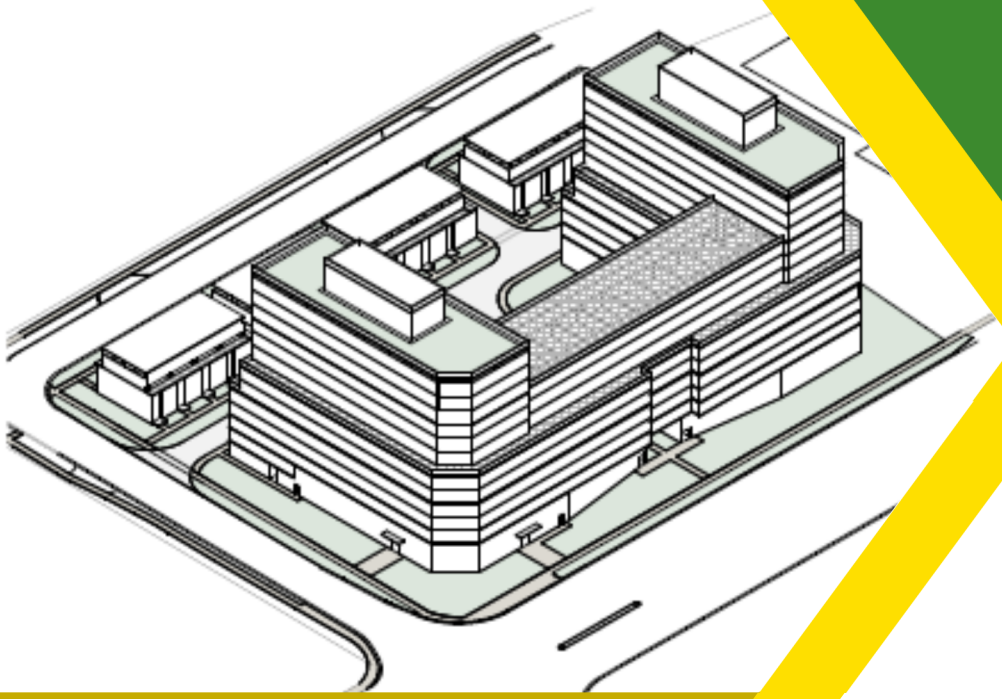
Whitehorn Investments Limited

Dundix Realty Holdings

1225 Dundas Street East



Transportation Impact Study

CGH TRANSPORTATION

1225 Dundas Street East
Transportation Impact Study

Prepared for:

Whitehorn Investments Limited

Dundix Realty Holdings

c/o SmartCentres REIT

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June 2022

PN: 2022-050

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1. Introduction

This Transportation Impact Study (TIS) has been prepared to support the proposed development at 1225 Dundas Street East in the City of Mississauga. The scope of this TIA has been confirmed with staff from both the City of Mississauga and the Region of Peel in the forms of a Terms of Reference (TOR) document which can be seen in Appendix A.

The existing site, located at 1225 Dundas Street East, is zoned as Commercial Zone (C3). The proposed development includes 34 townhome units and 465 condo units with a 7,271 ft^2 (675.5 m^2) ground floor retail space and will replace the existing a single-storey shopping centre. The proposed development will have two full-movement accesses located on Arena Road and Dundix Road to access the surface parking and one level of underground parking. A total of 366 underground parking spaces and 15 surface parking spaces are proposed. This site is within the Dixie GO Major Transit Station Area. For the purposes of this TIS, the projected full build-out and occupancy horizon has been assumed to be 2028. Figure 1 illustrates the site context. Figure 2 illustrates the proposed site plan.

Figure 1: Site Context

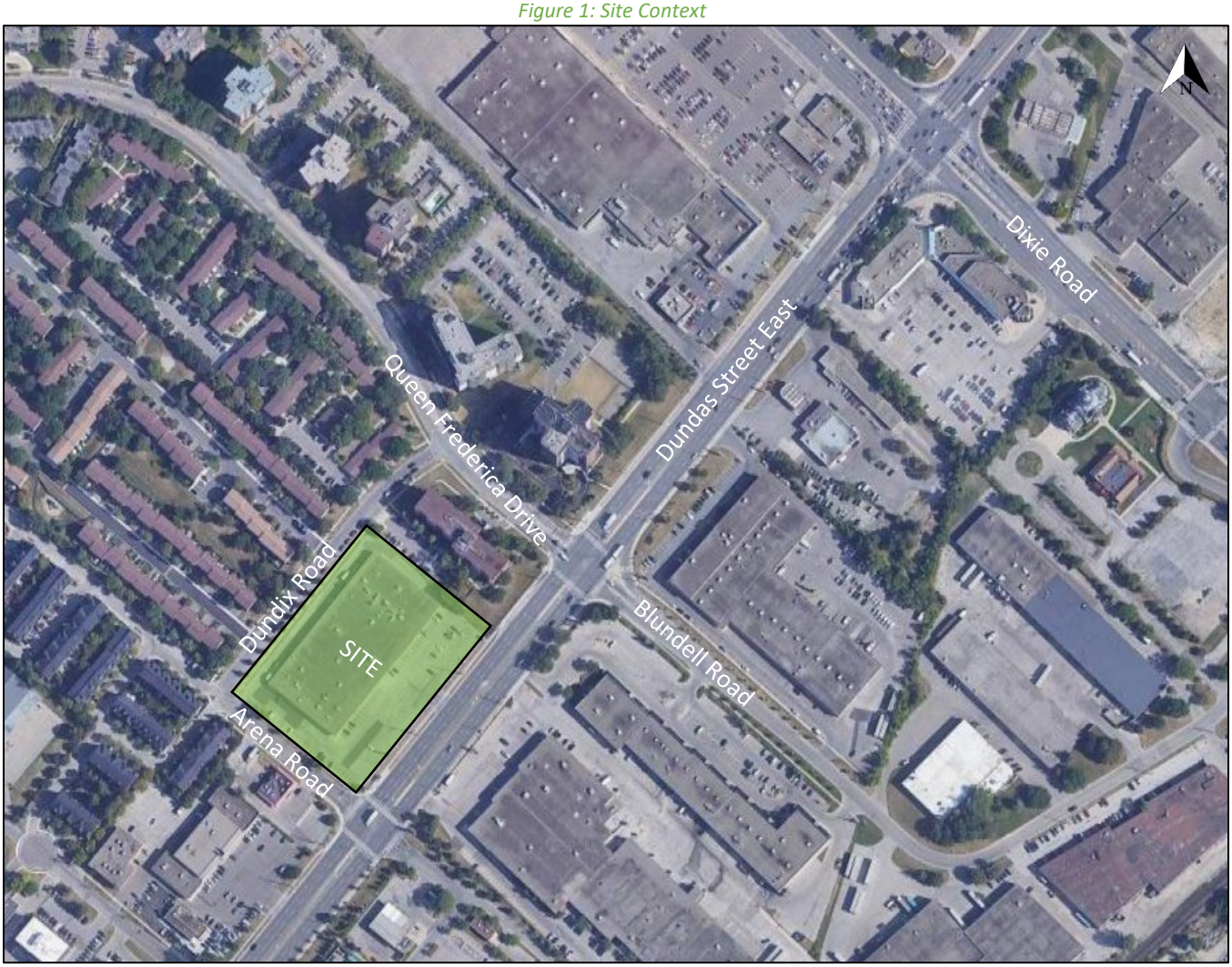
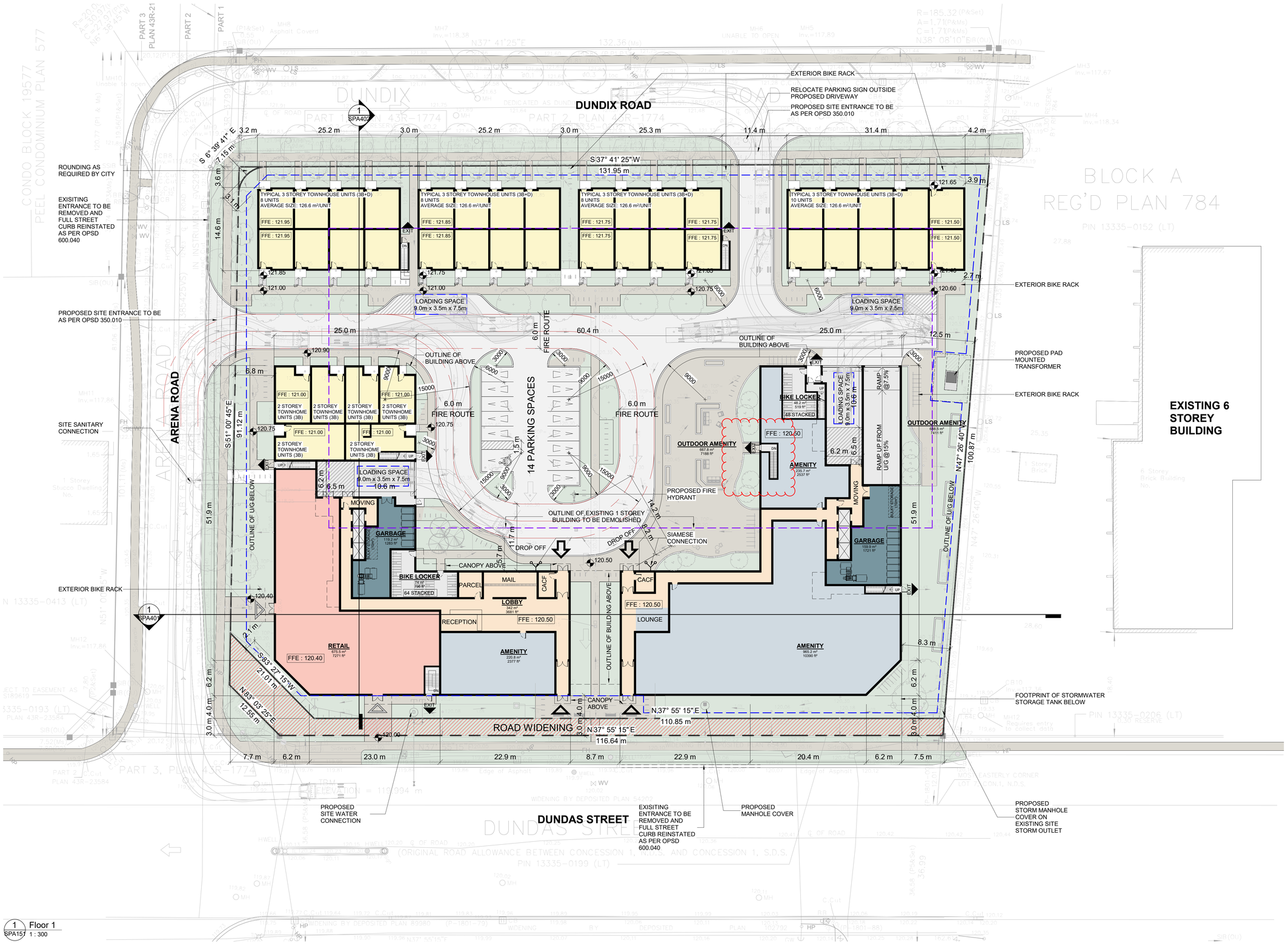


Figure 2: Concept Plan



1 Floor 1
SPA151 1 : 300

TURNER FLEISCHER

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67 Lesmill Road
Toronto, ON, M3B 2T8
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This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of buildings or site improvements that have been constructed or installed prior to this drawing. The appropriate consultant's drawings before proceeding with the work. Construction must conform to all applicable codes and requirements of authorities having jurisdiction. The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from his work.

LEGEND

- PRIMARY RESIDENTIAL ENTRANCE
- SECONDARY RESIDENTIAL ENTRANCE
- RETAIL ENTRANCE
- EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- CONVEX MIRROR
- TRANSFORMER WITH CLEARANCES
- FIRE ROUTE SIGN
- 000.00 SPOT ELEVATION
- GAS/HYDRO METER
- ROAD WIDENING

#	DATE	DESCRIPTION	BY
1	July 04, 2022	SPA Submission	

PROJECT
PROPOSED RESIDENTIAL MIXED-USE DEVELOPMENT
1225 Dundas Street E, Mississauga, ON

DRAWING
FLOOR 1

PROJECT NO. 22.117P01
PROJECT DATE
DRAWN BY WJB
CHECKED BY Checker
SCALE As indicated

DRAWING NO. SPA151 REV. 1

2022-07-05 9:57:12 AM

2. Existing Conditions

2.1 Area Road Network

Dundas Street East

Dundas Street East is a City of Mississauga arterial road with a six-lane urban cross-section. The City of Mississauga Official Plan protects a 35-metre right-of-way for this road. West of Queen Frederica Drive, a boulevard-separated sidewalk is provided on the north side of the road and a sidewalk is provided on the south side of the road. East of Queen Frederica Drive sidewalks are provided on both sides of the road. The posted speed limit is 60 km/h within the study area.

Dixie Road

Dixie Road is a City of Mississauga regional arterial road with a six-lane urban cross-section. The City of Mississauga Official Plan protects a 45-metre right-of-way for this road. North of Dundas Street East, a multi-use path is provided on the west side of the road and a sidewalk is provided on the east side of the road. South of Dundas Street East, sidewalks are provided on both sides of the road. The posted speed limit is 60 km/h within the study area.

Queen Frederica Drive

Queen Frederica Drive is a City of Mississauga minor collector road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 26 metre wide. Boulevard-separated sidewalks are provided on both sides of the road. The posted speed limit is 40 km/h within the study area.

Blundell Road

Blundell Road is a City of Mississauga minor collector road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 26 metre wide. Boulevard-separated sidewalks are provided on both sides of the road. The posted speed limit is 40 km/h within the study area.

Arena Road

Arena Road is a City of Mississauga local road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 20 metre wide. Boulevard-separated sidewalks are provided on both sides of the road south of Dundix Road and on the west side of the road north of Dundix Road. The posted speed limit is 40 km/h south of Dundix Road.

Dundix Road

Dundix Road is a City of Mississauga local road with a two-lane urban cross-section. The right-of-way of this road has been measured using the Mississauga Zoning Information Map and found to be approximately 20 metre wide. Boulevard-separated sidewalks are provided on both sides of the road. The unposted speed limit is assumed to be 40 km/h. On-street parking is permitted on the south side of the road for a maximum of 15 hours.

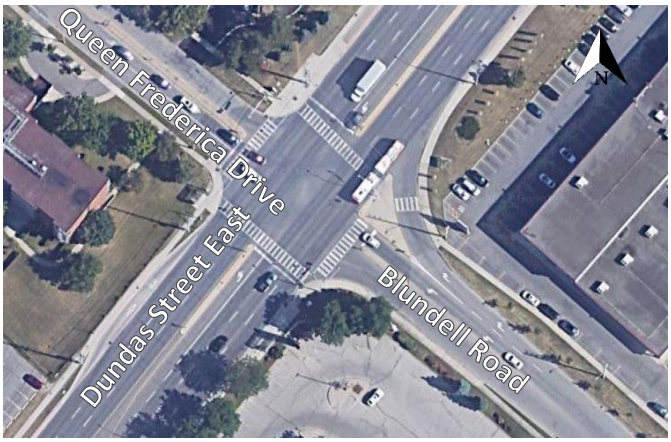
2.2 Existing Intersections

A description and accompanying aerial photographs of the existing Study Area intersections can be found below.

Dundas Street East and Dixie Road

The intersection of Dundas Street East and Dixie Road is a four-legged signalized intersection. The northbound and westbound approaches each consist of an auxiliary left-turn lane, two through lanes, and a shared through/channelized right-turn lane, and the southbound approach consists of two auxiliary left-turn lanes, three through lanes, an auxiliary channelized right-turn lane. The eastbound approach consists of an auxiliary left-turn lane, three through lanes, and an auxiliary channelized right-turn lane. Pedestrian signal heads and pedestrian call buttons are present on all legs of the intersection. No turn restrictions were noted.

