%	3%	3%
Bus Blockages (#/hr)	0	0	3	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	36.4	30.4		36.4	30.4	30.4	38.9	36.5	36.5	44.3	39.2	
Effective Green, g (s)	40.4	31.4		38.4	31.4	31.4	40.9	39.5	37.5	46.3	40.2	
Actuated g/C Ratio	0.40	0.31		0.38	0.31	0.31	0.41	0.40	0.38	0.46	0.40	
Clearance Time (s)	4.0	7.5		4.0	7.5	7.5	4.0	6.5	6.5	4.0	6.5	
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)	368	572		422	572	415	129	1382	523	173	1327	
v/s Ratio Prot	c0.08	0.12		0.06	0.18		0.00	c0.39		c0.02	0.28	
v/s Ratio Perm	0.31			0.26			c0.28	0.04		0.02	0.12	
v/c Ratio	0.95	0.38		0.82	0.59	0.88	0.12	1.00	0.04	0.30	0.71	
Uniform Delay, d1	28.0	26.7		26.9	28.8	32.6	18.9	30.2	19.9	21.6	25.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.61	0.83	1.00	1.00	1.00	
Incremental Delay, d2	34.8	0.4		11.6	1.5	19.4	0.4	23.6	0.2	1.0	3.2	
Delay (s)	62.7	27.2		38.5	30.4	51.9	11.9	48.7	20.0	22.6	28.2	
Level of Service	E	C		D	C	D	B	D	C	C	C	
Approach Delay (s)		49.0			41.8			47.1			27.9	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM 2000 Control Delay		41.3										D
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		100.0									18.0	
Intersection Capacity Utilization		97.4%									F	
Analysis Period (min)		15										
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
6: 3450 Dufferin St & Bridgeland Avenue

08-10-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	550	0	0	560	0	5
Future Volume (Veh/h)	550	0	0	560	0	5
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)	573	0	0	583	0	5
Pedestrians					20	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)				205		
pX, platoon unblocked					0.85	
vC, conflicting volume			593		1176	593
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			593		1118	593
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	99
cM capacity (veh/h)			979		193	459
Direction, Lane #						
Volume Total	573	583		5		
Volume Left	0	0		0		
Volume Right	0	0		5		
cSH	1700	979		459		
Volume to Capacity	0.34	0.00		0.01		
Queue Length 95th (m)	0.0	0.0		0.3		
Control Delay (s)	0.0	0.0		12.9		
Lane LOS				B		
Approach Delay (s)	0.0	0.0		12.9		
Approach LOS				B		
Intersection Summary						
Average Delay				0.1		
Intersection Capacity Utilization			39.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Dufferin Street & Highway 401 EB Off-Ramp/Yorkdale Mall Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↖↖↖	↖↖↖	↗		↖↖↖	
Traffic Volume (veh/h)	0	0	815	0	0	25	0	1390	15	0	1150	0
Future Volume (Veh/h)	0	0	815	0	0	25	0	1390	15	0	1150	0
Sign Control	Yield			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	876	0	0	27	0	1495	16	0	1237	0
Pedestrians	5						5					
Lane Width (m)	3.0						3.4					
Walking Speed (m/s)	1.2						1.2					
Percent Blockage	0						0					
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)							92			127		
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	1735	2737	417	2793	2737	503	1237			1500		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1489	2580	417	2641	2580	147	1237			1232		
tC, single (s)	7.5	6.5	7.0	7.5	6.5	7.1	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	0	0	100	97	100			100		
cM capacity (veh/h)	77	24	571	0	24	774	570			524		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3			
Volume Total	876	27	498	498	498	16	412	412	412			
Volume Left	0	0	0	0	0	0	0	0	0			
Volume Right	876	27	0	0	0	16	0	0	0			
sSH	571	774	1700	1700	1700	1700	1700	1700	1700			
Volume to Capacity	1.53	0.03	0.29	0.29	0.29	0.01	0.24	0.24	0.24			
Queue Length 95th (m)	362.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Control Delay (s)	268.5	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Lane LOS	F	A										
Approach Delay (s)	268.5	9.8	0.0									
Approach LOS	F	A										
Intersection Summary												
Average Delay			64.5									
Intersection Capacity Utilization			79.9%			ICU Level of Service			D			
Analysis Period (min)			15									

Queues

2: Dufferin Street & Honda Access

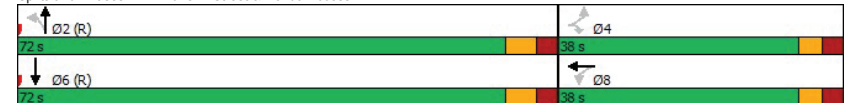
08-10-2022

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT
Lane Configurations	↖	↗	↖↖	↗	↖↖↖	↖↖↖
Traffic Volume (vph)	10	25	0	10	1390	1940
Future Volume (vph)	10	25	0	10	1390	1940
Lane Group Flow (vph)	11	27	5	11	1479	2091
Turn Type	Perm	Perm	NA	Perm	NA	NA
Protected Phases	8			2		
Permitted Phases	4	4	2			
Detector Phase	4	4	8	2	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	23.0	23.0	23.0
Minimum Split (s)	38.0	38.0	38.0	30.0	30.0	30.0
Total Split (s)	38.0	38.0	38.0	72.0	72.0	72.0
Total Split (%)	34.5%	34.5%	34.5%	65.5%	65.5%	65.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	C-Min
v/c Ratio	0.07	0.14	0.03	0.10	0.37	0.50
Control Delay	38.3	7.2	0.4	9.1	4.6	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	38.3	7.2	0.4	9.1	4.6	5.2
Queue Length 50th (m)	2.4	0.0	0.0	0.4	22.8	42.6
Queue Length 95th (m)	6.2	4.5	0.0	4.6	79.1	92.4
Internal Link Dist (m)			78.5	44.1		67.7
Turn Bay Length (m)	40.0					
Base Capacity (vph)	393	421	327	107	4007	4147
Starvation Cap Reductn	0	0	0	0	0	689
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.06	0.02	0.10	0.37	0.60

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Dufferin Street & Honda Access



HCM Signalized Intersection Capacity Analysis
2: Dufferin Street & Honda Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Traffic Volume (vph)	10	0	25	0	0	5	10	1390	0	0	1940	25
Future Volume (vph)	10	0	25	0	0	5	10	1390	0	0	1940	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91	1.00	0.91	1.00	0.91
Frbp, ped/bikes	1.00	0.98	0.96	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1650	1311	990	1573	4711	4876	4876	4876	4876	4876	4876	4876
Fit Permitted	0.75	1.00	1.00	0.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1311	1311	990	127	4711	4876	4876	4876	4876	4876	4876	4876
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	11	0	27	0	0	5	11	1479	0	0	2064	27
RTOR Reduction (vph)	0	0	24	0	5	0	0	0	0	0	1	0
Lane Group Flow (vph)	11	0	3	0	0	0	11	1479	0	0	2090	0
Confl. Peds. (#/hr)	20	5	5	20	10	10	10	10	10	10	10	10
Confl. Bikes (#/hr)				5								
Heavy Vehicles (%)	0%	0%	13%	50%	0%	57%	7%	7%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	13	0	0	0	0	0
Turn Type	Perm	Perm	Perm	NA	NA	Perm	NA	NA	NA	NA	NA	NA
Protected Phases				8			2				6	
Permitted Phases	4	4	8				2					
Actuated Green, G (s)	9.2	9.2	9.2	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8	87.8
Effective Green, g (s)	10.2	10.2	10.2	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8	88.8
Actuated g/C Ratio	0.09	0.09	0.09	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Clearance Time (s)	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	121	121	91	102	3803	3936	3936	3936	3936	3936	3936	3936
v/s Ratio Prot			0.00			0.31					0.43	
v/s Ratio Perm	c0.01	0.00				0.09						
v/c Ratio	0.09	0.02	0.01	0.11	0.39	0.53	0.53	0.53	0.53	0.53	0.53	0.53
Uniform Delay, d1	45.7	45.4	45.3	2.2	3.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Incremental Delay, d2	0.3	0.1	0.0	2.1	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Delay (s)	46.0	45.4	45.3	4.4	3.3	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Level of Service	D	D	D	A	A	A	A	A	A	A	A	A
Approach Delay (s)	45.6		45.3		3.3	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Approach LOS	D		D		A	A	A	A	A	A	A	A
Intersection Summary												
HCM 2000 Control Delay	4.0		HCM 2000 Level of Service		A							
HCM 2000 Volume to Capacity ratio	0.49											
Actuated Cycle Length (s)	110.0		Sum of lost time (s)		12.0							
Intersection Capacity Utilization	76.4%		ICU Level of Service		D							
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Jane Osler Blvd