Dundas Street East and Queen Frederica Drive/Blundell Road



Dundas Street East and Queen Frederica Drive/Blundell Road is a four-legged signalized intersection. The northbound approach consists of a left-turn lane and a channelized right-turn lane, and the southbound approach consists of an auxiliary left-turn lane and a shared through/right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn, two through lanes, and a shared through/right-turn lane. A bus-only taper is present on the westbound approach to the west of the intersection along Dundas Street East. Pedestrian signal heads are present on all legs with pedestrian call buttons on the east and west legs. Northbound through movement is restricted at this intersection.

Arena Road at Dundas Street East

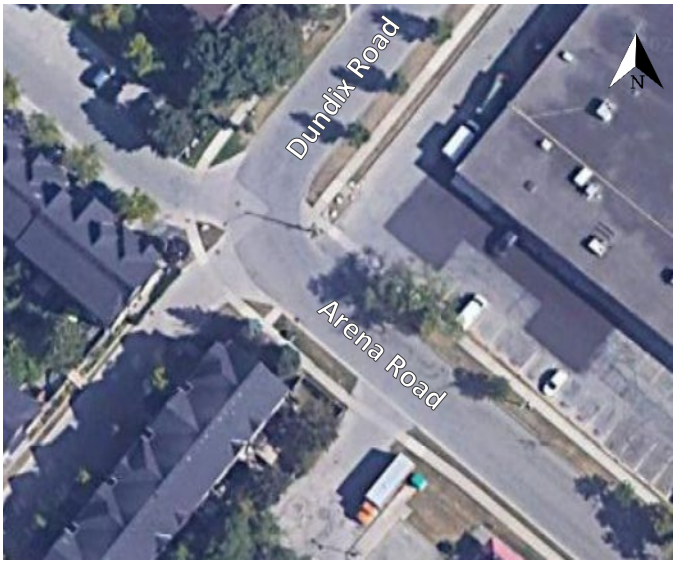
Arena Road at Dundas Street East is a four-legged signalized intersection. The northbound and southbound approaches each consist of a left-turn lane and a shared through/ right-turn lane. The eastbound and westbound approaches each consist of an auxiliary left-turn, two through lanes, and a shared through/right-turn lane. Crosswalks and pedestrian signal heads are present on all legs with pedestrian call buttons on the east and west legs. No turn restrictions were noted.

Queen Frederica Drive at Dundix Road

Queen Frederica Drive at Dundix Road is a three-legged all-way stop-controlled intersection. Each approach consists of a shared all-movement lane. No turn restrictions were noted.

Dundix Road at Arena Road

Dundix Road at Arena Road is a four-legged unsignalized intersection with free movement on the northbound and westbound approach and stop controls on the eastbound and southbound approach. Each approach consists of a shared all-movement lane. No turn restrictions were noted.



2.2.1 Existing Driveways

As the proposed development is located near residential land uses, driveways to townhouses are located on the north side of Dundix Street. One driveway to a restaurant is located on the west side of Arena Road. Multiple driveways to the retail plaza and shopping centre are located along Dundas Street East.

As part of the proposed redevelopment, existing access to 1225 Dundas Street East on Dundas Street East will be closed. Additionally, the existing access to Arena Road will be relocated and reconfigured.

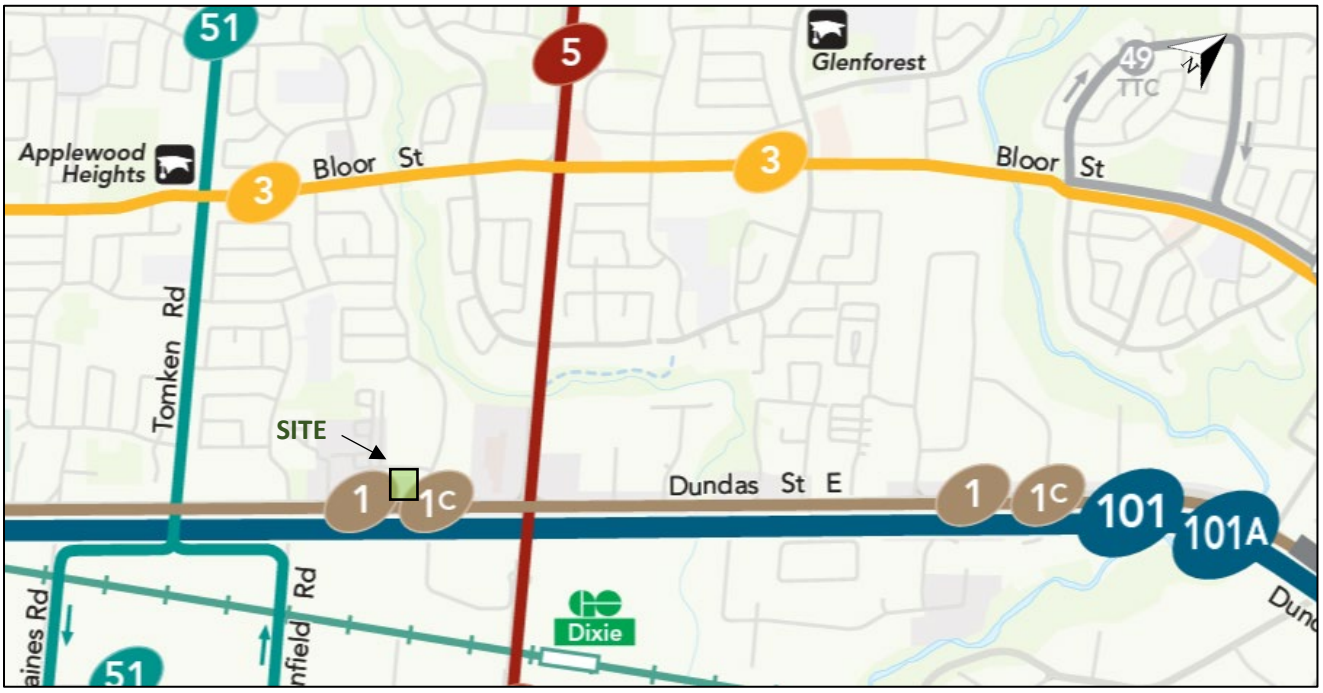
2.3 Cycling and Pedestrian Facilities

Sidewalks are located along at least one side of all roads in the Study Area, with boulevards present along portions of Dundas Street East, Queen Frederica Drive, Blundell Road, Arena Road, and Dundix Road. There is a multi-use pathway present on the west side of Dixie Road. No other bike lanes are present in the vicinity of the subject development.

2.4 Transit

As of May of 2022, MiWay routes within the Study Area include Route #1, Route #1C, Route #101 and Route #101A along Dundas Street East and Route #5 along Dixie Road. Transit destinations along Dundas Street East near the study area include Kipling Bus Terminal, Kipling Subway Station and Trillium Hospital. Transit destinations along Dixie Road include Dixie GO station, Dixie Outlet Mall, Sherway Gardens and Dixie Transitway Station. The existing Study Area MiWay service is presented in Figure 3.

Figure 3: Existing MiWay Transit Study Area Service



Source: https://web.mississauga.ca/ Accessed: May 11, 2022

2.5 Existing Peak Hour Travel Demand

To understand the existing AM and PM peak hour traffic volumes, turning movement counts (TMC) for the Study Area intersections have been acquired from the Ontario Traffic Inc. Table 1 summarizes the dates and data sources of the turning movement counts used as part of this study. Turning movement count data is included in Appendix B. Existing traffic volumes are displayed in Figure 4.

Table 1: Turning Movement Count Data Dates and Data Source

Intersection	Count Date	Data Source
Dixie Road and Dundas Street East	Tuesday, June 7, 2022	Ontario Traffic Inc.
Queen Frederica Drive/Blundell Road and Dundas Street East		
Arena Road and Dundas Street East		
Queen Frederica Drive and Dundix Road		
Arena Road and Dundix Road		

Additionally, the collected intersection counts also provided existing pedestrian and cyclist volumes at the four Study Area intersections for both AM and PM peak periods. It is noted that there is no existing cyclist volume at the study area intersections. Figure 5 illustrates the existing pedestrian volumes.

Figure 4: Existing Traffic Volumes

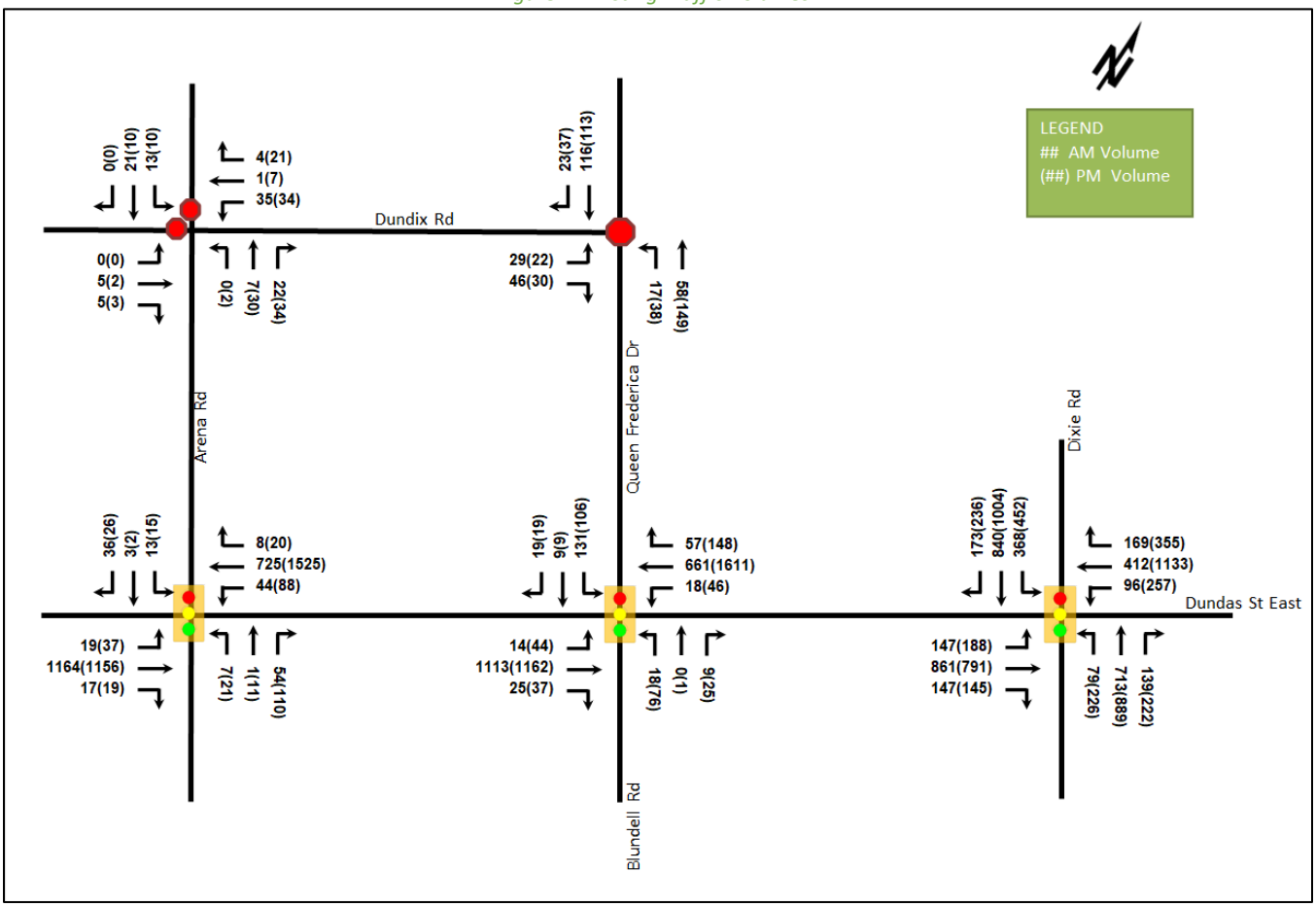
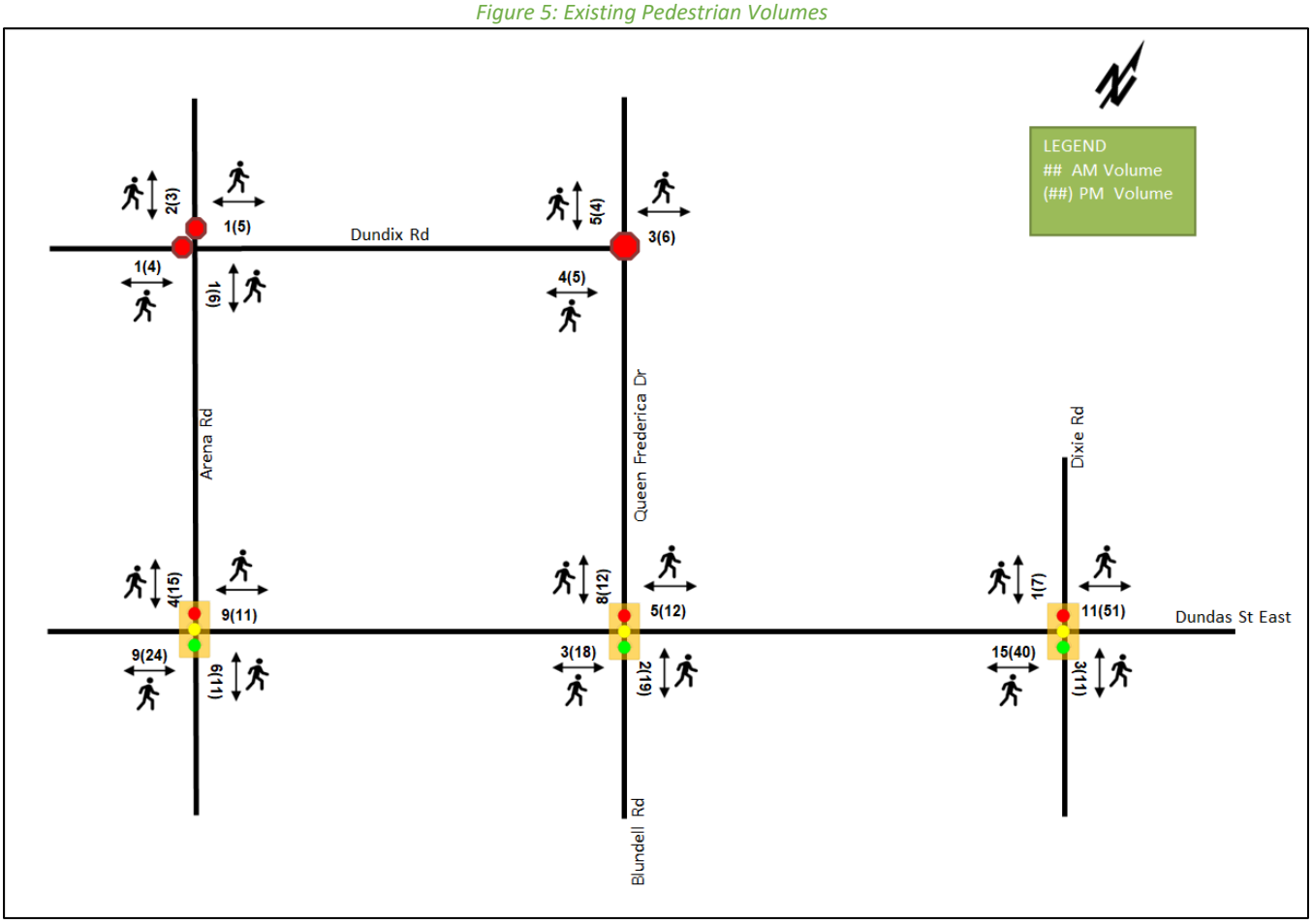


Figure 5: Existing Pedestrian Volumes



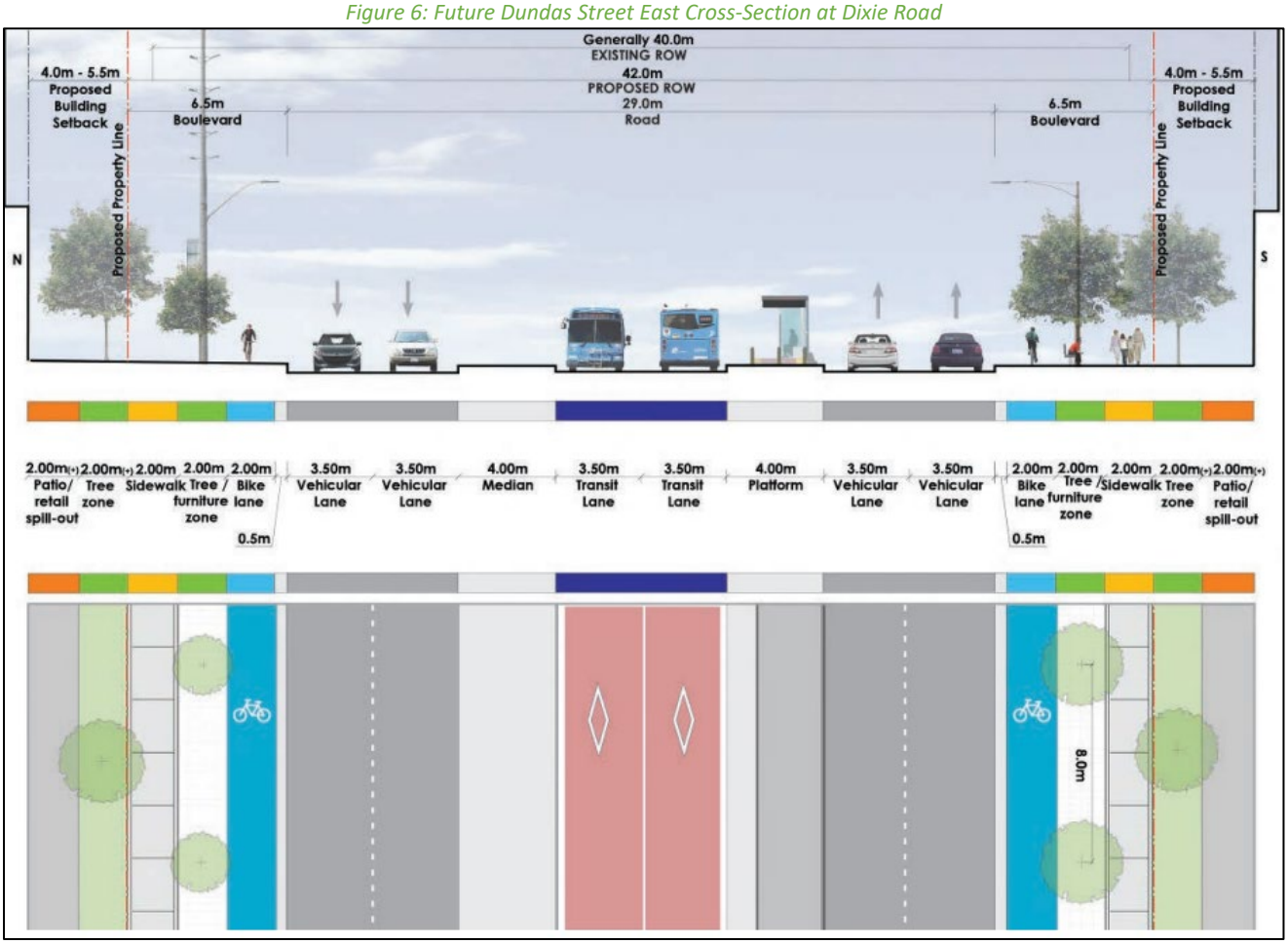
3. Future Background Conditions

3.1 Planned Conditions

3.1.1 Dundas Bus Rapid Transit

The subject development is located along the future Dundas BRT Alignment, which will enhance the mobility and transit experience along Dundas Street East. The future Dundas BRT is assumed to be build-out prior to 2027, based on the TOR comments from the City, which stated that the Dundas Street East construction commencement is anticipated to be in 2024, and the future Dundas BRT will be analyzed in the future horizons. The future geometry is based upon the preliminary detailed design from the Dundas Bus Rapid Transit Mississauga East Environmental Report (Metrolinx/City of Mississauga, 2022), and is provided in Appendix C. The closest BRT stop to the proposed development will be located at Dixie Road. Figure 6 shows the proposed Dundas Street East cross-section at Dixie Road and is an excerpt from Dundas Connects Master Plan (Mississauga, 2018).

Figure 6: Future Dundas Street East Cross-Section at Dixie Road



Source: Dundas Connects Master Plan (March 2018)

3.2 Other Study Area Developments

Several development applications were available for the adjacent properties as listed on the City's Development Application webpage. The anticipated trip generation figures for these developments are provided in Appendix D.

3085 Queen Frederica Drive

The proposed development at 3085 Queen Frederica Drive includes a condominium conversion of 73 units. No additional trips are anticipated to be generated.

2525 Dixie Road

The proposed development at 2525 Dixie Road includes a Shell gasoline station with associated convenience store (211 sq.m.), Jiffy Lube service station (159 sq.m.), and an automated carwash facility (114 sq.m.). The proposed development was analyzed with respect to a 2024 study horizon for the build-out year. The development is anticipated to generate 40 new AM and 56 new PM two-way peak hour auto trips. (WSP, 2019). These trips have been included in the background traffic projections.

3.3 Background Growth

The growth rates from the existing horizon to 2026 and from 2026 to 2027 for Dundas Street East were obtained from the City of Mississauga Transportation and Works Department. These rates are specific to the studied road segments, peak periods, and horizon years. The growth rates between 2026 and 2033 account for the expected

reduction in traffic as a result of the Dundas Street East implementation. Table 2 summarizes the projected growth rates for the Study Area.

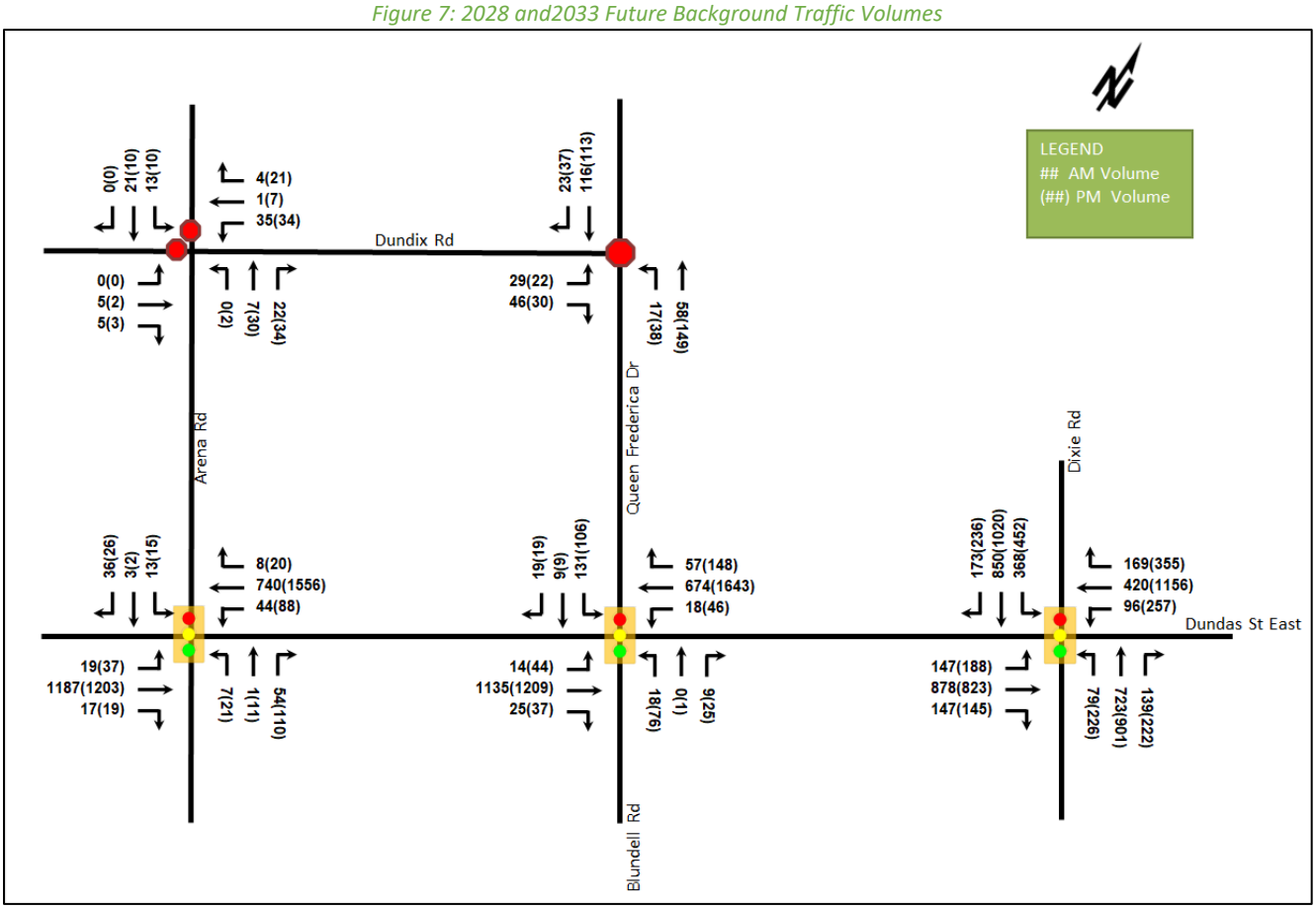
Table 2: Compounded Annual Growth Rates

Roadway	Peak Period	CAGR from Existing to 2026		CAGR from 2026 to 2033	
		EB	WB	EB	WB
Dundas Street East	AM	0.5%	1.0%	0%	0%
	PM	0.5%	0.5%	0%	0%

3.3.1 Future Background Traffic Volumes

Using the background growth rates above, the turning movement volumes were grown to reflect the 2028 and 2033 Future Background traffic volumes. Figure 7 illustrates the 2028 and 2033 Future Background traffic volumes.

Figure 7: 2028 and2033 Future Background Traffic Volumes



3.4 Trip Generation and Mode Shares

The proposed development will include 517 condo units, 34 townhome units, and 7,502 ft^2 retail spaces. The *ITE Trip Generation Manual 11th Edition* has been reviewed to determine the appropriate trip generation rate equations for the proposed land uses. To estimate person trip generation, a factor of 1.28, calculated from a default 10% non-auto mode share and an average vehicle occupancy rate of 1.15 (i.e. 1.15/0.90 = 1.28), has been applied to the vehicle trip rates. Table 3 summarizes the person trip rates for the proposed land uses.

Table 3: Trip Generation Person Trip Rates

Dwelling Type	Land Use Code	Peak Hour	Vehicle Trip Rate	Person Trip Rates
Multifamily Housing (Low-Rise)	220	AM	0.38	0.50
		PM	0.61	0.78
Multifamily Housing (High-Rise)	222	AM	0.23	0.29
		PM	0.26	0.33
Retail	822	AM	2.36	3.06
		PM	6.59	8.44

Using the above Person Trip rates, the total person trip generation has been estimated. Table 4 below illustrates the total person trip generation by land use.

Table 4: Total Person Trip Generation

Land Use	Units/GFA (sq. ft.)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Housing (Low-Rise)	34	5	12	17	16	11	27
Multifamily Housing (High-Rise)	465	45	90	135	87	66	153
Retail	7,271	13	9	22	30	31	61
Total Person Trips		**63**	**111**	**174**	**133**	**108**	**241**

The existing mode shares in the Study Area were obtained from the 2016 Transportation Tomorrow Survey (TTS). The Dundas Street East implementation is expected to increase transit mode share in the Study Area, therefore, a 6% shift to transit mode and a 2% shift to cycling mode taken from the auto mode is proposed (see Appendix E). Table 5 and Table 6 summarize the 2016 TTS mode shares and applied mode shares, respectively.

Table 5: 2016 TTS Mode Shares

Travel Mode	2016 Mode Shares (TTS)
Auto Driver	63%
Auto Passenger	16%
Transit	14%
Cycling	0%
Walking	7%
Total	**100%**

Table 6: Applied Mode Shares

Travel Mode	Applied Mode Shares
Auto Driver	55%
Auto Passenger	16%
Transit	20%
Cycling	2%
Walking	7%
Total	**100%**

Synergy is expected at the proposed development since it includes mixed-use buildings containing residential, and retail uses. Internal capture rates for both the retail and residential land uses were calculated using the methodology identified in Section 6.5 of the ITE Trip Generation Handbook 3rd Edition. The synergy trip calculation tool developed by National Cooperative Highway Research Program (NCHRP) was used and can be found in Appendix F. The rates summarized in Table 7 represent the percentage of trips to/from each use that are considered internal capture trips.

Table 7: NCHRP 684 Internal Capture Rates

Land Use	AM		PM	
	In	Out	In	Out
Residential	3%	2%	8%	4%
Retail	13%	20%	12%	28%

Pass-by reductions have been applied to the retail trip generation at a rate of 35%. This value is based on the average value in Appendix E in ITE Trip Generation Handbook 3rd Edition.

Using the above mode share targets, the internal capture and pass-by rates, and the person trip rates, the person trips by mode have been projected. Table 8 summarizes the residential trip generation and the non-residential trip generation by mode and peak hour.

Table 8: Trip Generation by Mode

Travel Mode			AM Peak Hour			PM Peak Hour		
		Mode Share	In	Out	Total	In	Out	Total
Multi-Unit (Low-Rise)	Auto Driver	55%	3	7	10	9	6	15
	Auto Passenger	16%	1	2	3	3	2	5
	Transit	20%	1	2	3	3	2	5
	Cycling	2%	0	0	0	0	0	0
	Walking	7%	0	1	1	1	1	2
	Total	**100%**	**5**	**12**	**17**	**16**	**11**	**27**
Multi-Unit (High-Rise)	Auto Driver	55%	24	49	73	45	35	80
	Auto Passenger	16%	7	14	21	13	10	23
	Transit	20%	9	18	27	16	13	29
	Cycling	2%	1	2	3	2	1	3
	Walking	7%	3	6	9	6	4	10
	Internal Capture	*varies*	-1	-1	-2	-5	-2	-7
	Total	**100%**	**44**	**89**	**133**	**82**	**64**	**146**
Retail	Auto Driver	55%	5	3	8	10	9	19
	Auto Passenger	16%	2	1	3	5	4	9
	Transit	20%	2	2	4	6	5	11
	Cycling	2%	0	0	0	1	1	2
	Walking	7%	1	1	2	2	2	4
	Internal Capture	*varies*	*-1*	*-1*	*-2*	*-2*	*-5*	*-7*
	Pass-by	*35%*	*-2*	*-1*	*-4*	*-6*	*-5*	*-11*
	Total	**100%**	**10**	**7**	**16**	**23**	**21**	**43**
Total	Auto Driver	55%	32	59	91	64	50	114
	Auto Passenger	16%	10	17	27	21	16	37
	Transit	20%	12	22	34	25	20	45
	Cycling	2%	1	2	3	3	2	5
	Walking	7%	4	8	12	9	7	16
	Total	**100%**	**59**	**108**	**167**	**121**	**96**	**217**

As shown above, 167 AM and 217 PM new peak hour two-way person trips are projected as a result of the proposed development, of which 91 AM and 114 PM trips are net new peak hour two-way vehicle trips.

3.5 Trip Distribution

Using 2016 TTS data in Appendix G, the travel patterns in the traffic analysis zone 3669 have been determined. Table 9 below summarizes the trip distribution in the vicinity of 1225 Dundas Street East.

Table 9: 2016 TTS Trip Distribution

To/From	Percent of Trips
North	30%
South	25%
East	15%
West	30%
Total	100%

3.6 Trip Assignment and Future Total Travel Demands

Using existing turning movement splits, access to major transportation infrastructure, lane configurations, and traffic controls, the major routes and their associated probability of use to and from the site have been determined for each direction in the above distribution. Using this information and the above distribution, the trips generated by the site have been assigned to the study area road network. Figure 8 illustrates the new site generated volumes, and Figure 9 illustrates the Pass-By volumes. The site generated traffic has been combined with the 2028 and 2033 Future Background traffic volumes to estimate the Future Total traffic volumes. The 2028 and 2033 Total Future traffic volumes are illustrated in Figure 10. Both horizons are presented in a single figure as no background growth is projected between 2028 and 2033.