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]					
Traffic Volume (veh/h)	15	5	0	1385	1950	15
Future Volume (Veh/h)	15	5	0	1385	1950	15
Sign Control	Stop		Free			
Grade	0%		0%			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	5	0	1473	2074	16
Pedestrians	10					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			331		68	
pX, platoon unblocked	0.85	0.85	0.85			
vC, conflicting volume	2583	709	2100			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2255	60	1689			
tC, single (s)	*6.0	*6.0	4.1			
tC, 2 stage (s)						
tF (s)	*3.0	*3.0	2.2			
p0 queue free %	70	99	100			
cM capacity (veh/h)	53	944	325			
Direction, Lane #						
Volume Total	21	0	491	491	491	830
Volume Left	16	0	0	0	0	0
Volume Right	5	0	0	0	0	16
cSH	68	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.00	0.29	0.29	0.29	0.49
Queue Length 95th (m)	9.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	80.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	80.1	0.0			0.0	
Approach LOS	F					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			48.0%		ICU Level of Service	
Analysis Period (min)			15			
* User Entered Value						

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Cartwright Avenue

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↔	↔	↔	↕	↕	↕	
Traffic Volume (veh/h)	10	25	10	1345	1870	85	
Future Volume (Veh/h)	10	25	10	1345	1870	85	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	11	27	11	1446	2011	91	
Pedestrians	10						
Lane Width (m)	3.0						
Walking Speed (m/s)	1.2						
Percent Blockage	1						
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (m)				242	156		
pX, platoon unblocked	0.87	0.87	0.87				
vC, conflicting volume	2812	726	2112				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2549	138	1740				
tC, single (s)	*6.0	*6.0	4.3				
tC, 2 stage (s)							
tF (s)	*3.0	*3.0	2.3				
p0 queue free %	68	97	96				
cM capacity (veh/h)	34	867	286				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	38	11	723	723	804	804	493
Volume Left	11	11	0	0	0	0	0
Volume Right	27	0	0	0	0	0	91
sSH	108	286	1700	1700	1700	1700	1700
Volume to Capacity	0.35	0.04	0.43	0.43	0.47	0.47	0.29
Queue Length 95th (m)	11.3	1.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	55.6	18.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C					
Approach Delay (s)	55.6	0.1			0.0		
Approach LOS	F						
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			48.1%		ICU Level of Service		A
Analysis Period (min)			15				
* User Entered Value							

Queues
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

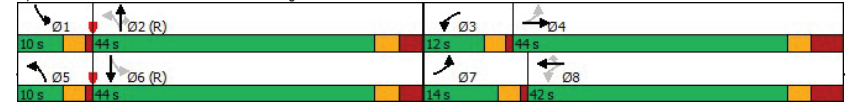
08-10-2022

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↕	↕	↕	↕
Traffic Volume (vph)	225	120	425	560	285	25	1310	80	25	690
Future Volume (vph)	225	120	425	560	285	25	1310	80	25	690
Lane Group Flow (vph)	227	151	429	566	288	25	1323	81	25	909
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	7.0	6.0	7.0	7.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	10.0	42.5	10.0	42.5	42.5	10.0	36.5	36.5	10.0	36.5
Total Split (s)	14.0	44.0	12.0	42.0	42.0	10.0	44.0	44.0	10.0	44.0
Total Split (%)	12.7%	40.0%	10.9%	38.2%	38.2%	9.1%	40.0%	40.0%	9.1%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0	3.3
All-Red Time (s)	1.0	4.5	1.0	4.5	4.5	1.0	3.2	3.2	1.0	3.2
Lost Time Adjust (s)	-3.0	-1.0	-1.0	-1.0	-1.0	-1.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	1.0	6.5	3.0	6.5	6.5	3.0	4.5	5.5	3.0	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.89	0.26	0.79	0.97	0.51	0.14	0.95	0.14	0.17	0.70
Control Delay	58.7	25.6	36.2	68.4	16.4	16.5	45.7	3.7	18.8	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	25.6	36.2	68.4	16.4	16.5	45.7	3.7	18.8	31.6
Queue Length 50th (m)	33.8	22.4	65.6	125.5	22.0	3.0	~163.5	0.9	3.0	91.6
Queue Length 95th (m)	#79.7	39.2	#103.0	#197.7	48.8	6.3	#195.2	4.0	8.0	117.3
Internal Link Dist (m)		181.3		133.3			102.7			152.9
Turn Bay Length (m)	75.0		65.0			170.0			125.0	
Base Capacity (vph)	256	575	542	583	569	183	1389	592	150	1293
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	0.89	0.26	0.79	0.97	0.51	0.14	0.95	0.14	0.17	0.70

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Dufferin Street & Bridgeland Avenue/Yorkdale Road



HCM Signalized Intersection Capacity Analysis
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	225	120	30	425	560	285	25	1310	80	25	690	210
Future Volume (vph)	225	120	30	425	560	285	25	1310	80	25	690	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	1.0	6.5		3.0	6.5	6.5	3.0	4.5	5.5	3.0	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Fit Protected	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	1666		1652	1807	1432	1415	3512	1336	1452	3283	
Fit Permitted	0.12	1.00		0.66	1.00	1.00	0.16	1.00	1.00	0.10	1.00	
Satd. Flow (perm)	183	1666		1149	1807	1432	244	3512	1336	150	3283	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	227	121	30	429	566	288	25	1323	81	25	697	212
RTOR Reduction (vph)	0	8	0	0	0	108	0	0	51	0	25	0
Lane Group Flow (vph)	227	143	0	429	566	180	25	1323	30	25	884	0
Conf. Peds. (#/hr)	10					10	10		5	5		10
Conf. Bikes (#/hr)									5			
Heavy Vehicles (%)	12%	9%	11%	2%	4%	3%	19%	7%	9%	16%	4%	4%
Bus Blockages (#/hr)	0	0	3	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	46.5	36.5		42.5	34.5	34.5	43.5	39.9	39.9	43.5	39.9	
Effective Green, g (s)	51.5	37.5		44.5	35.5	35.5	45.5	41.9	40.9	45.5	40.9	
Actuated g/C Ratio	0.47	0.34		0.40	0.32	0.32	0.41	0.38	0.37	0.41	0.37	
Clearance Time (s)	4.0	7.5		4.0	7.5	7.5	4.0	6.5	6.5	4.0	6.5	
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)	251	567		505	583	462	149	1337	496	116	1220	
v/s Ratio Prot	c0.11	0.09		0.07	c0.31		0.01	c0.38		c0.01	0.27	
v/s Ratio Perm	0.32			0.27		0.13	0.06		0.02	0.08		
v/c Ratio	0.90	0.25		0.85	0.97	0.39	0.17	0.99	0.06	0.22	0.72	
Uniform Delay, d1	28.2	26.1		28.1	36.7	28.9	21.1	33.8	22.2	25.0	29.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.92	0.91	2.41	1.00	1.00	
Incremental Delay, d2	32.5	0.2		12.6	29.9	0.5	0.5	21.6	0.2	0.9	3.8	
Delay (s)	60.7	26.4		40.7	66.6	29.4	19.8	52.3	53.8	25.9	33.5	
Level of Service	E	C		D	E	C	B	D	D	C	C	
Approach Delay (s)		47.0			49.6			51.8			33.3	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM 2000 Control Delay		46.3										D
HCM 2000 Volume to Capacity ratio		0.95										
Actuated Cycle Length (s)		110.0					Sum of lost time (s)	18.0				
Intersection Capacity Utilization		90.7%										E
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: 3450 Dufferin St & Bridgeland Avenue

08-10-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	370	0	5	790	0	5
Future Volume (Veh/h)	370	0	5	790	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	402	0	5	859	0	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)				205		
pX, platoon unblocked				0.70		
vC, conflicting volume			402		1271	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			402		1171	402
tC, single (s)			4.7		6.4	6.2
tC, 2 stage (s)						
tF (s)				2.7	3.5	3.3
p0 queue free %				99	100	99
cM capacity (veh/h)				902	149	653
Direction, Lane #						
Volume Total	402	864	5			
Volume Left	0	5	0			
Volume Right	0	0	5			
cSH	1700	902	653			
Volume to Capacity	0.24	0.01	0.01			
Queue Length 95th (m)	0.0	0.1	0.2			
Control Delay (s)	0.0	0.2	10.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.2	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay				0.1		
Intersection Capacity Utilization			55.6%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Dufferin Street & Highway 401 EB Off-Ramp/Yorkdale Mall Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕↕↕	↗		↕↕↕	
Traffic Volume (veh/h)	0	0	585	0	0	140	0	1415	55	0	1305	0
Future Volume (Veh/h)	0	0	585	0	0	140	0	1415	55	0	1305	0
Sign Control	Yield				Stop		Free				Free	
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)	0	0	616	0	0	147	0	1489	58	0	1374	0
Pedestrians	20				15							
Lane Width (m)	3.0				3.0							
Walking Speed (m/s)	1.2				1.2							
Percent Blockage	1				1							
Right turn flare (veh)												
Median type						None			None			
Median storage (veh)												
Upstream signal (m)						92			127			
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1890	2898	478	2578	2898	511	1394			1504		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1579	2707	478	2349	2707	36	1394			1147		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	0	0	100	84	100			100		
cM capacity (veh/h)	54	19	529	0	19	915	490			545		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3			
Volume Total	616	147	496	496	496	58	458	458	458			
Volume Left	0	0	0	0	0	0	0	0	0			
Volume Right	616	147	0	0	0	58	0	0	0			
sSH	529	915	1700	1700	1700	1700	1700	1700	1700			
Volume to Capacity	1.16	0.16	0.29	0.29	0.29	0.03	0.27	0.27	0.27			
Queue Length 95th (m)	172.8	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Control Delay (s)	119.2	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Lane LOS	F	A										
Approach Delay (s)	119.2	9.7	0.0									
Approach LOS	F	A										
Intersection Summary												
Average Delay			20.3									
Intersection Capacity Utilization			68.1%		ICU Level of Service						C	
Analysis Period (min)			15									

Queues

2: Dufferin Street & Honda Access

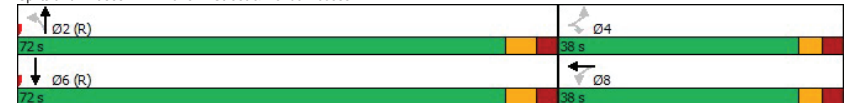
08-10-2022

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT
Lane Configurations	↗	↗	↕↕↕	↗	↕↕↕	↕↕↕
Traffic Volume (vph)	25	30	0	5	1440	1890
Future Volume (vph)	25	30	0	5	1440	1890
Lane Group Flow (vph)	26	31	5	5	1500	1969
Turn Type	Perm	Perm	NA	Perm	NA	NA
Protected Phases			8		2	
Permitted Phases	4		4		2	
Detector Phase	4		4		8	
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	23.0	23.0	23.0
Minimum Split (s)	38.0	38.0	38.0	30.0	30.0	30.0
Total Split (s)	38.0	38.0	38.0	72.0	72.0	72.0
Total Split (%)	34.5%	34.5%	34.5%	65.5%	65.5%	65.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	C-Min
v/c Ratio	0.12	0.12	0.03	0.04	0.40	0.51
Control Delay	34.3	7.6	0.2	9.6	7.4	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	34.3	7.6	0.2	9.6	7.4	6.7
Queue Length 50th (m)	5.6	0.0	0.0	0.2	24.1	42.6
Queue Length 95th (m)	11.1	5.7	0.0	2.3	79.4	65.7
Internal Link Dist (m)			78.5		44.1	67.7
Turn Bay Length (m)	40.0					
Base Capacity (vph)	399	437	294	113	3741	3871
Starvation Cap Reductn	0	0	0	0	0	649
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.07	0.02	0.04	0.40	0.61

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Dufferin Street & Honda Access



HCM Signalized Intersection Capacity Analysis
2: Dufferin Street & Honda Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	30	0	0	5	5	1440	0	0	1890	0
Future Volume (vph)	25	0	30	0	0	5	5	1440	0	0	1890	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	0.91	0.91
Frbp, ped/bikes	1.00	0.94	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1676	1366	888	1681	4860	5029	1681	4860	5029	1681	4860	5029
Fit Permitted	0.75	1.00	1.00	0.08	1.00	1.00	0.08	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	1331	1366	888	147	4860	5029	147	4860	5029	147	4860	5029
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	26	0	31	0	0	5	5	1500	0	0	1969	0
RTOR Reduction (vph)	0	0	26	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	26	0	5	0	1	0	5	1500	0	0	1969	0
Confl. Peds. (#/hr)	5	45	45	5	20	10	10	20	10	10	20	20
Heavy Vehicles (%)	0%	0%	4%	100%	0%	80%	0%	3%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	18	0	0	0	0
Turn Type	Perm	Perm	NA	Perm	NA	NA	Perm	NA	NA	NA	NA	NA
Protected Phases	8			2			2			6		
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.7	15.7	15.7	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3
Effective Green, g (s)	16.7	16.7	16.7	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3
Actuated g/C Ratio	0.15	0.15	0.15	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Clearance Time (s)	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	207	134	109	3636	3762	109	3636	3762	109	3636	3762
v/s Ratio Prot	0.00			0.03			0.31			c0.39		
v/s Ratio Perm	c0.02			0.01			0.05			0.52		
v/c Ratio	0.13			0.02			0.05			0.52		
Uniform Delay, d1	40.4			39.6			3.6			5.7		
Progression Factor	1.00			1.00			1.00			0.77		
Incremental Delay, d2	0.3			0.0			0.8			0.4		
Delay (s)	40.6			39.7			4.4			5.4		
Level of Service	D			D			A			A		
Approach Delay (s)	40.2			39.6			5.4			4.9		
Approach LOS	D			D			A			A		
Intersection Summary												
HCM 2000 Control Delay	5.7			HCM 2000 Level of Service			A					
HCM 2000 Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	110.0			Sum of lost time (s)			12.0					
Intersection Capacity Utilization	80.9%			ICU Level of Service			D					
Analysis Period (min)	15											
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Jane Osler Blvd

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	5	5	1405	1905	15
Future Volume (Veh/h)	35	5	5	1405	1905	15
Sign Control	Stop		Free			
Grade	0%		0%			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	37	5	5	1479	2005	16
Pedestrians	30					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.2					
Percent Blockage	2					
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			331		68	
pX, platoon unblocked	0.84	0.84	0.84			
vC, conflicting volume	2546	706	2051			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2160	0	1568			
tC, single (s)	*6.0	*6.0	4.1			
tC, 2 stage (s)						
tF (s)	*3.0	*3.0	2.2			
p0 queue free %	35	99	99			
cM capacity (veh/h)	57	981	349			
Direction, Lane #						
Volume Total	42	5	493	493	493	802
Volume Left	37	5	0	0	0	0
Volume Right	5	0	0	0	0	16
cSH	64	349	1700	1700	1700	1700
Volume to Capacity	0.65	0.01	0.29	0.29	0.29	0.47
Queue Length 95th (m)	22.5	0.3	0.0	0.0	0.0	0.0
Control Delay (s)	133.6	15.5	0.0	0.0	0.0	0.0
Lane LOS	F	C				
Approach Delay (s)	133.6	0.1	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization	47.2%		ICU Level of Service		A	
Analysis Period (min)	15					
* User Entered Value						