Figure 8: New Site Generated Auto Volumes

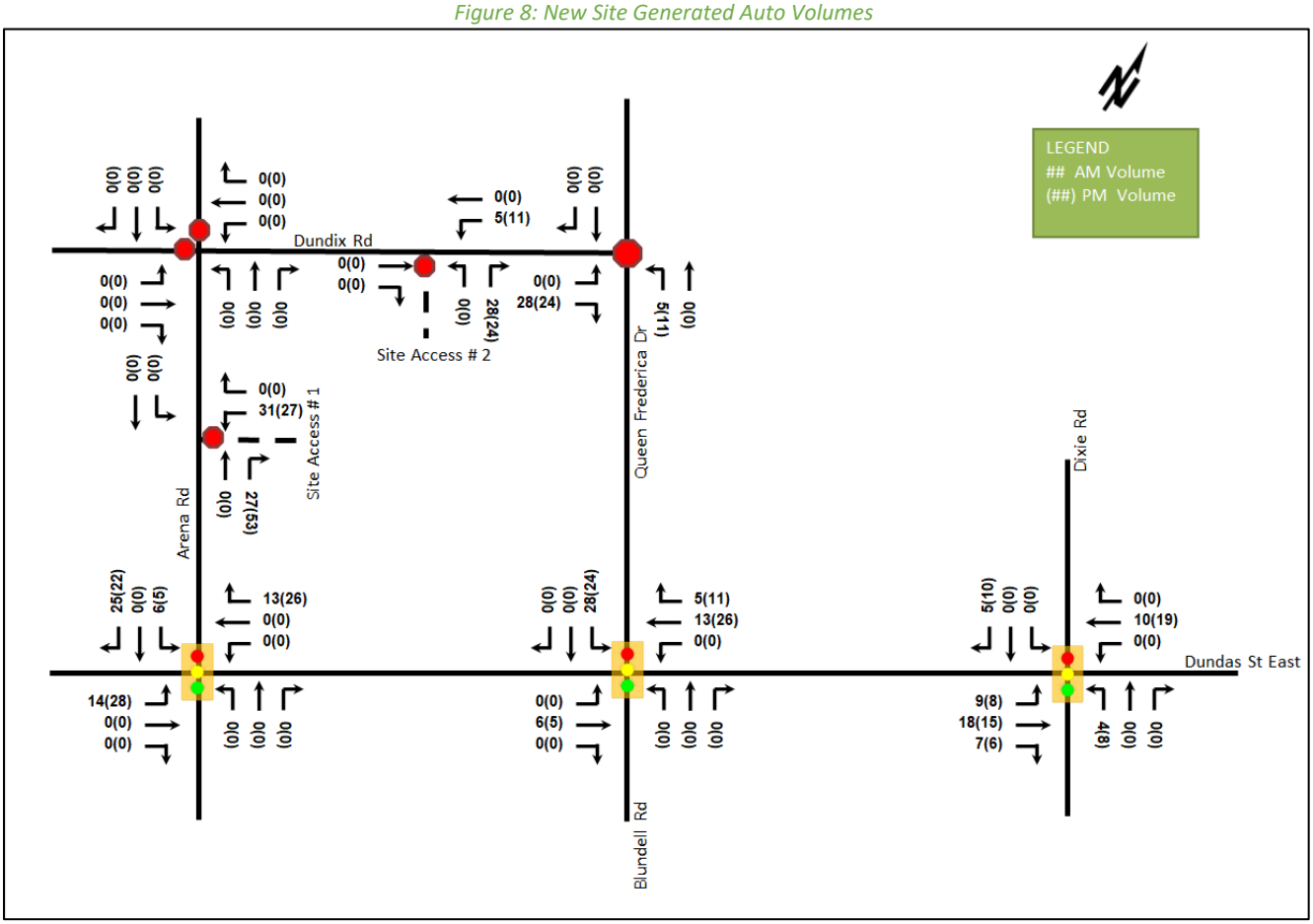


Figure 9: Pass-By Volumes

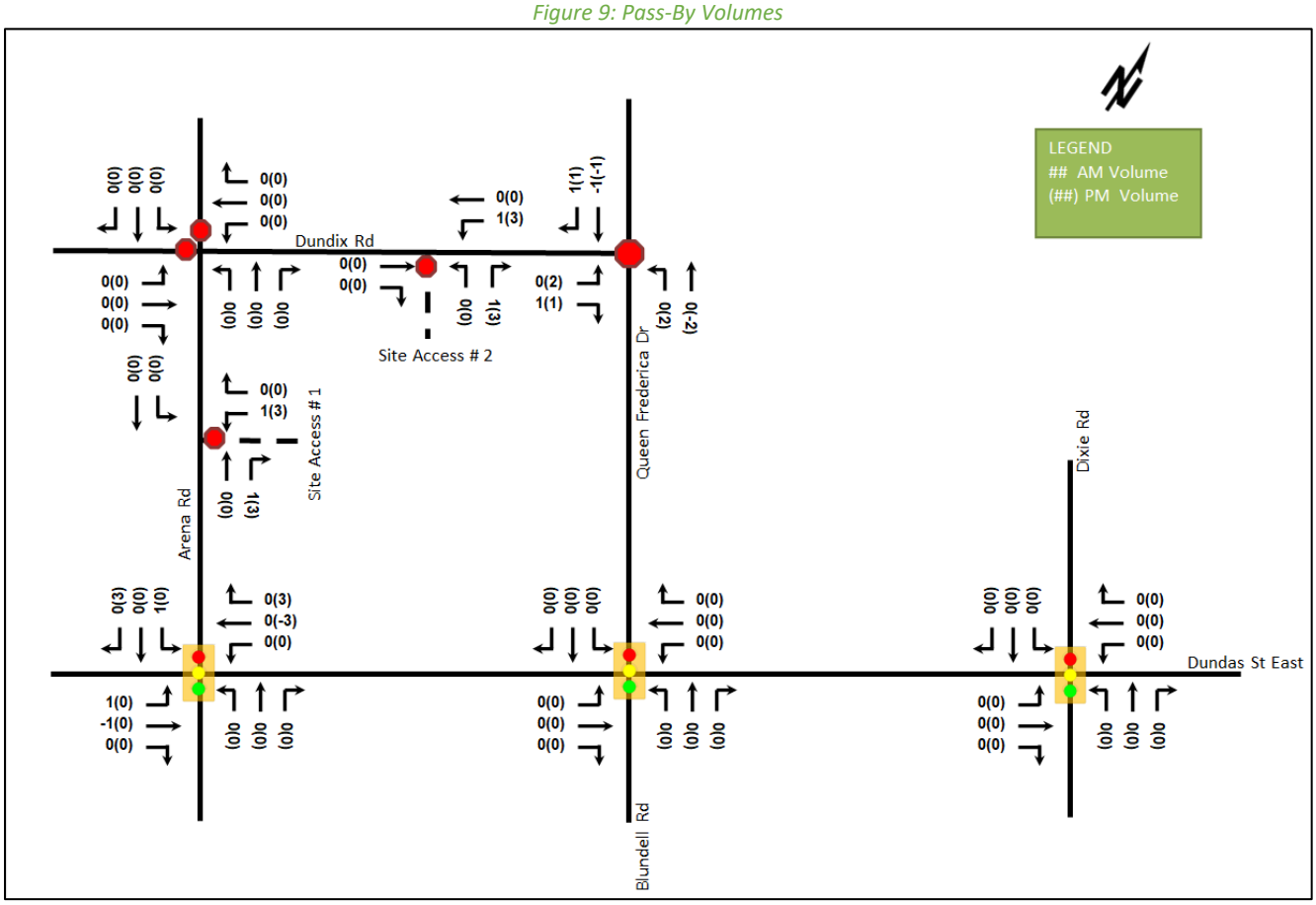
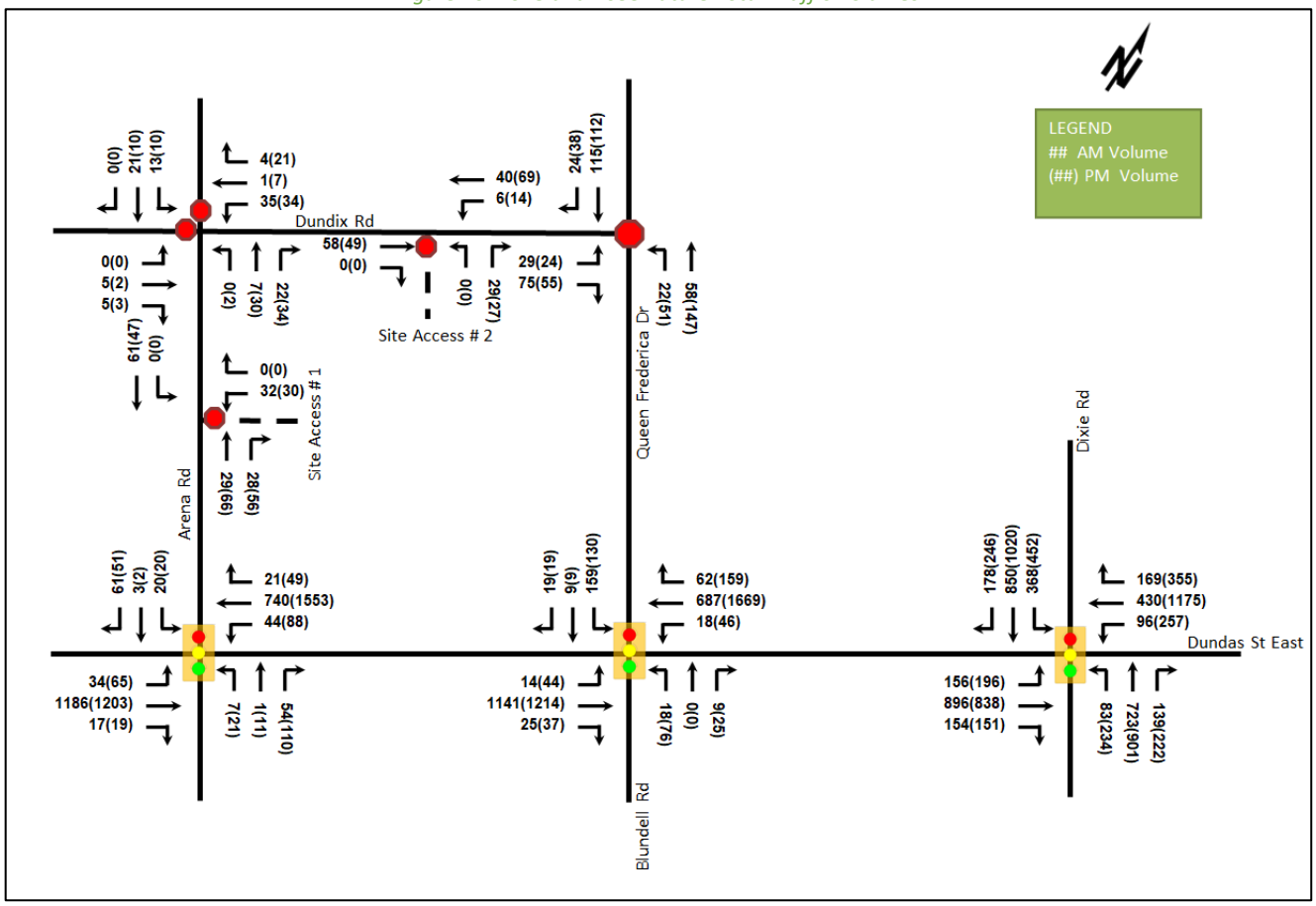


Figure 10: 2028 and 2033 Future Total Traffic Volumes



4. Development Design

4.1 Development Access

The site is proposed to have two accesses – one full movement access on Arena Road (Site Access #1) and one full movement access on Dundix Road (Site Access #2). Both accesses are 6.0 metres wide and are connected to a drop-off loop, surface parking spaces, and parking garage access. The vehicle and bicycle parking are proposed to access the underground parking via a 7.5% slope parking garage ramp. A total of four loading spaces are provided for garbage collection and move-in truck loading.

A total of 16 surface parking and 364 underground parking spaces are proposed. Pedestrian and cycling connections are provided from the building entrances to the boundary streets of Dundas Street East, Dundix Road, and Arena Road.

Using OTM Book 12 Justification 7, traffic control signal warrants at the site accesses have been examined using the 2028 and 2033 future total volumes. It has been found that signals are not warranted using Justification 7, and thus the site access will have a stop control on the minor approach. The signalization warrant for the accesses can be found in Appendix H. A Left-turn Lane warrant for unsignalized intersections was examined at accesses for the 2028 and 2033 future total horizons. To determine if a left-turn lane is warranted, the MTO Geometric Design Standards for Ontario Highways, Section E, left-turn lane warrant nomographs were examined. It was found that a left turn lane is not warranted at the accesses for the future horizons. Left-turn Lane warrants have been provided in Appendix I.

According to Transportation Association of Canada's Geometric Design Guide for Canadian Roads (TAC), Table 8.9.3, no throat length requirements for local road. Therefore, requirements of collector road were used. The suggested minimum clear throat length for collector road, for a development of this size, would require a throat length based on each land use and is summarized in Table 10 below.

Table 10: Minimum Clear Throat Length by Land Use

Land Use	Required Clear Throat Length (m) Collector
Apartment (>200 units)	25
Shopping Centre (< 25,000 sq.m)	8

The throat length of the access on Arena Road (Site Access #1) is proposed to be approximately 28.0 metres, and the throat length of the access on Dundix Road (Site Access #2) is proposed to be approximately 26.0 metres. Both throat lengths meet the throat length requirements.

4.2 Turning Template Analysis

The delivery, move-in, and garbage collection vehicle turning templates were reviewed to confirm movements will be permitted on site. Appendix J includes drawings illustrating the turning paths for the design vehicles.

4.3 Sightline Review

A sightline analysis of the proposed site accesses onto Arena Road and Dundix Road has been undertaken to determine if the proposed access is impeded by obstructions, which would limit the visibility from the access point to cars approaching on Arena Road and Dundix Road. The sightlines have been reviewed to the right and to the left of vehicles entering Arena Road and Dundix Road from the site accesses. The cases associated with stop control on the minor road have been reviewed at this location. To the right, the left turn scenario for sightline calculations governs. To the left, the right turn scenario for sightline calculations governs. The departure sight distance and stopping sight distance have been reviewed for a 50 km/h design speed (40 km/h speed limit). Table 11 outlines the stopping sight distance and departure sight requirements for the proposed accesses, and Appendix K includes a sightline drawing and reference tables for these scenarios.

Table 11: Sightline Calculations

Road	Design Speed (km/h)	Departure Sight Distance (left-turn scenario)	Departure Sight Distance (right-turn scenario)	Stopping Sight Distance	Available Sight Distance – West	Available Sight Distance – East
Arena Road	50	105.00	95.00	65.00	77.84	48.00
Dundix Road	50	105.00	110.00	65.00	92.48	90.00

Since no site volumes will be generated at the intersection of Arena Road and Dundix Road and the proposed access on Arena Road (Site Access #1) will move the existing access toward Dundas Street by approximately 5.0 metres, the distance between site access #1 and Arena Road and Dundix Road intersection will be increased, and the site distance will be improved.

To the east of Site Access #1, a sight distance of 48.0 metres is provided along Arena Road, due to a 90 degree turn between Arena Road and Dundix Road. The distance would meet the stopping sight distance requirements for a vehicle speed of 32 km/h traveling onto Arena Road. Approximately 120 metres in advance of the left turn from Dundix Road to Arena Road, there is a posted warning speed sign indicating a sharp-bend, and that vehicles should reduce speed to 20 kilometres per hour. Therefore, it is anticipated that vehicles turning this corner would

be traveling at speeds below the posted speed and would be decelerating as they approach the subject corner. As a result, it is anticipated that provided stopping sight distances for the access on Arena Road (Site Access #1) would be sufficient.

4.4 Loading

According to the City of Mississauga Loading Space Regulations, three loading spaces in total are required. The dimensions of a loading space outlined in the City of Mississauga Zoning By-Law are 3.5 metres in width, and 9 metres in length. The loading spaces at this site meets these requirements. Given that there are four loading spaces provided onsite, the City of Mississauga Loading Space requirements are met.