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Cartwright Avenue

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↔	↔	↔	↕	↕	↕	
Traffic Volume (veh/h)	45	95	5	1145	1875	35	
Future Volume (Veh/h)	45	95	5	1145	1875	35	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	46	98	5	1180	1933	36	
Pedestrians	30						
Lane Width (m)	3.0						
Walking Speed (m/s)	1.2						
Percent Blockage	2						
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (m)				242	156		
pX, platoon unblocked	0.85	0.85	0.85				
vC, conflicting volume	2581	692	1999				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2250	35	1567				
tC, single (s)	*6.0	*6.0	4.1				
tC, 2 stage (s)							
tF (s)	*3.0	*3.0	2.2				
p0 queue free %	11	90	99				
cM capacity (veh/h)	51	959	356				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	144	5	590	590	773	773	423
Volume Left	46	5	0	0	0	0	0
Volume Right	98	0	0	0	0	0	36
sSH	145	356	1700	1700	1700	1700	1700
Volume to Capacity	1.00	0.01	0.35	0.35	0.45	0.45	0.25
Queue Length 95th (m)	58.5	0.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	134.6	15.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C					
Approach Delay (s)	134.6	0.1			0.0		
Approach LOS	F						
Intersection Summary							
Average Delay			5.9				
Intersection Capacity Utilization			52.1%		ICU Level of Service		A
Analysis Period (min)			15				
* User Entered Value							

FB PM 2:42 pm 07-18-2022

Synchro 11 Report
Page 5

Queues
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

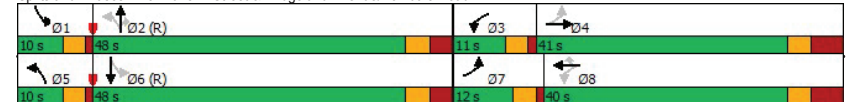
08-10-2022

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	340	200	335	325	475	15	1480	60	50	955
Future Volume (vph)	340	200	335	325	475	15	1480	60	50	955
Lane Group Flow (vph)	351	221	345	335	490	15	1526	62	52	1212
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	7.0	6.0	7.0	7.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	10.0	42.5	10.0	42.5	42.5	10.0	36.5	36.5	10.0	36.5
Total Split (s)	12.0	41.0	11.0	40.0	40.0	10.0	48.0	48.0	10.0	48.0
Total Split (%)	10.9%	37.3%	10.0%	36.4%	36.4%	9.1%	43.6%	43.6%	9.1%	43.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0	3.3
All-Red Time (s)	1.0	4.5	1.0	4.5	4.5	1.0	3.2	3.2	1.0	3.2
Lost Time Adjust (s)	-2.5	-1.0	-1.0	-1.0	-1.0	-1.0	-3.0	-1.0	-1.0	-1.0
Total Lost Time (s)	1.5	6.5	3.0	6.5	6.5	3.0	3.5	5.5	3.0	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.87	0.39	0.77	0.60	0.98	0.12	0.98	0.10	0.30	0.82
Control Delay	46.4	31.5	37.7	38.1	62.6	13.1	46.2	0.4	18.9	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	31.5	37.7	38.1	62.6	13.1	46.2	0.4	18.9	32.7
Queue Length 50th (m)	52.1	38.3	53.2	64.4	83.4	1.7	~184.4	0.4	5.9	111.6
Queue Length 95th (m)	#98.7	60.5	#84.9	95.3	#154.5	m2.9	#227.4	0.0	12.6	#179.9
Internal Link Dist (m)		181.3		133.3			102.7			152.9
Turn Bay Length (m)	75.0		65.0			170.0			125.0	
Base Capacity (vph)	402	573	450	555	502	129	1557	638	172	1486
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	0.87	0.39	0.77	0.60	0.98	0.12	0.98	0.10	0.30	0.82

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Dufferin Street & Bridgeland Avenue/Yorkdale Road



HCM Signalized Intersection Capacity Analysis
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	340	200	15	335	325	475	15	1480	60	50	955	220
Future Volume (vph)	340	200	15	335	325	475	15	1480	60	50	955	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	1.5	6.5		3.0	6.5	6.5	3.0	3.5	5.5	3.0	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	*1.00	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Fit Protected	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1756	1823		1659	1824	1322	1248	3684	1396	1685	3333	
Fit Permitted	0.37	1.00		0.56	1.00	1.00	0.09	1.00	1.00	0.09	1.00	
Satd. Flow (perm)	654	1823		984	1824	1322	120	3684	1396	154	3333	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	351	206	15	345	335	490	15	1526	62	52	985	227
RTOR Reduction (vph)	0	2	0	0	0	99	0	0	37	0	17	0
Lane Group Flow (vph)	351	219	0	345	335	391	15	1526	25	52	1195	0
Confl. Peds. (#/hr)			15	15			20					20
Heavy Vehicles (%)	1%	2%	0%	1%	3%	14%	35%	2%	8%	0%	3%	3%
Bus Blockages (#/hr)	0	0	3	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	41.5	33.5		39.5	32.5	32.5	45.1	42.7	42.7	49.9	45.1	
Effective Green, g (s)	46.5	34.5		41.5	33.5	33.5	47.1	45.7	43.7	51.9	46.1	
Actuated g/C Ratio	0.42	0.31		0.38	0.30	0.30	0.43	0.42	0.40	0.47	0.42	
Clearance Time (s)	4.0	7.5		4.0	7.5	7.5	4.0	6.5	6.5	4.0	6.5	
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)	381	571		420	555	402	86	1530	554	153	1396	
v/s Ratio Prot	c0.09	0.12		0.06	0.18		0.01	c0.41		c0.02	0.36	
v/s Ratio Perm	0.30			0.25		c0.30	0.07		0.02	0.14		
v/c Ratio	0.92	0.38		0.82	0.60	0.97	0.17	1.00	0.04	0.34	0.86	
Uniform Delay, d1	28.2	29.5		29.9	32.6	37.8	21.7	32.1	20.3	24.1	28.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.80	0.85	1.00	1.00	1.00	
Incremental Delay, d2	27.2	0.4		12.2	1.9	37.2	0.9	21.8	0.1	1.3	6.9	
Delay (s)	55.5	29.9		42.1	34.4	75.0	18.3	49.1	20.5	25.5	35.9	
Level of Service	E	C		D	C	E	B	D	C	C	D	
Approach Delay (s)		45.6			53.7			47.7			35.4	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay		45.6										D
HCM 2000 Volume to Capacity ratio		0.96										
Actuated Cycle Length (s)		110.0						18.0				
Intersection Capacity Utilization		101.2%										G
Analysis Period (min)		15										
c	Critical Lane Group											

HCM Unsignalized Intersection Capacity Analysis
6: 3450 Dufferin St & Bridgeland Avenue