The accessible parking requirements and provisions for the proposed land uses at 1225 Dundas Street East were established through Mississauga Zoning By-law 0225-2007 Section 3.1.3, and it is summarized in Table 12. Based on the Mississauga Zoning By-law, accessible parking spaces for residential uses shall only apply to the total number of visitor parking spaces required.

4.5 Design for Sustainable Modes

Dundas Bus Rapid Transit Mississauga East Environmental Report (Metrolinx/City of Mississauga, 2022) identified that protected cycle tracks, multi-use-paths, and widened sidewalks will be provided along Dundas Steet. Furthermore, The City of Mississauga Pedestrian Master Plan aims to improve the pedestrian network and increase the number of walking trips in Mississauga. The active mode facilities will encourage pedestrian traffic within the overall Study Area.

4.6 Transportation Demand Management

Outlined below are the measures that will be provided at 1225 Dundas Street East site to ensure that the mode shares at the proposed development contribute to the Study Area traffic superzone meeting the Regional mode share targets:

- Unbundle parking costs from purchase price
- Provide a multimodal travel option information package to new residents
- Assist in resident school travel planning

Additionally, it is recommended that the following TDM measures are considered in later stages during the Site Plan Application process:

- Offer PRESTO cards preloaded with one monthly transit pass on initial residence purchase/move-in, to encourage residents to use transit
- Contract with provider to install on-site bikeshare station (subject to bikeshare provider agreement/willingness)
- Provide residents with bikeshare memberships, either free or subsidized
- Contract with a provider to install on-site carshare vehicles and promote their use by residents (subject to carshare provider agreement/willingness)
- Provide residents with carshare memberships, either free or subsidized

4.7 Parking

4.7.1 Vehicular Parking

The parking requirements and provisions for the proposed land uses at 1225 Dundas Street East were established through Mississauga Zoning By-law 0225-2007 Section 3.1.2, and it is summarized in Table 12.

Table 12: Vehicle Parking Requirements – Zoning By-Law Approach

Parking Classification	Units/ GFA (sq.m.)	Parking Rate	Parking Spaces Required	Parking Spaces Provided
Condominium Apartment	260 one-bedroom 164 two-bedroom 43 three-bedroom	1.25 resident spaces/one-bedroom 1.40 resident spaces/two-bedroom 1.75 resident spaces/three-bedroom 0.20 visitor spaces/unit	630 resident spaces 94 visitor spaces	366 resident spaces 14 visitor spaces
Townhouse	34	2.0 resident spaces per unit 0.25 visitor spaces per unit	68 resident spaces 9 visitor spaces	
Retail (Total)	675.5	(4.3 spaces per 100 m²) x 0.9*	26	
Total	-	-	**724 spaces** **94 visitor spaces (shared)**	**366 resident spaces** **14 visitor spaces**

* Mixed Use Share Parking Reduction based on Table 3.1.2.3

As noted above, the parking space requirement for the proposed land uses at 1225 Dundas Street East is 724 stalls, whereas 380 parking spaces are provided. To support the proposed parking variance, the City of Mississauga Parking Masterplan and Implementation Strategy will be reviewed along with approved parking reductions at a comparable proxy site.

The City of Mississauga Parking Masterplan and Implementation Strategy includes guiding principles and recommendations for future policy changes around parking in the City of Mississauga, with a focus on improving efficiency and using parking as a proactive planning tool.

The 1225 Dundas Street East, which located close to future BRT Stations along Dundas Street, belongs to Precinct Three of the Parking Implementation Strategy. Within the strategy, it is mentioned that areas that belong to Precinct Three have a reasonably good level of transit service and a range of Walk Scores. The policy objectives for these areas include reduced parking requirement rates, increased number and variety of parking management measures, and establishment of parking maximums. The minimum parking requirements for a residential land use within Precinct Three proposed as part of the City of Mississauga Parking Regulations Study can be seen in Table 13.

Table 13: Vehicle Parking Requirements – Precinct Three Parking Rates

Parking Classification	Units/ GFA (sq.m.)	Parking Rate	Parking Spaces Required	Parking Spaces Provided
Condominium Apartment	465	1.0 resident spaces per unit 0.20 visitor spaces per unit	465 resident spaces 93 visitor spaces	366 resident spaces 14 visitor spaces
Townhouse	34	1.3 resident spaces per unit 0.25 visitor spaces per unit	44 resident spaces 9 visitor spaces	
Retail (Total)	675.5	(3.5 spaces per 100 m²) x 0.9*	22	
Total	-	-	**531 spaces** **93 visitor spaces (shared)**	**366 resident spaces** **14 visitor spaces**

In order to evaluate the parking provisions based on a demand based approach, the *ITE Parking Generation Manual 5th Edition* has been reviewed for the proposed land uses. The minimum parking requirements for all land uses using ITE parking generation rates can be seen in Table 14. These rates have been established using the number of dwelling units. The surveyed sites for this data set were within 800 metres of a rail transit station, similar to the subject site. The Manual gives average rates as well as 85th percentile rates. The 85th percentile rates have been used for this exercise.

It should be noted that the *ITE Parking Generation Manual* summarizes the maximum parking demand and does not differentiate between resident and visitor parking. Using the ratio of visitor parking to resident parking noted in Table 13, it was found that visitor parking was provided as approximately 17% of the total parking (i.e. 0.2/(1.0+0.2)*100 = 17%, 0.25/(1.3+0.25)*100 = 16%). This ratio has been applied to the parking demand ratios observed through the *ITE Parking Generation Manual* surveys.

Table 14: Vehicle Parking Requirements – ITE Parking generation Rates

Land Use	Parking Classification	Units/ GFA (sq.m.)	Parking Rate (per unit)	Parking Spaces Required	Parking Spaces Provided
Multifamily Housing	Resident	465	0.51	235 spaces	380 spaces
	Visitor		0.10	48 spaces	
	Total		**0.61**	**284 spaces**	
Townhouse	Resident	34	0.90	30 spaces	
	Visitor		0.18	6 spaces	
	Total		**1.08**	**36 spaces**	
Retail	**Total**	675.5 sm (7,271 sf)	**3.93/1000 sf**	**29 spaces**	
Total				**349 spaces**	**380 spaces**

The proposed development includes a total of 380 parking spaces, exceeding the *ITE Parking Generation Manual* parking demand based approach requirement of 349 parking spaces.

Further to the above requirements, this development is located within 800 metres of the Dixie GO rail station, and fronts directly on to the future Dundas BRT corridor. Additionally, the subject development is within a Major Transit Station Area. As a result, the parking for this development should be based on forward thinking principles to support transit initiatives and reduce reliance on single-occupant vehicles. By providing parking based on a demand-based approach, the subject development will encourage additional transit ridership and reduce wasted space for underutilized parking lots. Additionally, the site is proposed to include bike-share and car-share facilities that will further reduce the reliance of residents on owning and operating vehicles, reducing the need for resident parking further.

4.7.2 Accessible Parking

The accessible parking requirements and provisions for the proposed land uses at 1225 Dundas Street East were established through Mississauga Zoning By-law 0225-2007 Section 3.1.3, and it is summarized in Table 15. Based on the Mississauga Zoning By-law, accessible parking spaces for residential uses shall only apply to the total number of visitor parking spaces required. The required accessible parking spaces should be provided to meet the zoning by-law minimums.

Table 15: Vehicle Parking Requirements – Zoning By-Law Approach

Parking Classification	Parking Spaces Requirements	Parking Spaces Required		
		Type A	Type B	Total
Apartment	1.0 space plus 3% of the total	2	2	4
Townhouse	1	1	-	1
Retail	4% of the total	1	2	3

4.7.3 Bike Parking

Recently, the Council of the Corporation of the City of Mississauga passed the Zoning By-Law to introduce bicycle parking space requirements. As such, the bicycle parking provisions at 1225 Dundas Street East will be in accordance with the Mississauga Zoning By-law 0225-2007 Section 3.1.6.5 and 3.1.6.6, and it is summarized in Table 16.

Table 16: Bike Parking Provisions

Land Use / Unit Type	GFA (sq.m.) / Units	Parking Rate (Required)	Parking Required	Parking Provided
Residential Apartment	465	0.6 spaces/unit (indoor) 0.05 spaces/unit (outdoor) (6 minimum)	279 (indoor) 24 (outdoor)	112 (indoor) 194 (outdoor)
Retail	675.5	0.15/100 sq.m. (indoor) 0.20/100 sq.m. (outdoor)	1 (indoor) 2 (outdoor)	
Total	-	-	**280 (indoor) 26 (outdoor)**	**112 (indoor) 194 (outdoor)**

As per above, the recommendations for bike parking at 1225 Dundas Street East are 280 and 26 bike parking spaces for indoor and outdoor parking, respectively. The development will provide 112 indoor and 194 outdoor bike parking spaces.

4.8 Community Impacts

The site is anticipated to generate approximately 57 AM and 72 PM new two-way vehicle trips on Arena Road and 33 AM and 30 PM new two-way vehicle trips on Dundix Road. No site generated volume is anticipated to travel north of Site Access #1 and west of Site Access #2, and all site-generated volumes are anticipated to travel straight to the major road. Given the location of the proposed development and the location of the proposed accesses, there are no opportunities for cut-through traffic through the existing adjacent low-rise residential developments. Therefore, no detrimental community impacts are anticipated.

5. Operational Analysis

To understand the operational characteristics of the Study Area intersections, Synchro (Version 11) model has been coded using the existing traffic signal timing, provided by City of Mississauga. Peak Hour Factors (PHF) have been calculated based on the existing turning movement counts and are included in Appendix L. Where peak hour volumes in 15-minute increments were unavailable, the PHF from the adjacent intersections was used. The Peak Hour Factors used for each intersection are shown below in Table 17.

Table 17: Peak Hour Factors

Intersection	Peak Hour Factor	
	AM	PM
Dixie Road and Dundas Street East	0.96	0.98
Queen Frederica Drive/Blundell Road and Dundas Street East	0.93	0.93
Arena Road and Dundas Street East	0.92	0.99
Queen Frederica Drive and Dundix Road	0.93	0.94
Arena Road and Dundix Road	0.86	0.98
Site Access 1 # at Arena Road	*0.86	*0.98
Site Access 2 # at Dundix Road	*0.86	*0.98
***PHF taken from adjacent intersections**		

The Heavy Vehicle percentage (HV %) was obtained from the TMC data for each turning movement. All Heavy Vehicle percentages below 2% were entered as 2% in order to produce a conservative analysis. All other parameters have been coded using accepted best practices and default parameters where applicable.

5.1 2022 Existing Conditions

The existing intersection volumes have been analyzed to establish a baseline condition and determine the impact of the subject development, surrounding background developments, growth, and changes to the transportation network on the Study Area. Table 18 summarizes the operational analysis of the 2022 existing conditions. Appendix M contains the 2022 Existing Conditions Synchro worksheets and HCM 2000 results are reported for signalized intersections. Given the incompatibility of HCM 2000 and all-way stop analysis, HCM 6th Edition values were reported for unsignalized intersections. All 95th percentile queues were also reported using HCM 6th Edition reports given its ability to provide these values.

Table 18: 2021 Existing Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	D	0.47	44	36	F	0.94	89	#81.5
	EBT/R	E	0.81	64	100	E	0.76	65	129
	WBL	E	0.68	56	33	F	0.95	81	#104.1
	WBT	D	0.40	53	53	E	0.80	56	133
	WBR	D	0.13	49	20	D	0.41	47	54
	NBL	C	0.26	26	21	D	0.71	38	63
	NBT/R	D	0.49	38	101	D	0.75	53	140
	SBL	E	0.78	74	77	E	0.78	70	#100.7
	SBT	C	0.38	27	84	D	0.56	42	123
	SBR	C	0.12	24	15	C	0.17	35	22
	Overall	**D**	**0.65**	**47**	**-**	**E**	**0.86**	**56**	**-**
Mitigation Measure: Signal Timing									
Dixie Road and Dundas Street East *(Signalized)*	EBL	-				E	0.82	59	62
	EBT/R					E	0.82	71	130
	WBL					E	0.87	67	92
	WBT					E	0.85	61	145
	WBR					D	0.48	50	69
	NBL					D	0.72	38	61
	NBT/R					D	0.71	51	139
	SBL					E	0.86	79	94
	SBT					D	0.56	42	122
	SBR					C	0.16	35	20
	Overall					**E**	**0.83**	**56**	**-**
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	A	0.04	5	4	C	0.52	33	#40.7
	EBT/R	A	0.40	7	79	A	0.43	8	91
	WBL	A	0.08	6	10	A	0.24	8	m16.5
	WBT/R	A	0.26	6	69	B	0.63	15	#199.8
	NBL	C	0.07	26	5	C	0.27	26	15
	NBR	C	0.01	26	0	C	0.02	24	2
	SBL	C	0.41	29	24	C	0.30	26	20
	SBT/R	C	0.04	26	5	C	0.08	25	7
	Overall	**A**	**0.40**	**9**	**-**	**B**	**0.54**	**13**	**-**
Arena Road and Dundas Street East *(Signalized)*	EBL	A	0.04	2	6	B	0.20	12	13
	EBT/R	A	0.31	3	71	B	0.35	11	83
	WBL	A	0.16	7	21	A	0.26	9	20
	WBT/R	A	0.20	6	77	A	0.42	9	94
	NBL	E	0.08	69	7	E	0.10	57	13
	NBT/R	E	0.05	69	12	E	0.12	58	19
	SBL	E	0.15	70	10	E	0.08	57	10
	SBT/R	E	0.05	69	11	E	0.02	57	9
	Overall	**A**	**0.30**	**8**	**-**	**B**	**0.37**	**13**	**-**
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.10	8	2	A	0.07	8	2
	NBL/T	A	0.10	8	2	A	0.24	9	7
	SBT/R	A	0.17	8	5	A	0.18	8	5
	Overall	**A**	**-**	**8**	**-**	**A**	**-**	**8**	**-**
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.01	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	**-**	**7**	**-**	**A**	**-**	**7**	**-**
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

The intersections within study area operate well overall.

At Dixie Road and Dundas Street East intersection during PM peak hour, the volume for the 95th percentile cycle exceeds capacity at eastbound, westbound, and southbound movements. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded. The eastbound and westbound left movement may be subject to high delays. Further optimized signal timings may reduce the delays.

At Queen Frederica Drive/Blundell Road and Dundas Street East intersection during PM peak hour, the volume for the 95th percentile cycle exceeds capacity at eastbound left and westbound shared through/right movements. Since V/C ratios are less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

5.2 2028 and 2033 Future Background Conditions

The 2028 and 2033 Future Background conditions have been examined to determine the future traffic conditions without the addition of the proposed development. Both horizons are presented in a single table as no background growth is projected between 2028 and 2033. This will isolate the impact of the subject development on the traffic network. Due to the proposed roadway modifications to accommodate Dundas BRT, the signal timing splits, and phasing have been adjusted throughout the Study Area. Along Dundas Street East, the intersection geometry was coded in Synchro according to the Dundas Bus Rapid Transit Mississauga East Environmental Report (Metrolinx/City of Mississauga, 2022). Excerpts of these documents showcasing the preliminary design of Dundas Street East have been included in Appendix C. Table 19 summarizes the operational analysis of 2028 and 2032 Future Background conditions, and the 2028 and 2033 Future Background Synchro worksheets are included as Appendix N.