08-10-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	550	0	0	560	0	5
Future Volume (Veh/h)	550	0	0	560	0	5
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)	573	0	0	583	0	5
Pedestrians					20	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)				205		
pX, platoon unblocked					0.84	
vC, conflicting volume			593		1176	593
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			593		1116	593
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	99
cM capacity (veh/h)			979		193	459
Direction, Lane #						
Volume Total	573	583	5			
Volume Left	0	0	0			
Volume Right	0	0	5			
cSH	1700	979	459			
Volume to Capacity	0.34	0.00	0.01			
Queue Length 95th (m)	0.0	0.0	0.3			
Control Delay (s)	0.0	0.0	12.9			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.9			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			39.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Dufferin Street & Highway 401 EB Off-Ramp/Yorkdale Mall Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↗↗↗	↘		↗↗↗	
Traffic Volume (veh/h)	0	0	815	0	0	25	0	1400	15	0	1135	0
Future Volume (Veh/h)	0	0	815	0	0	25	0	1400	15	0	1135	0
Sign Control	Yield			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	876	0	0	27	0	1505	16	0	1220	0
Pedestrians				5			5					
Lane Width (m)				3.0			3.4					
Walking Speed (m/s)				1.2			1.2					
Percent Blockage				0			0					
Right turn flare (veh)												
Median type				None			None					
Median storage (veh)												
Upstream signal (m)							92			127		
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	1722	2730	412	2798	2730	507	1220			1510		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1434	2547	412	2622	2547	94	1220			1201		
tC, single (s)	7.5	6.5	7.0	7.5	6.5	7.1	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	100	0	0	100	97	100			100		
cM capacity (veh/h)	84	25	576	0	25	828	579			531		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3			
Volume Total	876	27	502	502	502	16	407	407	407			
Volume Left	0	0	0	0	0	0	0	0	0			
Volume Right	876	27	0	0	0	16	0	0	0			
cSH	576	828	1700	1700	1700	1700	1700	1700	1700			
Volume to Capacity	1.52	0.03	0.30	0.30	0.30	0.01	0.24	0.24	0.24			
Queue Length 95th (m)	358.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Control Delay (s)	262.7	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Lane LOS	F	A										
Approach Delay (s)	262.7	9.5	0.0				0.0					
Approach LOS	F	A										
Intersection Summary												
Average Delay			63.2									
Intersection Capacity Utilization			79.6%			ICU Level of Service			D			
Analysis Period (min)			15									

Queues

2: Dufferin Street & Honda Access

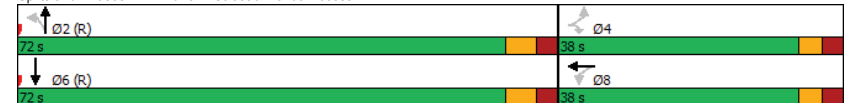
08-10-2022

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT
Lane Configurations	↗	↗	↔	↘	↗↗↗	↗↗↗
Traffic Volume (vph)	20	80	0	15	1390	1940
Future Volume (vph)	20	80	0	15	1390	1940
Lane Group Flow (vph)	21	85	5	16	1479	2075
Turn Type	Perm	Perm	NA	Perm	NA	NA
Protected Phases	8			2		6
Permitted Phases	4	4		2		
Detector Phase	4	4	8	2	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	23.0	23.0	23.0
Minimum Split (s)	38.0	38.0	38.0	30.0	30.0	30.0
Total Split (s)	38.0	38.0	38.0	72.0	72.0	72.0
Total Split (%)	34.5%	34.5%	34.5%	65.5%	65.5%	65.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	C-Min
v/c Ratio	0.12	0.41	0.03	0.16	0.39	0.53
Control Delay	38.6	28.6	0.4	11.5	5.5	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	38.6	28.6	0.4	11.5	5.5	5.9
Queue Length 50th (m)	4.5	9.7	0.0	0.6	26.9	42.1
Queue Length 95th (m)	9.6	20.0	0.0	6.8	79.1	92.1
Internal Link Dist (m)			78.5		44.1	67.7
Turn Bay Length (m)	40.0					
Base Capacity (vph)	393	421	327	101	3785	3922
Starvation Cap Reductn	0	0	0	0	0	652
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.20	0.02	0.16	0.39	0.63

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Signals and Phases: 2: Dufferin Street & Honda Access



HCM Signalized Intersection Capacity Analysis
2: Dufferin Street & Honda Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	80	0	0	5	15	1390	0	0	1940	10
Future Volume (vph)	20	0	80	0	0	5	15	1390	0	0	1940	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	5.0		5.0		5.0		6.0		6.0		6.0	
Lane Util. Factor	1.00		1.00		1.00		1.00		0.91		0.91	
Frpb, ped/bikes	1.00		0.98		0.96		1.00		1.00		1.00	
Flpb, ped/bikes	0.98		1.00		1.00		1.00		1.00		1.00	
FrT	1.00		0.85		0.86		1.00		1.00		1.00	
FlT Protected	0.95		1.00		1.00		0.95		1.00		1.00	
Satd. Flow (prot)	1650		1311		992		1573		4711		4881	
FlT Permitted	0.75		1.00		1.00		0.08		1.00		1.00	
Satd. Flow (perm)	1311		1311		992		125		4711		4881	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	0	85	0	0	5	16	1479	0	0	2064	11
RTOR Reduction (vph)	0	0	35	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	21	0	50	0	1	0	16	1479	0	0	2075	0
Confl. Peds. (#/hr)	20		5	5		20	10		10	10		10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	0%	0%	13%	50%	0%	57%	7%	7%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	13	0	0	0	0
Turn Type	Perm		Perm		NA		Perm		NA		NA	
Protected Phases					8				2			6
Permitted Phases	4		4	8			2					
Actuated Green, G (s)	12.0		12.0		12.0		85.0	85.0			85.0	
Effective Green, g (s)	13.0		13.0		13.0		86.0	86.0			86.0	
Actuated g/C Ratio	0.12		0.12		0.12		0.78	0.78			0.78	
Clearance Time (s)	6.0		6.0		6.0		7.0	7.0			7.0	
Vehicle Extension (s)	3.0		3.0		3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	154		154		117		97	3683			3816	
v/s Ratio Prot					0.00			0.31			c0.43	
v/s Ratio Perm	0.02		c0.04				0.13					
v/c Ratio	0.14		0.32		0.01		0.16	0.40			0.54	
Uniform Delay, d1	43.5		44.5		42.8		3.0	3.8			4.6	
Progression Factor	1.00		1.00		1.00		1.00	1.00			0.85	
Incremental Delay, d2	0.4		1.2		0.0		3.6	0.3			0.5	
Delay (s)	43.9		45.7		42.8		6.6	4.1			4.4	
Level of Service	D		D		D		A	A			A	
Approach Delay (s)		45.3			42.8			4.2			4.4	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		5.5			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.52										
Actuated Cycle Length (s)		110.0			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		76.0%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

FT AM 2:42 pm 07-18-2022

Synchro 11 Report
Page 3

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Jane Osler Blvd

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	5	0	1390	2005	15
Future Volume (Veh/h)	15	5	0	1390	2005	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	16	5	0	1479	2133	16
Pedestrians	10					
Lane Width (m)	3.0					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				331	68	
pX, platoon unblocked	0.84	0.84	0.84			
vC, conflicting volume	2644	729	2159			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2281	0	1702			
tC, single (s)	*6.0	*6.0	4.1			
tC, 2 stage (s)						
tF (s)	*3.0	*3.0	2.2			
p0 queue free %	68	99	100			
cM capacity (veh/h)	50	997	315			
Direction, Lane #						
Volume Total	21	0	493	493	493	853
Volume Left	16	0	0	0	0	0
Volume Right	5	0	0	0	0	0
eSH	64	1700	1700	1700	1700	1700
Volume to Capacity	0.33	0.00	0.29	0.29	0.29	0.50
Queue Length 95th (m)	9.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	86.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	86.1	0.0				0.0
Approach LOS	F					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			49.1%		ICU Level of Service	A
Analysis Period (min)			15			
* User Entered Value						

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HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Cartwright Avenue

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↔	↔	↔	↕	↕	↕	
Traffic Volume (veh/h)	10	25	10	1345	1925	85	
Future Volume (Veh/h)	10	25	10	1345	1925	85	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	11	27	11	1446	2070	91	
Pedestrians	10						
Lane Width (m)	3.0						
Walking Speed (m/s)	1.2						
Percent Blockage	1						
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (m)				242	156		
pX, platoon unblocked	0.85	0.85	0.85				
vC, conflicting volume	2870	746	2171				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2586	90	1765				
tC, single (s)	*6.0	*6.0	4.3				
tC, 2 stage (s)							
tF (s)	*3.0	*3.0	2.3				
p0 queue free %	66	97	96				
cM capacity (veh/h)	32	906	275				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	38	11	723	723	828	828	505
Volume Left	11	11	0	0	0	0	0
Volume Right	27	0	0	0	0	0	91
sSH	101	275	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.04	0.43	0.43	0.49	0.49	0.30
Queue Length 95th (m)	12.1	1.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	60.4	18.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C					
Approach Delay (s)	60.4	0.1			0.0		
Approach LOS	F						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			49.1%		ICU Level of Service		A
Analysis Period (min)			15				
* User Entered Value							