Table 19: 2026 and 2032 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street East *(Signalized)*	EBL	C	0.51	30	41	F	0.94	87	#90.3
	EBT/R	E	0.91	61	204	E	0.91	71	#199.3
	WBL	D	0.69	50	#38.4	F	0.97	97	#122.4
	WBT/R	D	0.59	47	101	F	1.29	190	#368.3
	NBL	C	0.30	34	25	E	0.86	59	#86.0
	NBT/R	D	0.61	49	108	E	0.85	62	142
	SBL	E	0.84	80	80	F	0.99	107	#112.9
	SBT	D	0.47	37	95	D	0.69	52	125
	SBR	C	0.12	32	17	D	0.18	42	25
	Overall	**D**	**0.78**	**50**	**-**	**F**	**1.08**	**99**	**-**
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	A	0.04	6	m4.3	C	0.52	32	m#40.4
	EBT/R	B	0.58	12	#146.0	B	0.65	17	#215.4
	WBL	A	0.09	6	m5.7	A	0.30	10	m6.6
	WBT/R	A	0.38	7	100	C	0.93	21	m#351.2
	NBL	C	0.07	26	5	C	0.27	26	15
	NBR	C	0.01	26	0	C	0.02	24	2
	SBL	C	0.41	29	24	C	0.30	26	20
	SBT/R	C	0.04	26	5	C	0.08	25	7
	Overall	**B**	**0.54**	**11**	**-**	**B**	**0.76**	**20**	**-**
	Overall	**A**	**0.42**	**6**	**-**	**B**	**0.54**	**16**	**-**

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Arena Road and Dundas Street East *(Signalized)*	EBL	A	0.04	1	3	B	0.22	13	14
	EBT/R	A	0.43	2	57	B	0.52	13	149
	WBL	A	0.15	4	17	B	0.29	12	m13.8
	WBT/R	A	0.27	3	94	B	0.61	13	289
	NBL	E	0.12	74	8	E	0.10	57	13
	NBT/R	E	0.06	73	15	E	0.12	58	19
	SBL	E	0.25	76	12	E	0.08	57	10
	SBT/R	E	0.06	73	13	E	0.02	57	9
	Overall	**A**	**0.42**	**6**	**-**	**B**	**0.54**	**16**	**-**
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.10	8	2	A	0.07	8	2
	NBL/T	A	0.10	8	2	A	0.24	9	7
	SBT/R	A	0.17	8	5	A	0.18	8	5
	Overall	**A**	**-**	**8**	**-**	**A**	**-**	**8**	**-**
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	**-**	**7**	**-**	**A**	**-**	**7**	**-**
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

With the addition of background development traffic, growth, and the geometric changes due to Dundas BRT implementation, the overall V/C ratio will be increased at all intersections within the study area.

The intersections within study area will operate well overall except for the Dixie Road and Dundas Street East intersection. V/C ratios greater than 1.00 will occur at opposing approaches. For example, in the PM period, the westbound shared through/right movement will experience a V/C ratio of 1.29, while the southbound left movement will experience a V/C ratio of 0.99. Providing more green time to the westbound movement to clear the accumulated volume in that direction will reduce green time for the southbound direction and as a result, increase its V/C ratio further. Given that this intersection contains two major arterial roads with large through volumes during the peak periods of analysis and the geometric changes results in one through lane being removed, the level of service of F observed is expected.

5.3 2028 and 2033 Future Total Conditions

The 2028 and 2033 trip generation of the proposed development has been added to the 2028 and 2033 Future Background traffic volumes to project the impact of new traffic on the future road network. Both horizons are presented in a single table as no background growth is projected between 2028 and 2033. Table 20 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix O.

Table 20: 2028 and 2032 Total Future Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Dixie Road and Dundas Street *(Signalized)*	EBL	C	0.54	30	45	F	0.97	94	#96.3
	EBT/R	E	0.92	61	208	E	0.92	72	#207.0
	WBL	D	0.70	52	#40.5	F	0.99	105	#125.6
	WBT/R	D	0.60	46	104	F	1.31	198	#374.9
	NBL	C	0.32	35	26	E	0.88	63	#92.8
	NBT/R	D	0.62	50	108	E	0.85	62	142
	SBL	E	0.84	80	80	F	0.99	107	#112.9
	SBT	D	0.48	38	95	D	0.69	52	125
	SBR	C	0.13	32	17	D	0.21	43	29

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
	Overall	**D**	**0.78**	**51**	**-**	**F**	**1.10**	**102**	**-**
Queen Frederica Drive/Blundell Road and Dundas Street East *(Signalized)*	EBL	A	0.04	7	m4.4	C	0.51	33	m#39.6
	EBT/R	B	0.59	13	#130.2	B	0.68	19	#216.4
	WBL	A	0.10	6	m5.5	B	0.34	12	m6.8
	WBT/R	A	0.39	7	103	C	0.99	30	m#360.6
	NBL	C	0.07	26	5	C	0.24	24	15
	NBR	C	0.01	25	0	C	0.02	23	2
	SBL	C	0.47	29	28	C	0.32	25	23
	SBT/R	C	0.04	25	5	C	0.07	23	7
	Overall	**B**	**0.56**	**12**	**-**	**C**	**0.79**	**25**	**-**
Arena Road and Dundas Street East *(Signalized)*	EBL	A	0.07	2	4	B	0.42	19	29
	EBT/R	A	0.43	2	57	B	0.52	13	149
	WBL	A	0.15	5	17	B	0.29	12	m12.4
	WBT/R	A	0.28	4	94	B	0.62	14	m275.0
	NBL	E	0.12	72	8	E	0.10	58	13
	NBT/R	E	0.05	71	15	E	0.12	58	19
	SBL	E	0.32	75	16	E	0.11	58	13
	SBT/R	E	0.08	71	16	E	0.09	57	16
	Overall	**A**	**0.42**	**8**	**-**	**B**	**0.55**	**17**	**-**
Queen Frederica Drive and Dundix Road *(Unsignalized)*	EBL/R	A	0.13	8	3	A	0.10	8	2
	NBL/T	A	0.11	8	2	A	0.25	9	8
	SBT/R	A	0.17	8	5	A	0.19	8	5
	Overall	**A**	**-**	**8**	**-**	**A**	**-**	**8**	**-**
Arena Road and Dundix Road *(Unsignalized)*	EBL/T/R	A	0.01	7	0	A	0.01	7	0
	WBL/T/R	A	0.06	8	2	A	0.07	7	2
	NBL/T/R	A	0.03	7	1	A	0.07	7	2
	SBL/T/R	A	0.05	7	1	A	0.02	7	1
	Overall	**A**	**-**	**7**	**-**	**A**	**-**	**7**	**-**
Site Access 1 # at Arena Road *(Unsignalized)*	WBL/R	A	0.04	9	1	A	0.04	10	1
	NBT/R	-	-	-	-	-	-	-	-
	SBL/T	A	-	0	0	A	-	0	0
	Overall	**A**	**-**	**2**	**-**	**A**	**-**	**1**	**-**
Site Access 2 # at Dundix Road *(Unsignalized)*	EBT/R	-	-	-	-	-	-	-	-
	WBL/T	A	0.00	7	0	A	0.01	7	0
	NBL/R	A	0.03	9	1	A	0.03	9	1
	Overall	**A**	**-**	**2**	**-**	**A**	**-**	**2**	**-**
Notes:	# - 95% percentile exceeds capacity m - volume for the 95th percentile queue is metered by an upstream signal								

The network intersection operations for the 2028 and 2033 future total conditions will operate similarly to the 2028 and 2033 future background conditions.

Upon adding site-generated traffic to the 2028 and 2033 future background conditions, movements previously projected to operate with a level of service of F at the Dixie Road and Dundas Street East intersection will remain the same level of service as the future background conditions, and no new capacity issues are noted.

At the intersection of Dixie Road and Dundas Street East during the PM peak, the site volumes are projected to increase the delay on the eastbound left-turn movement by seven seconds, on the westbound left movement by eight seconds, and on the westbound through movement by eight seconds. The site volumes are projected to be eight on the eastbound left-turn movement (4.26% of existing volumes), none on the westbound left movement and 19 on the westbound through movement (1.68% of existing volumes), and none on the southbound left

movement. Therefore, the site-generated volumes are not anticipated to be a contributing factor to the existing network constraints.

The planned geometric changes at the Dixie Road and Dundas Street intersections focus on the development and facilitation of transit service along the corridor and will not directly mitigate auto operational constraints.

Both access intersections at Arena Road and Dundix Road will operate well.

6. Conclusion

This Transportation Impact Study has examined the trip generation, access requirements, and study area road network impact of the proposed development at 1225 Dundas Street East. The TIS has shown the following:

a) The proposed development will include 34 townhome units and 465 condo units with a 7,271 ft^2 (675.5 m^2) ground floor retail space.

b) The subject development will include 366 vehicular parking spaces and 15 visitor parking spaces. The parking justification section of this report has been prepared to support the proposed vehicular parking provision rates.

c) Access to the development will be accommodated via one full movement access at Arena Road (Site Access #1) and full movement access at Dundix Road (Site Access #2).

d) The growth rates in the Study Area were mostly provided by the City of Mississauga staff and range between 0% to 1.0% depending on the studied segment and horizon year. A growth rate of 0% was applied along Dundas Street East for horizon year after 2026 as a result of the Dundas Street East implementation.

e) The proposed development is located within the Dunas BRT area, and the implementation of the Dunas BRT was included in the future horizons.

f) The existing mode shares in the Study Area were obtained from the 2016 TTS, and 6% shift to transit mode and a 2% shift to cycling mode taken from the auto mode is proposed as a result of the Dundas Street East implementation.

g) 167 AM and 217 PM new peak hour two-way person trips are projected as a result of the proposed development, of which 91 AM and 114 PM trips are net new peak hour two-way vehicle trips

h) Using the available turning movement counts in the Study Area. The key findings of the existing horizon operational analysis are listed below:

    a. Several movements at Dixie Road and Dundas Street East intersection during PM peak hour may be subject to high delays, and further optimized signal timings may reduce the delays.

    b. The volume for the 95th percentile cycle exceeds capacity on several movements at the intersections of Dixie Road at Dundas Street East and Queen Frederica Drive/Blundell Road at Dundas Street East. However, where a V/C ratio is less than one, it can be assumed that the 95th percentile queue will rarely be exceeded.

i) The 2028 and 2033 future background traffic volumes, including background developments, growth, and geometric changes to Dundas Street East as a result of the Dundas BRT implementation, were analysed. With these changes the Study Area performs at a lower level of service when compared to the existing horizon.

j) The addition of the site generated trips to the 2028 and 2033 Future Background resulted in slightly increase of the delays on several movements in the study area. However, the site-generated volumes are low and are not anticipated to be a contributing factor to the existing network constraints.

k) The planned geometric changes at the Dixie Road and Dundas Street intersections focus on the development and facilitation of transit service along the corridor and will not directly mitigate auto operational constraints.

l) Both access intersections at Arena Road and Dundix Road operate well in the 2028 and 2033 Future total horizon.

m) The delivery, move-in, and garbage collection vehicle turning templates were reviewed to confirm movements will be permitted on site.

n) A sightline analysis of the proposed site access has been reviewed, and it is anticipated that provided stopping sight distances for both site accesses would be sufficient.

o) Site design elements and TDM measures supportive of sustainable modes have been proposed for 1225 Dundas Street East to ensure that the mode shares at the proposed development contribute to the Study Area traffic superzone meeting the Regional mode share targets. Some of the proposed TDM measures include reduced vehicular parking provisions and enhanced-usability bike parking.

The proposed development will have a minor impact on the study area road network and the proposed accesses will operate well overall with the proposed mitigation measures. The 1225 Dundas Street East site design aligns with the future surrounding area context, with an emphasis on sustainable modes of travel. It is recommended that, from a transportation perspective, the proposed development application proceed.

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Appendix A

Terms of Reference (TOR)

Technical Memorandum

To:	Michael Turco – City of Mississauga Rosalie Shan – Region of Peel	Date:	2022-04-25
Cc:	Mark Crockford – CGH Transportation		
From:	Zhengxuan Lai, EIT	Project Number:	2022-050

Re: 1225 Dundas Street East Transportation Impact Study – Terms of Reference

We have been asked to undertake a Transportation Impact Study (TIS) for in Mississauga, located approximately 450 metres west of Dixie Road at Dundas Street intersection. Currently, the 1225 Dundas Street East property lot is occupied by a single-storey shopping centre containing nine retail units and its parking lot along the frontage. The subject development would replace the existing shopping centre with a proposed residential development. The existing uses will be removed as part of the proposed development. The residential development is proposed to include 520 apartment units and 24 townhome units equally divided into two phases, while ground floor retail space is included along the Dundas Street frontage. Parking will be provided via one level of underground parking, with access to the parking garage from Dundix Road behind the lot. A total of 378 and 24 parking spaces will be provided to the apartment and the townhouse units, respectively.

Attached is a concept plan illustrating the proposed development. This plan has been provided without prejudice and for discussion only as it is subject to change as the development design proceeds.

We have prepared the following TIS scope of work for Peel Region's and the City of Mississauga's review. Please let us know if you have any comments or additions.

<u>Transportation Impact Study Requirements (TIS):</u>

The study will be in accordance with the Region of Peel's *Guidelines for the Preparation of Traffic Impact Studies*, and City of Mississauga's *Traffic Impact Study Guidelines*.

<u>Proposed Development Overview:</u>

- A description of the proposed development and any planned active mode facilities.
- Outline of land use as it relates to the development and site statistics.
- Transportation Demand Management (TDM) supportive elements of the proposed development.
- Review of site circulation, site access, and sight triangle

<u>Study Area:</u>

- An overview of the transportation network existing conditions will be documented (including transit, cycling, pedestrian and automobile modes)
- A summary of existing transportation planning policies within the Study Area will be identified.
- An overview of the study area road network will be provided including the road classification and descriptions of:
    - Dundas Street
    - Dixie Road
    - Queen Frederica Drive/Blundell Road

  - Arena Road
  - Dundix Road
- The following intersections will be included in the Transportation Impact Study:
  - Dundas Street and Dixie Road
  - Queen Frederica Drive/Blundell Road and Dundas Street
  - Arena Road at Dundas Street
  - Queen Frederica Drive at Dundix Road
  - Dundix Road at Arena Road

Study Horizon & Peak Periods:

- Base year 2022, followed by a full buildout future horizon of 2027, and a 5-years beyond full buildout future horizon of 2027
- AM, and PM peak hour periods

Existing Study Area Multimodal Conditions:

- **Existing Turning Movement Count Summary Reports will be requested for the following intersections from Peel Region and the City of Mississauga staff**, as applicable, and will be used to produce the existing conditions auto, cyclist, and pedestrian volumes within the Study Area:
  - Dundas Street and Dixie Road (Regional)
  - Queen Frederica Drive/Blundell Road and Dundas Street (Regional)
  - Arena Road at Dundas Street (Regional)
  - Queen Frederica Drive at Dundix Road (City)
  - Dundix Road at Arena Road (City)
- **Signal Timing Plans will be requested for the same intersections from Peel Region's and the City of Mississauga's traffic signal operations divisions:**
  - Dundas Street and Dixie Road
  - Queen Frederica Drive/Blundell Road and Dundas Street
  - Arena Road at Dundas Street
- Existing transit ridership data will be obtained from Mississauga Transit and GO Transit.

Planned Transportation Improvements:

- Dundas BRT Corridor – currently under the public consultation phase, CGH would like to confirm the expected completion date of this project as part of this TOR

Background Growth:

- As per TIS Guidelines and as part of this TOR, CGH would like to acquire growth rates for all study area segments from a calibrated traffic forecasting model from the City of Mississauga's Transportation Planning section
- If such data is not available or extra information is required, compound annual growth rates calculated using historical traffic counts and output from the Region of Peel Travel Demand Forecasting Model will be applied to auto, walking, cycling and transit 2022 existing volumes, as applicable, to establish the 2027 future analysis horizon volumes.
- Background development generated traffic will be considered as part of the background growth. **Surrounding background development that need to be included in this Study are to be confirmed with the City of Mississauga staff**, relevant information is also requested for each development. Currently, the following developments will be included:
  - **3085 Queen Frederica Drive**
  - **2525 Dixie Road**

- **1333 Tonolli Road**

Development Site Multimodal Trip Distribution and Assignment:

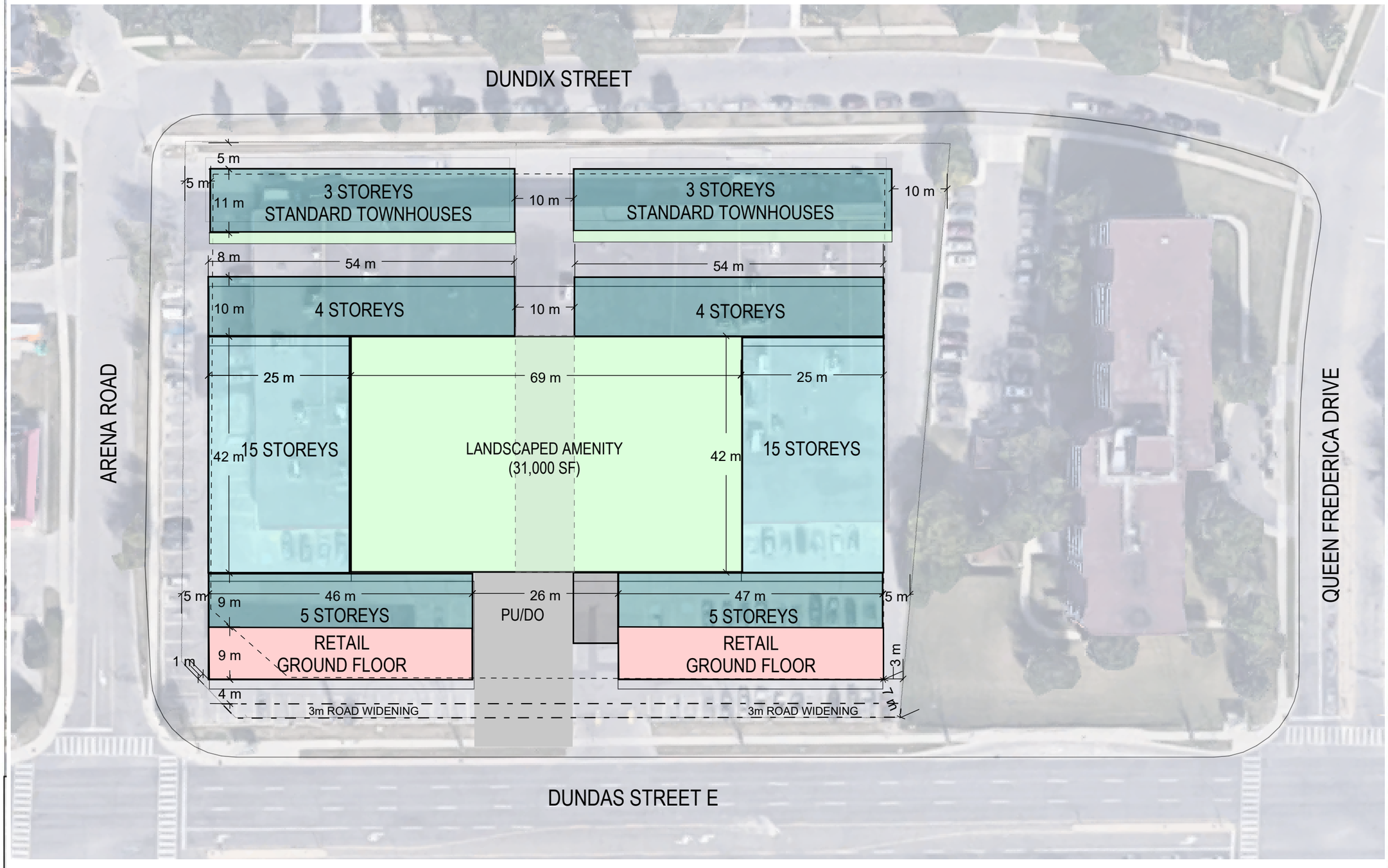
- Trip generation: ITE Trip Generation Manual 11th Edition (residential, commercial).
  - To estimate person trip generation, a factor of 1.28, calculated from a default 10% non-auto mode share and an average vehicle occupancy rate of 1.15 (i.e. 1.15/0.90 = 1.28), will be applied to the vehicle trip rates.
- Existing Modal Split will be calculated based on Transportation Tomorrow Survey (TTS) in the surrounding zones.
- Future mode shares estimation
  - As the proposed development is fronting the proposed Dundas BRT and within 1 km walking distance of Dixie GO train station, it is not recommended that the existing TAZ mode shares are used in determining the future modal share in the Study Area. Instead, CGH would like to acquire target mode shares in the area from the City of Mississauga as part of this TOR to use in the analysis of future horizons.
  - Alternatively, Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018) is aiming for 50% of sustainable (non-auto driver) mode share in 2041, consisting of approximately 18% of carpool, 17% of transit, 11% of active transportation, and 4% of others. CGH would like the Region and the City to confirm whether interpolations from this projection could be applied to the proposed development.
- Trip distribution and assignment of auto trips: Transportation Tomorrow Survey (TTS), existing traffic routing patterns and surrounding area characteristics.
- Synergy trip reductions as required for residential and commercial interactions.

Performance and Analysis:

- Traffic analysis to be performed using Synchro 11 on Study Area network intersections to determine the LOS, delay, V / C ratio and the 95th percentile queues for both signalized and unsignalized intersections as well as individual critical movements.
  - Critical movements for signalized and unsignalized intersections will be identified, using the definitions from City of Mississauga's TIS Guidelines.
  - Heavy Vehicle % and Peak Hour Factors will be taken from the collected TMC data. Where information is not available, a Heavy Vehicle % of 2%, and the Peak Hour Factor of an adjacent intersection will be applied.
  - Base saturation flow rates for arterial roadways according to City of Mississauga's TIS Guidelines
    - Advanced Left 1860, Through 1900, Right 1640
  - Other Synchro inputs will be based on site observations as well as Synchro default parameters.
- A qualitative transit, cycling, and pedestrian analysis in consideration of any planned improvements.
- Access configuration and control will be explored. Access location analysis will include a sight distance evaluation.
- Site circulation to be considered where necessary.
- Parking and loading to be evaluated against the City of Mississauga's comprehensive Zoning By-Law. Proxy parking data will be collected at a comparable site in order to help justify the proposed parking reduction.

Recommendations, Implementation Plan, and Conclusions:

- Any recommended offsite and onsite improvements or mitigation measures, which may include turn lane requirements, pedestrian / cycling / transit amenities, TDM measures, construction impacts, safety measures etc.



01
SITE PLAN

19-Nov-21
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1225 DUNDAS ST E
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Appendix B

Turning Movement Count Data

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Traffic Count Summary

Intersection:	Dundas St E & Dixie Rd
Site Code:	2219300001
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dixie Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	290	635	126	0	1051	12	78	480	106	0	664	20	1715
08:00 - 09:00	368	820	173	0	1361	11	79	713	139	0	931	15	2292
BREAK													
16:00 - 17:00	423	907	237	0	1567	47	207	848	213	0	1268	54	2835
17:00 - 18:00	467	960	225	0	1652	56	218	817	232	0	1267	27	2919
GRAND TOTAL	**1548**	**3322**	**761**	**0**	**5631**	**126**	**582**	**2858**	**690**	**0**	**4130**	**116**	**9761**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Dixie Rd
Site Code:	2219300001
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dundas St E - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	77	323	103	0	503	7	116	704	121	0	941	0	1444
08:00 - 09:00	96	412	169	0	677	3	147	861	147	0	1155	1	1832
BREAK													
16:00 - 17:00	237	1111	362	0	1710	29	189	751	162	0	1102	8	2812
17:00 - 18:00	261	1134	343	0	1738	21	191	875	148	0	1214	6	2952
GRAND TOTAL	**671**	**2980**	**977**	**0**	**4628**	**60**	**643**	**3191**	**578**	**0**	**4412**	**15**	**9040**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	57	134	21	0	212	2	1	1	0	4	0	2	0	0	2	0	0	0	0	0	3
07:15	52	127	32	0	211	1	2	1	0	4	0	6	0	0	6	0	0	0	0	0	2
07:30	78	162	27	0	267	2	5	5	0	12	0	2	2	0	4	0	0	0	0	0	3
07:45	93	180	31	0	304	4	11	4	0	19	1	3	2	0	6	0	0	0	0	0	4
08:00	80	189	31	0	300	5	14	0	0	19	1	3	2	0	6	0	0	0	0	0	2
08:15	74	221	46	0	341	10	9	4	0	23	0	3	1	0	4	0	0	0	0	0	1
08:30	103	151	28	0	282	4	6	2	0	12	1	6	3	0	10	0	0	0	0	0	5
08:45	88	205	54	0	347	2	12	1	0	15	0	1	1	0	2	0	0	0	0	0	3
SUBTOTAL	625	1369	270	0	2264	30	60	18	0	108	3	26	11	0	40	0	0	0	0	0	23

Ontario Traffic Inc.
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Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	104	215	53	0	372	4	2	6	0	12	0	1	1	0	2	0	0	0	0	0	7
16:15	114	236	56	0	406	6	3	2	0	11	4	3	0	0	7	0	0	0	0	0	9
16:30	93	188	52	0	333	0	4	1	0	5	0	2	0	0	2	0	0	0	0	0	18
16:45	98	247	63	0	408	0	5	3	0	8	0	1	0	0	1	0	0	0	0	0	13
17:00	121	234	47	0	402	1	5	2	0	8	0	2	0	0	2	0	0	0	0	0	16
17:15	92	219	56	0	367	2	3	4	0	9	0	1	0	0	1	0	0	0	0	0	13
17:30	137	281	61	0	479	1	5	0	0	6	0	1	0	0	1	0	0	0	0	0	9
17:45	109	204	51	0	364	4	3	4	0	11	0	2	0	0	2	0	0	0	0	0	18
SUBTOTAL	868	1824	439	0	3131	18	30	22	0	70	4	13	1	0	18	0	0	0	0	0	103
GRAND TOTAL	1493	3193	709	0	5395	48	90	40	0	178	7	39	12	0	58	0	0	0	0	0	126

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	13	87	28	0	128	0	4	1	0	5	1	1	1	0	3	0	0	0	0	0	9
07:15	20	89	24	0	133	1	3	1	0	5	0	3	1	0	4	0	0	0	0	0	5
07:30	20	137	24	0	181	0	8	1	0	9	0	3	0	0	3	0	0	0	0	0	5
07:45	21	140	23	0	184	1	3	2	0	6	1	2	0	0	3	0	0	0	0	0	1
08:00	18	127	36	0	181	1	12	2	0	15	0	4	2	0	6	0	0	0	0	0	4
08:15	8	176	34	0	218	1	15	3	0	19	0	5	0	0	5	0	0	0	0	0	4
08:30	29	172	26	0	227	1	5	0	0	6	0	1	1	0	2	0	0	0	0	0	7
08:45	21	183	35	0	239	0	10	0	0	10	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	150	1111	230	0	1491	5	60	10	0	75	2	22	5	0	29	0	0	0	0	0	35

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Dixie Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	42	235	70	0	347	1	5	1	0	7	0	1	0	0	1	0	0	0	0	0	15
16:15	60	191	47	0	298	1	9	1	0	11	0	1	2	0	3	0	0	0	0	0	13
16:30	43	166	48	0	257	0	3	2	0	5	0	3	0	0	3	0	0	0	0	0	7
16:45	59	227	41	0	327	1	6	0	0	7	0	1	1	0	2	0	0	0	0	0	19
17:00	58	243	50	0	351	0	4	1	0	5	0	1	1	0	2	0	0	0	0	0	5
17:15	52	204	49	0	305	0	1	2	0	3	0	3	0	0	3	0	0	0	0	0	7
17:30	54	192	76	0	322	2	6	0	0	8	0	1	1	0	2	0	0	0	0	0	9
17:45	52	156	49	0	257	0	5	3	0	8	0	1	0	0	1	0	0	0	0	0	6
SUBTOTAL	420	1614	430	0	2464	5	39	10	0	54	0	12	5	0	17	0	0	0	0	0	81
GRAND TOTAL	570	2725	660	0	3955	10	99	20	0	129	2	34	10	0	46	0	0	0	0	0	116

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	21	68	24	0	113	2	2	1	0	5	0	3	0	0	3	0	0	0	0	0	1
07:15	12	65	23	0	100	2	8	0	0	10	1	4	1	0	6	0	0	0	0	0	0
07:30	19	64	17	0	100	1	5	2	0	8	1	2	0	0	3	0	0	0	0	0	3
07:45	16	90	28	0	134	0	8	6	0	14	2	4	1	0	7	0	0	0	0	0	3
08:00	25	100	32	0	157	2	5	4	0	11	1	1	3	0	5	0	0	0	0	0	0
08:15	15	83	36	0	134	1	4	7	0	12	1	3	1	0	5	0	0	0	0	0	1
08:30	29	116	38	0	183	1	8	3	0	12	0	3	1	0	4	0	0	0	0	0	0
08:45	18	80	38	0	136	3	6	3	0	12	0	3	3	0	6	0	0	0	0	0	2
SUBTOTAL	155	666	236	0	1057	12	46	26	0	84	6	23	10	0	39	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	33	253	78	0	364	0	27	8	0	35	0	3	1	0	4	0	0	0	0	0	12
16:15	59	249	93	0	401	1	10	3	0	14	1	3	0	0	4	0	0	0	0	0	10
16:30	83	276	90	0	449	1	4	3	0	8	0	4	0	0	4	0	0	0	0	0	6
16:45	58	276	82	0	416	1	2	4	0	7	0	4	0	0	4	0	0	0	0	0	1
17:00	75	264	105	0	444	1	7	2	0	10	0	2	0	0	2	0	0	0	0	0	4
17:15	49	332	68	0	449	2	0	2	0	4	0	3	0	0	3	0	0	0	0	0	2
17:30	70	236	86	0	392	1	5	6	0	12	0	2	0	0	2	0	0	0	0	0	4
17:45	60	276	70	0	406	3	3	4	0	10	0	4	0	0	4	0	0	0	0	0	11
SUBTOTAL	487	2162	672	0	3321	10	58	32	0	100	1	25	1	0	27	0	0	0	0	0	50
GRAND TOTAL	642	2828	908	0	4378	22	104	58	0	184	7	48	11	0	66	0	0	0	0	0	60

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	21	147	31	0	199	3	3	0	0	6	2	3	0	0	5	0	0	0	0	0	0
07:15	22	161	27	0	210	3	11	0	0	14	0	4	0	0	4	0	0	0	0	0	0
07:30	26	146	25	0	197	3	8	1	0	12	0	3	0	0	3	0	0	0	0	0	0
07:45	32	203	34	0	269	4	10	1	0	15	0	5	2	0	7	0	0	0	0	0	0
08:00	21	163	35	0	219	3	8	1	0	12	0	3	1	0	4	0	0	0	0	0	1
08:15	39	190	44	0	273	2	9	2	0	13	1	2	0	0	3	0	0	0	0	0	0
08:30	46	231	31	0	308	3	8	0	0	11	0	6	0	0	6	0	0	0	0	0	0
08:45	27	234	33	0	294	4	5	0	0	9	1	2	0	0	3	0	0	0	0	0	0
SUBTOTAL	234	1475	260	0	1969	25	62	5	0	92	4	28	3	0	35	0	0	0	0	0	1

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	42	164	30	0	236	1	8	2	0	11	0	1	0	0	1	0	0	0	0	0	1
16:15	43	188	40	0	271	3	6	1	0	10	0	2	1	0	3	0	0	0	0	0	5
16:30	57	183	53	0	293	3	9	0	0	12	0	2	0	0	2	0	0	0	0	0	1
16:45	38	179	34	0	251	2	6	0	0	8	0	3	1	0	4	0	0	0	0	0	1
17:00	42	188	42	0	272	0	3	2	0	5	0	3	0	0	3	0	0	0	0	0	6
17:15	49	233	34	0	316	5	3	0	0	8	0	1	1	0	2	0	0	0	0	0	0
17:30	52	163	31	0	246	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0
17:45	42	267	38	0	347	1	4	0	0	5	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	365	1565	302	0	2232	15	45	5	0	65	0	16	3	0	19	0	0	0	0	0	14
GRAND TOTAL	599	3040	562	0	4201	40	107	10	0	157	4	44	6	0	54	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dixie Rd runs N/S

North Approach

	Out	In	Total
Cars	1270	935	2205
Trucks	69	71	140
Buses	22	23	45
Bicycles	0	0	0
	1361	**1029**	**2390**

Dixie Rd

Bicycles	0	0	0	0
Buses	7	13	2	0
Trucks	7	41	21	0
Cars	159	766	345	0
Totals	**173**	**820**	**368**	**0**