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Queues
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

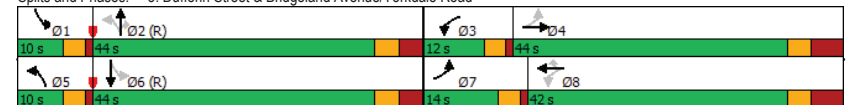
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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↕	↕	↕	↕
Traffic Volume (vph)	240	125	425	565	285	25	1325	75	25	675
Future Volume (vph)	240	125	425	565	285	25	1325	75	25	675
Lane Group Flow (vph)	242	156	429	571	288	25	1338	76	25	894
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	7.0	6.0	7.0	7.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	10.0	42.5	10.0	42.5	42.5	10.0	36.5	36.5	10.0	36.5
Total Split (s)	14.0	44.0	12.0	42.0	42.0	10.0	44.0	44.0	10.0	44.0
Total Split (%)	12.7%	40.0%	10.9%	38.2%	38.2%	9.1%	40.0%	40.0%	9.1%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0	3.3
All-Red Time (s)	1.0	4.5	1.0	4.5	4.5	1.0	3.2	3.2	1.0	3.2
Lost Time Adjust (s)	-3.0	-1.0	-1.0	-1.0	-1.0	-1.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	1.0	6.5	3.0	6.5	6.5	3.0	4.5	5.5	3.0	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.96	0.27	0.79	0.98	0.51	0.13	0.96	0.13	0.17	0.69
Control Delay	74.3	25.8	36.4	70.4	16.9	15.7	47.0	3.3	18.8	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	25.8	36.4	70.4	16.9	15.7	47.0	3.3	18.8	31.2
Queue Length 50th (m)	38.6	23.3	65.6	127.2	22.8	3.1	~167.5	1.0	3.0	89.4
Queue Length 95th (m)	#89.4	40.6	#103.6	#200.0	49.7	m6.1	#198.8	3.1	8.0	114.6
Internal Link Dist (m)		181.3		133.3			102.7			152.9
Turn Bay Length (m)	75.0		65.0			170.0			125.0	
Base Capacity (vph)	253	576	540	583	567	187	1389	592	150	1292
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	0.96	0.27	0.79	0.98	0.51	0.13	0.96	0.13	0.17	0.69

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 - Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Dufferin Street & Bridgeland Avenue/Yorkdale Road



HCM Signalized Intersection Capacity Analysis
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	240	125	30	425	565	285	25	1325	75	25	675	210
Future Volume (vph)	240	125	30	425	565	285	25	1325	75	25	675	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	1.0	6.5		3.0	6.5	6.5	3.0	4.5	5.5	3.0	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	*1.00	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1583	1668		1652	1807	1432	1415	3512	1336	1452	3281	
Flt Permitted	0.11	1.00		0.66	1.00	1.00	0.17	1.00	1.00	0.10	1.00	
Satd. Flow (perm)	174	1668		1144	1807	1432	254	3512	1336	150	3281	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	242	126	30	429	571	288	25	1338	76	25	682	212
RTOR Reduction (vph)	0	8	0	0	0	105	0	0	48	0	26	0
Lane Group Flow (vph)	242	148	0	429	571	183	25	1338	28	25	868	0
Confl. Peds. (#/hr)	10					10	10		5	5		10
Confl. Bikes (#/hr)									5			
Heavy Vehicles (%)	12%	9%	11%	2%	4%	3%	19%	7%	9%	16%	4%	4%
Bus Blockages (#/hr)	0	0	3	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			2	6	
Actuated Green, G (s)	46.5	36.5		42.5	34.5	34.5	43.5	39.9	39.9	43.5	39.9	
Effective Green, g (s)	51.5	37.5		44.5	35.5	35.5	45.5	41.9	40.9	45.5	40.9	
Actuated g/C Ratio	0.47	0.34		0.40	0.32	0.32	0.41	0.38	0.37	0.41	0.37	
Clearance Time (s)	4.0	7.5		4.0	7.5	7.5	4.0	6.5	6.5	4.0	6.5	
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)	247	568		504	583	462	153	1337	496	116	1219	
v/s Ratio Prot	c0.12	0.09		0.07	c0.32		0.01	c0.38		c0.01	0.26	
v/s Ratio Perm	0.34			0.27		0.13	0.06		0.02	0.08		
v/c Ratio	0.98	0.26		0.85	0.98	0.40	0.16	1.00	0.06	0.22	0.71	
Uniform Delay, d1	30.9	26.2		28.1	36.9	28.9	21.0	34.0	22.2	25.2	29.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.87	0.89	2.89	1.00	1.00	
Incremental Delay, d2	50.9	0.2		13.0	31.7	0.6	0.5	24.1	0.2	0.9	3.6	
Delay (s)	81.8	26.5		41.1	68.5	29.5	18.8	54.4	64.3	26.1	33.1	
Level of Service	F	C		D	E	C	B	D	E	C	C	
Approach Delay (s)		60.1			50.7			54.3			32.9	
Approach LOS		E			D			D			C	
Intersection Summary												
HCM 2000 Control Delay	48.9			HCM 2000 Level of Service			D					
HCM 2000 Volume to Capacity ratio	0.97											
Actuated Cycle Length (s)	110.0			Sum of lost time (s)			18.0					
Intersection Capacity Utilization	92.2%			ICU Level of Service			F					
Analysis Period (min)	15											
c Critical Lane Group												

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HCM Unsignalized Intersection Capacity Analysis
6: 3450 Dufferin St & Bridgeland Avenue

08-10-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	370	5	10	790	10	25
Future Volume (Veh/h)	370	5	10	790	10	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	402	5	11	859	11	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)	205					
pX, platoon unblocked	0.69					
vC, conflicting volume	407		1286		404	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	407		1190		404	
tC, single (s)	4.7		6.4		6.2	
tC, 2 stage (s)						
tF (s)	2.7		3.5		3.3	
p0 queue free %	99		92		96	
cM capacity (veh/h)	898		143		651	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	407	870	38			
Volume Left	0	11	11			
Volume Right	5	0	27			
cSH	1700	898	321			
Volume to Capacity	0.24	0.01	0.12			
Queue Length 95th (m)	0.0	0.3	3.2			
Control Delay (s)	0.0	0.3	17.7			
Lane LOS	A		C			
Approach Delay (s)	0.0	0.3	17.7			
Approach LOS	C					
Intersection Summary						
Average Delay	0.7					
Intersection Capacity Utilization	59.6%		ICU Level of Service		B	
Analysis Period (min)	15					

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HCM Unsignalized Intersection Capacity Analysis

1: Dufferin Street & Highway 401 EB Off-Ramp/Yorkdale Mall Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗		↕↕↕	↗		↕↕↕	
Traffic Volume (veh/h)	0	0	620	0	0	140	0	1400	55	0	1300	0
Future Volume (Veh/h)	0	0	620	0	0	140	0	1400	55	0	1300	0
Sign Control	Yield				Stop		Free				Free	
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)	0	0	653	0	0	147	0	1474	58	0	1368	0
Pedestrians	20				15							
Lane Width (m)	3.0				3.0							
Walking Speed (m/s)	1.2				1.2							
Percent Blockage	1				1							
Right turn flare (veh)												
Median type							None				None	
Median storage (veh)												
Upstream signal (m)							92				127	
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1879	2877	476	2598	2877	506	1388			1489		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1568	2684	476	2372	2684	32	1388			1132		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	0	0	100	84	100			100		
cM capacity (veh/h)	56	19	530	0	19	920	493			553		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3			
Volume Total	653	147	491	491	491	58	456	456	456			
Volume Left	0	0	0	0	0	0	0	0	0			
Volume Right	653	147	0	0	0	58	0	0	0			
sSH	530	920	1700	1700	1700	1700	1700	1700	1700			
Volume to Capacity	1.23	0.16	0.29	0.29	0.29	0.03	0.27	0.27	0.27			
Queue Length 95th (m)	200.7	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Control Delay (s)	144.2	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Lane LOS	F	A										
Approach Delay (s)	144.2	9.7	0.0									
Approach LOS	F	A										
Intersection Summary												
Average Delay			25.8									
Intersection Capacity Utilization			70.2%		ICU Level of Service						C	
Analysis Period (min)			15									

Queues

2: Dufferin Street & Honda Access

08-10-2022

Lane Group	EBL	EBR	WBT	NBL	NBT	SBT
Lane Configurations	↗	↗	↕	↗	↕↕↕	↕↕↕
Traffic Volume (vph)	10	45	0	45	1440	1890
Future Volume (vph)	10	45	0	45	1440	1890
Lane Group Flow (vph)	10	47	5	47	1500	2000
Turn Type	Perm	Perm	NA	Perm	NA	NA
Protected Phases			8		2	
Permitted Phases	4	4			2	
Detector Phase	4	4	8	2	2	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	23.0	23.0	23.0
Minimum Split (s)	38.0	38.0	38.0	30.0	30.0	30.0
Total Split (s)	38.0	38.0	38.0	72.0	72.0	72.0
Total Split (%)	34.5%	34.5%	34.5%	65.5%	65.5%	65.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Min	C-Min	C-Min
v/c Ratio	0.05	0.18	0.03	0.43	0.40	0.52
Control Delay	31.4	12.9	0.2	28.3	7.4	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	31.4	12.9	0.2	28.3	7.4	5.5
Queue Length 50th (m)	2.2	1.5	0.0	2.0	23.0	25.6
Queue Length 95th (m)	5.8	10.1	0.0	#27.5	79.4	64.5
Internal Link Dist (m)			78.5		44.1	67.7
Turn Bay Length (m)	40.0					
Base Capacity (vph)	399	437	294	109	3746	3867
Starvation Cap Reductn	0	0	0	0	0	514
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.11	0.02	0.43	0.40	0.60
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
# 95th percentile volume exceeds capacity, queue may be longer.						
Queue shown is maximum after two cycles.						

Splits and Phases: 2: Dufferin Street & Honda Access



HCM Signalized Intersection Capacity Analysis
2: Dufferin Street & Honda Access

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	[Diagrammatic Lane Configurations]											
Traffic Volume (vph)	10	0	45	0	0	5	45	1440	0	0	1890	30
Future Volume (vph)	10	0	45	0	0	5	45	1440	0	0	1890	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.5	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5
Total Lost time (s)	5.0 5.0 5.0 6.0 6.0 6.0											
Lane Util. Factor	1.00 1.00 1.00 1.00 1.00 1.00 0.91 0.91 0.91											
Frbp, ped/bikes	1.00 0.94 0.98 1.00 1.00 1.00											
Flpb, ped/bikes	0.99 1.00 1.00 1.00 1.00 1.00											
Frt	1.00 0.85 0.86 1.00 1.00 1.00											
Fit Protected	0.95 1.00 1.00 0.95 1.00 1.00											
Satd. Flow (prot)	1676 1366 888 1681 4860 5013											
Fit Permitted	0.75 1.00 1.00 0.08 1.00 1.00											
Satd. Flow (perm)	1331 1366 888 141 4860 5013											
Peak-hour factor, PHF	0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96											
Adj. Flow (vph)	10 0 47 0 0 5 47 1500 0 0 1969 31											
RTOR Reduction (vph)	0 0 34 0 4 0 0 0 0 0 1 0											
Lane Group Flow (vph)	10 0 13 0 1 0 47 1500 0 0 1999 0											
Confl. Peds. (#/hr)	5 45 45 5 20 10 10 20											
Heavy Vehicles (%)	0% 0% 4% 100% 0% 80% 0% 3% 0% 0% 2% 0%											
Bus Blockages (#/hr)	0 0 0 0 0 0 0 18 0 0 0 0											
Turn Type	Perm Perm NA Perm NA NA											
Protected Phases	8 2 6											
Permitted Phases	4 4 8 2											
Actuated Green, G (s)	15.6 15.6 15.6 81.4 81.4 81.4											
Effective Green, g (s)	16.6 16.6 16.6 82.4 82.4 82.4											
Actuated g/C Ratio	0.15 0.15 0.15 0.75 0.75 0.75											
Clearance Time (s)	6.0 6.0 6.0 7.0 7.0 7.0											
Vehicle Extension (s)	3.0 3.0 3.0 3.0 3.0 3.0											
Lane Grp Cap (vph)	200 206 134 105 3640 3755											
v/s Ratio Prot	0.00 0.33 c0.40											
v/s Ratio Perm	0.01 0.06 0.01 0.45 0.41 0.53											
v/c Ratio	0.05 0.06 0.01 0.45 0.41 0.53											
Uniform Delay, d1	40.0 40.0 39.7 5.2 5.0 5.8											
Progression Factor	1.00 1.00 1.00 1.00 1.00 0.62											
Incremental Delay, d2	0.1 0.1 0.0 13.2 0.3 0.5											
Delay (s)	40.1 40.2 39.7 18.4 5.4 4.0											
Level of Service	D D D B A A											
Approach Delay (s)	40.1 39.7 5.8 4.0											
Approach LOS	D D A A											
Intersection Summary												
HCM 2000 Control Delay	5.4 HCM 2000 Level of Service A											
HCM 2000 Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	110.0 Sum of lost time (s) 12.0											
Intersection Capacity Utilization	81.7% ICU Level of Service D											
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
3: Dufferin Street & Jane Osler Blvd

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	[Diagrammatic Lane Configurations]							
Traffic Volume (veh/h)	35	5	5	1445	1920	15		
Future Volume (Veh/h)	35	5	5	1445	1920	15		
Sign Control	Stop Free Free							
Grade	0% 0% 0%							
Peak Hour Factor	0.95 0.95 0.95 0.95 0.95 0.95							
Hourly flow rate (vph)	37 5 5 1521 2021 16							
Pedestrians	30							
Lane Width (m)	3.0							
Walking Speed (m/s)	1.2							
Percent Blockage	2							
Right turn flare (veh)								
Median type	None None							
Median storage (veh)								
Upstream signal (m)	331 68							
pX, platoon unblocked	0.83 0.83 0.83							
vC, conflicting volume	2576 712 2067							
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2187 0 1574							
tC, single (s)	*6.0 *6.0 4.1							
tC, 2 stage (s)								
tF (s)	*3.0 *3.0 2.2							
p0 queue free %	32 99 99							
cM capacity (veh/h)	55 977 345							
Direction, Lane #								
Volume Total	EB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Left	42	5	507	507	507	808	808	420
Volume Right	37	5	0	0	0	0	0	0
eSH	5	0	0	0	0	0	0	16
Volume to Capacity	62	345	1700	1700	1700	1700	1700	1700
Queue Length 95th (m)	0.68	0.01	0.30	0.30	0.30	0.48	0.48	0.25
Control Delay (s)	23.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	143.5	15.6	0.0	0.0	0.0	0.0	0.0	0.0
Approach Delay (s)	F	C						
Approach LOS	143.5	0.1	0.0					
Intersection Summary								
Average Delay	1.7							
Intersection Capacity Utilization	47.5% ICU Level of Service A							
Analysis Period (min)	15							
* User Entered Value								

HCM Unsignalized Intersection Capacity Analysis
4: Dufferin Street & Cartwright Avenue

08-10-2022

Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↔	↔	↔	↕	↕	↔	
Traffic Volume (veh/h)	45	95	5	1175	1890	35	
Future Volume (Veh/h)	45	95	5	1175	1890	35	
Sign Control	Stop			Free	Free		
Grade	0%			0%	0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	46	98	5	1211	1948	36	
Pedestrians	30						
Lane Width (m)	3.0						
Walking Speed (m/s)	1.2						
Percent Blockage	2						
Right turn flare (veh)							
Median type				None	None		
Median storage (veh)							
Upstream signal (m)				242	156		
pX, platoon unblocked	0.85	0.85	0.85				
vC, conflicting volume	2612	697	2014				
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2283	36	1582				
tC, single (s)	*6.0	*6.0	4.1				
tC, 2 stage (s)							
tF (s)	*3.0	*3.0	2.2				
p0 queue free %	6	90	99				
cM capacity (veh/h)	49	957	352				
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	144	5	606	606	779	779	426
Volume Left	46	5	0	0	0	0	0
Volume Right	98	0	0	0	0	0	36
sSH	139	352	1700	1700	1700	1700	1700
Volume to Capacity	1.04	0.01	0.36	0.36	0.46	0.46	0.25
Queue Length 95th (m)	61.6	0.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	150.3	15.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C					
Approach Delay (s)	150.3	0.1			0.0		
Approach LOS	F						
Intersection Summary							
Average Delay			6.5				
Intersection Capacity Utilization			52.3%		ICU Level of Service		A
Analysis Period (min)			15				
* User Entered Value							

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Synchro 11 Report
Page 5

Queues
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

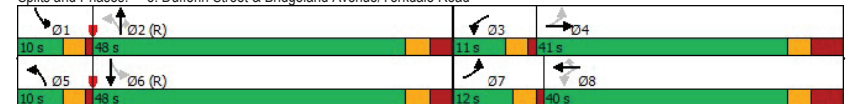
08-10-2022

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	350	205	335	340	475	15	1475	50	50	950
Future Volume (vph)	350	205	335	340	475	15	1475	50	50	950
Lane Group Flow (vph)	361	226	345	351	490	15	1521	52	52	1206
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	7.0	6.0	7.0	7.0	6.0	30.0	30.0	6.0	30.0
Minimum Split (s)	10.0	42.5	10.0	42.5	42.5	10.0	36.5	36.5	10.0	36.5
Total Split (s)	12.0	41.0	11.0	40.0	40.0	10.0	48.0	48.0	10.0	48.0
Total Split (%)	10.9%	37.3%	10.0%	36.4%	36.4%	9.1%	43.6%	43.6%	9.1%	43.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0	3.3
All-Red Time (s)	1.0	4.5	1.0	4.5	4.5	1.0	3.2	3.2	1.0	3.2
Lost Time Adjust (s)	-2.5	-1.0	-1.0	-1.0	-1.0	-1.0	-3.0	-1.0	-1.0	-1.0
Total Lost Time (s)	1.5	6.5	3.0	6.5	6.5	3.0	3.5	5.5	3.0	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min
v/c Ratio	0.93	0.39	0.77	0.63	0.98	0.12	0.98	0.08	0.30	0.81
Control Delay	56.3	31.7	38.3	39.0	63.7	14.5	44.3	0.3	18.9	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	31.7	38.3	39.0	63.7	14.5	44.3	0.3	18.9	32.5
Queue Length 50th (m)	54.0	39.3	53.2	68.2	83.9	1.7	~183.1	0.2	5.9	110.6
Queue Length 95th (m)	#109.5	61.7	#86.1	100.3	#155.2	m3.2	#223.8	0.0	12.6	#178.3
Internal Link Dist (m)		181.3		133.3			102.7			152.9
Turn Bay Length (m)	75.0		65.0			170.0			125.0	
Base Capacity (vph)	388	573	446	555	500	129	1557	638	172	1486
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	0.93	0.39	0.77	0.63	0.98	0.12	0.98	0.08	0.30	0.81

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Dufferin Street & Bridgeland Avenue/Yorkdale Road



HCM Signalized Intersection Capacity Analysis
5: Dufferin Street & Bridgeland Avenue/Yorkdale Road

08-10-2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	350	205	15	335	340	475	15	1475	50	50	950	220
Future Volume (vph)	350	205	15	335	340	475	15	1475	50	50	950	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.5	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.5
Total Lost time (s)	1.5	6.5		3.0	6.5	6.5	3.0	3.5	5.5	3.0	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	*1.00	1.00	1.00	0.95	
Frbp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Fit Protected	1.00	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1756	1823		1659	1824	1322	1248	3684	1396	1685	3333	
Fit Permitted	0.35	1.00		0.56	1.00	1.00	0.09	1.00	1.00	0.09	1.00	
Satd. Flow (perm)	617	1823		971	1824	1322	120	3684	1396	154	3333	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	361	211	15	345	351	490	15	1521	52	52	979	227
RTOR Reduction (vph)	0	2	0	0	0	98	0	0	31	0	17	0
Lane Group Flow (vph)	361	224	0	345	351	392	15	1521	21	52	1189	0
Confl. Peds. (#/hr)			15	15			20					20
Heavy Vehicles (%)	1%	2%	0%	1%	3%	14%	35%	2%	8%	0%	3%	3%
Bus Blockages (#/hr)	0	0	3	0	0	0	0	0	0	0	0	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2		2	6		
Actuated Green, G (s)	41.5	33.5		39.5	32.5	32.5	45.1	42.7	42.7	49.9	45.1	
Effective Green, g (s)	46.5	34.5		41.5	33.5	33.5	47.1	45.7	43.7	51.9	46.1	
Actuated g/C Ratio	0.42	0.31		0.38	0.30	0.30	0.43	0.42	0.40	0.47	0.42	
Clearance Time (s)	4.0	7.5		4.0	7.5	7.5	4.0	6.5	6.5	4.0	6.5	
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)	369	571		416	555	402	86	1530	554	153	1396	
v/s Ratio Prot	c0.09	0.12		0.06	0.19		0.01	c0.41		c0.02	0.36	
v/s Ratio Perm	0.32			0.25		c0.30	0.07		0.01	0.14		
v/c Ratio	0.98	0.39		0.83	0.63	0.97	0.17	0.99	0.04	0.34	0.85	
Uniform Delay, d1	29.4	29.5		30.1	32.9	37.8	21.7	32.0	20.3	24.1	28.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.90	0.81	1.00	1.00	1.00	
Incremental Delay, d2	40.6	0.4		12.8	2.4	38.0	0.9	21.1	0.1	1.3	6.7	
Delay (s)	70.0	30.0		42.9	35.3	75.8	20.4	46.9	20.4	25.5	35.6	
Level of Service	E	C		D	D	E	C	D	C	C	D	
Approach Delay (s)		54.6			54.2			45.8			35.2	
Approach LOS		D			D			D			D	
Intersection Summary												
HCM 2000 Control Delay	46.2		HCM 2000 Level of Service				D					
HCM 2000 Volume to Capacity ratio	0.97											
Actuated Cycle Length (s)	110.0		Sum of lost time (s)				18.0					
Intersection Capacity Utilization	101.7%		ICU Level of Service				G					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: 3450 Dufferin St & Bridgeland Avenue

08-10-2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↔	↔	↔
Traffic Volume (veh/h)	550	10	15	560	5	20
Future Volume (Veh/h)	550	10	15	560	5	20
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)	573	10	16	583	5	21
Pedestrians					20	
Lane Width (m)					3.0	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)				205		
pX, platoon unblocked					0.83	
vC, conflicting volume			603		1213	598
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			603		1156	598
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			98		97	95
cM capacity (veh/h)			971		177	456
Direction, Lane #						
Volume Total	583	599	26			
Volume Left	0	16	5			
Volume Right	10	0	21			
sSH	1700	971	350			
Volume to Capacity	0.34	0.02	0.07			
Queue Length 95th (m)	0.0	0.4	1.9			
Control Delay (s)	0.0	0.4	16.1			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.4	16.1			
Approach LOS			C			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			51.5%		ICU Level of Service	
Analysis Period (min)	15					
A						