Peds: 11

Peds: 1

Peds: 3

Peds: 15

East Approach

	Out	In	Total
Cars	610	1294	1904
Trucks	47	56	103
Buses	20	18	38
Bicycles	0	0	0
	677	**1368**	**2045**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	2	12	133	**147**
0	13	30	818	**861**
0	1	3	143	**147**

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
169	144	17	8	0
412	379	23	10	0
96	87	7	2	0

West Approach

	Out	In	Total
Cars	1094	614	1708
Trucks	45	33	78
Buses	16	17	33
Bicycles	0	0	0
	1155	**664**	**1819**

Dixie Rd

Totals	**79**	**713**	**139**	**0**
Cars	76	658	131	0
Trucks	3	42	5	0
Buses	0	13	3	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	865	996	1861
Trucks	50	51	101
Buses	16	16	32
Bicycles	0	0	0
	931	**1063**	**1994**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Dixie Rd						South Approach Dixie Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	↰	↑	↱	↶	Peds	Total	
08:00	86	206	33	0	2	325	19	143	40	0	4	202	28	106	39	0	0	173	24	174	37	0	1	235	935
08:15	84	233	51	0	1	368	9	196	37	0	4	242	17	90	44	0	1	151	42	201	46	0	0	289	1050
08:30	108	163	33	0	5	304	30	178	27	0	7	235	30	127	42	0	0	199	49	245	31	0	0	325	1063
08:45	90	218	56	0	3	364	21	196	35	0	0	252	21	89	44	0	2	154	32	241	33	0	0	306	1076
Grand Total	**368**	**820**	**173**	**0**	**11**	**1361**	**79**	**713**	**139**	**0**	**15**	**931**	**96**	**412**	**169**	**0**	**3**	**677**	**147**	**861**	**147**	**0**	**1**	**1155**	**4124**
Approach %	27	60.2	12.7	0		-	8.5	76.6	14.9	0		-	14.2	60.9	25	0		-	12.7	74.5	12.7	0		-	
Totals %	8.9	19.9	4.2	0		33	1.9	17.3	3.4	0		22.6	2.3	10	4.1	0		16.4	3.6	20.9	3.6	0		28	
PHF	**0.85**	**0.88**	**0.77**	**0**		**0.92**	**0.66**	**0.91**	**0.87**	**0**		**0.92**	**0.8**	**0.81**	**0.96**	**0**		**0.85**	**0.75**	**0.88**	**0.8**	**0**		**0.89**	**0.96**
Cars	345	766	159	0		1270	76	658	131	0		865	87	379	144	0		610	133	818	143	0		1094	3839
% Cars	93.8	93.4	91.9	0		93.3	96.2	92.3	94.2	0		92.9	90.6	92	85.2	0		90.1	90.5	95	97.3	0		94.7	93.1
Trucks	21	41	7	0		69	3	42	5	0		50	7	23	17	0		47	12	30	3	0		45	211
% Trucks	5.7	5	4	0		5.1	3.8	5.9	3.6	0		5.4	7.3	5.6	10.1	0		6.9	8.2	3.5	2	0		3.9	5.1
Buses	2	13	7	0		22	0	13	3	0		16	2	10	8	0		20	2	13	1	0		16	74
% Buses	0.5	1.6	4	0		1.6	0	1.8	2.2	0		1.7	2.1	2.4	4.7	0		3	1.4	1.5	0.7	0		1.4	1.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					15	-					3	-					1	-	30
% Peds					36.7	-					50	-					10	-					3.3	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:45:00
To:	18:00:00	To:	17:45:00

Intersection: Dundas St E & Dixie Rd
Site Code: 2219300001
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dixie Rd runs N/S

North Approach

	Out	In	Total
Cars	1656	1388	3044
Trucks	31	38	69
Buses	5	6	11
Bicycles	0	0	0
	1692	**1432**	**3124**

Dixie Rd

Bicycles	0	0	0	0
Buses	0	5	0	0
Trucks	9	18	4	0
Cars	227	981	448	0
Totals	**236**	**1004**	**452**	**0**

Peds: 51

East Approach

	Out	In	Total
Cars	1701	1427	3128
Trucks	33	25	58
Buses	11	13	24
Bicycles	0	0	0
	1745	**1465**	**3210**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	7	181	**188**
0	10	18	763	**791**
0	2	2	141	**145**

Peds: 7

N
W E
S

Peds: 11

Dundas St E

	Totals	Cars	Trucks	Buses	Bicycles
	0	0	0	0	0
	355	341	14	0	0
	1133	1108	14	11	0
	257	252	5	0	0

Peds: 40

West Approach

	Out	In	Total
Cars	1085	1558	2643
Trucks	27	26	53
Buses	12	11	23
Bicycles	0	0	0
	1124	**1595**	**2719**

Totals	**226**	**889**	**222**	**0**
Cars	223	866	216	0
Trucks	3	17	3	0
Buses	0	6	3	0
Bicycles	0	0	0	0

Dixie Rd

South Approach

	Out	In	Total
Cars	1305	1374	2679
Trucks	23	25	48
Buses	9	7	16
Bicycles	0	0	0
	1337	**1406**	**2743**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Dundas St E & Dixie Rd
Site Code:	2219300001
Count Date:	Jun 07, 2022
Period:	16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Dixie Rd						South Approach Dixie Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45	98	253	66	0	13	417	60	234	42	0	19	336	59	282	86	0	1	427	40	188	35	0	1	263	1443
17:00	122	241	49	0	16	412	58	248	52	0	5	358	76	273	107	0	4	456	42	194	44	0	6	280	1506
17:15	94	223	60	0	13	377	52	208	51	0	7	311	51	335	70	0	2	456	54	237	35	0	0	326	1470
17:30	138	287	61	0	9	486	56	199	77	0	9	332	71	243	92	0	4	406	52	172	31	0	0	255	1479
Grand Total	**452**	**1004**	**236**	**0**	**51**	**1692**	**226**	**889**	**222**	**0**	**40**	**1337**	**257**	**1133**	**355**	**0**	**11**	**1745**	**188**	**791**	**145**	**0**	**7**	**1124**	**5898**
Approach %	26.7	59.3	13.9	0		-	16.9	66.5	16.6	0		-	14.7	64.9	20.3	0		-	16.7	70.4	12.9	0		-	
Totals %	7.7	17	4	0		28.7	3.8	15.1	3.8	0		22.7	4.4	19.2	6	0		29.6	3.2	13.4	2.5	0		19.1	
PHF	**0.82**	**0.87**	**0.89**	**0**		**0.87**	**0.94**	**0.9**	**0.72**	**0**		**0.93**	**0.85**	**0.85**	**0.83**	**0**		**0.96**	**0.87**	**0.83**	**0.82**	**0**		**0.86**	**0.98**
Cars	448	981	227	0		1656	223	866	216	0		1305	252	1108	341	0		1701	181	763	141	0		1085	5747
% Cars	99.1	97.7	96.2	0		97.9	98.7	97.4	97.3	0		97.6	98.1	97.8	96.1	0		97.5	96.3	96.5	97.2	0		96.5	97.4
Trucks	4	18	9	0		31	3	17	3	0		23	5	14	14	0		33	7	18	2	0		27	114
% Trucks	0.9	1.8	3.8	0		1.8	1.3	1.9	1.4	0		1.7	1.9	1.2	3.9	0		1.9	3.7	2.3	1.4	0		2.4	1.9
Buses	0	5	0	0		5	0	6	3	0		9	0	11	0	0		11	0	10	2	0		12	37
% Buses	0	0.5	0	0		0.3	0	0.7	1.4	0		0.7	0	1	0	0		0.6	0	1.3	1.4	0		1.1	0.6
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					51	-					40	-					11	-					7	-	109
% Peds					46.8	-					36.7	-					10.1	-					6.4	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection:	Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code:	2219300002
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Queen Frederica Dr - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	104	9	19	0	132	1	13	0	10	0	23	5	155
08:00 - 09:00	131	9	19	0	159	5	18	0	9	0	27	3	186
BREAK													
16:00 - 17:00	78	3	13	0	94	3	82	1	22	0	105	20	199
17:00 - 18:00	111	9	16	0	136	12	76	0	25	0	101	16	237
GRAND TOTAL	**424**	**30**	**67**	**0**	**521**	**21**	**189**	**1**	**66**	**0**	**256**	**44**	**777**

Traffic Count Summary

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Intersection:	Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code:	2219300002
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dundas St E - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	16	498	35	0	549	4	10	804	21	0	835	5	1384
08:00 - 09:00	18	661	57	0	736	2	14	1113	25	0	1152	8	1888
BREAK													
16:00 - 17:00	38	1563	131	0	1732	16	32	1042	36	0	1110	13	2842
17:00 - 18:00	50	1609	147	0	1806	13	43	1131	31	0	1205	4	3011
GRAND TOTAL	**122**	**4331**	**370**	**0**	**4823**	**35**	**99**	**4090**	**113**	**0**	**4302**	**30**	**9125**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	31	0	5	0	36	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:15	13	1	3	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	36	2	4	0	42	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:45	22	6	7	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	24	1	6	0	31	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
08:15	34	2	4	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	35	2	3	0	40	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:45	36	4	6	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	231	18	38	0	287	3	0	0	0	3	1	0	0	0	1	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	16	0	6	0	22	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	1
16:15	14	1	2	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:30	25	2	1	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	21	0	4	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	24	4	6	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:15	25	1	5	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:30	35	4	4	0	43	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
17:45	26	0	1	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	186	12	29	0	227	1	0	0	0	1	2	0	0	0	2	0	0	0	0	0	15
GRAND TOTAL	417	30	67	0	514	4	0	0	0	4	3	0	0	0	3	0	0	0	0	0	21

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Blundell Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	2	0	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	2	0	2	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
07:30	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45	5	0	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:15	7	0	3	0	10	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
08:30	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45	4	0	2	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	30	0	17	0	47	1	0	2	0	3	0	0	0	0	0	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Blundell Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	22	0	5	0	27	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
16:15	16	0	2	0	18	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	5
16:30	22	0	9	0	31	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
16:45	19	1	5	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
17:00	20	0	9	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:15	20	0	4	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:30	17	0	7	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:45	19	0	5	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
SUBTOTAL	155	1	46	0	202	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	36
GRAND TOTAL	185	1	63	0	249	4	0	3	0	7	0	0	0	0	0	0	0	0	0	0	44

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	3	92	7	0	102	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	1
07:15	4	94	12	0	110	1	6	0	0	7	0	4	0	0	4	0	0	0	0	0	1
07:30	3	118	9	0	130	0	9	0	0	9	0	4	1	0	5	0	0	0	0	0	1
07:45	5	149	5	0	159	0	11	1	0	12	0	5	0	0	5	0	0	0	0	0	1
08:00	3	127	15	0	145	0	3	2	0	5	0	2	0	0	2	0	0	0	0	0	0
08:15	10	154	13	0	177	0	10	0	0	10	0	4	0	0	4	0	0	0	0	0	0
08:30	3	166	10	0	179	0	16	2	0	18	0	3	0	0	3	0	0	0	0	0	1
08:45	2	167	15	0	184	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	1
SUBTOTAL	33	1067	86	0	1186	1	63	5	0	69	0	29	1	0	30	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	9	359	22	0	390	2	12	0	0	14	0	3	1	0	4	0	0	0	0	0	2
16:15	7	396	41	0	444	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	2
16:30	7	378	31	0	416	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	5
16:45	13	388	35	0	436	0	3	1	0	4	0	5	0	0	5	0	0	0	0	0	7
17:00	8	382	36	0	426	1	10	0	0	11	0	2	0	0	2	0	0	0	0	0	2
17:15	13	413	45	0	471	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	7
17:30	11	395	31	0	437	0	6	0	0	6	0	1	0	0	1	0	0	0	0	0	3
17:45	16	383	35	0	434	1	7	0	0	8	0	4	0	0	4	0	0	0	0	0	1
SUBTOTAL	84	3094	276	0	3454	4	56	1	0	61	0	22	1	0	23	0	0	0	0	0	29
GRAND TOTAL	117	4161	362	0	4640	5	119	6	0	130	0	51	2	0	53	0	0	0	0	0	35

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	4	166	3	0	173	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	1
07:15	4	170	8	0	182	0	14	1	0	15	0	3	0	0	3	0	0	0	0	0	0
07:30	2	172	4	0	178	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	0
07:45	0	243	5	0	248	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	4
08:00	4	223	8	0	235	0	10	1	0	11	1	1	0	0	2	0	0	0	0	0	4
08:15	1	281	6	0	288	0	8	0	0	8	0	3	0	0	3	0	0	0	0	0	0
08:30	5	266	7	0	278	1	10	0	0	11	0	3	0	0	3	0	0	0	0	0	2
08:45	2	297	3	0	302	0	9	0	0	9	0	2	0	0	2	0	0	0	0	0	2
SUBTOTAL	22	1818	44	0	1884	1	79	2	0	82	1	20	0	0	21	0	0	0	0	0	13

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	6	216	6	0	228	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	1
16:15	8	260	9	0	277	0	8	1	0	9	0	2	0	0	2	0	0	0	0	0	0
16:30	12	245	7	0	264	0	5	1	0	6	0	2	0	0	2	0	0	0	0	0	4
16:45	6	285	12	0	303	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	8
17:00	17	257	7	0	281	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	0
17:15	11	318	8	0	337	0	9	0	0	9	0	2	0	0	2	0	0	0	0	0	1
17:30	10	268	9	0	287	0	6	1	0	7	0	2	0	0	2	0	0	0	0	0	3
17:45	5	260	5	0	270	0	1	0	0	1	0	3	1	0	4	0	0	0	0	0	0
SUBTOTAL	75	2109	63	0	2247	0	42	3	0	45	0	22	1	0	23	0	0	0	0	0	17
GRAND TOTAL	97	3927	107	0	4131	1	121	5	0	127	1	42	1	0	44	0	0	0	0	0	30

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	157	65	222
Trucks	1	5	6
Buses	1	1	2
Bicycles	0	0	0
	159	**71**	**230**

Queen Frederica Dr

Bicycles	0	0	0	0
Buses	0	0	1	0
Trucks	0	0	1	0
Cars	19	9	129	0
Totals	**19**	**9**	**131**	**0**

East Approach

	Out	In	Total
Cars	685	1203	1888
Trucks	38	40	78
Buses	13	10	23
Bicycles	0	0	0
	736	**1253**	**1989**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	1	1	12	**14**
0	9	37	1067	**1113**
0	0	1	24	**25**

Peds: 5

Peds: 8

Peds: 2

Peds: 3

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
57	53	4	0	0
661	614	34	13	0
18	18	0	0	0

West Approach

	Out	In	Total
Cars	1103	651	1754
Trucks	39	34	73
Buses	10	13	23
Bicycles	0	0	0
	1152	**698**	**1850**

Totals	**18**	**0**	**9**	**0**
Cars	18	0	7	0
Trucks	0	0	2	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Blundell Rd

South Approach

	Out	In	Total
Cars	25	51	76
Trucks	2	1	3
Buses	0	0	0
Bicycles	0	0	0
	27	**52**	**79**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Queen Frederica Dr						South Approach Blundell Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	25	1	6	0	3	32	3	0	1	0	2	4	3	132	17	0	0	152	5	234	9	0	4	248	436
08:15	34	2	4	0	0	40	7	0	5	0	0	12	10	168	13	0	0	191	1	292	6	0	0	299	542
08:30	36	2	3	0	1	41	4	0	1	0	1	5	3	185	12	0	1	200	6	279	7	0	2	292	538
08:45	36	4	6	0	1	46	4	0	2	0	0	6	2	176	15	0	1	193	2	308	3	0	2	313	558
Grand Total	**131**	**9**	**19**	**0**	**5**	**159**	**18**	**0**	**9**	**0**	**3**	**27**	**18**	**661**	**57**	**0**	**2**	**736**	**14**	**1113**	**25**	**0**	**8**	**1152**	**2074**
Approach %	82.4	5.7	11.9	0		-	66.7	0	33.3	0		-	2.4	89.8	7.7	0		-	1.2	96.6	2.2	0		-	
Totals %	6.3	0.4	0.9	0		7.7	0.9	0	0.4	0		1.3	0.9	31.9	2.7	0		35.5	0.7	53.7	1.2	0		55.5	
PHF	**0.91**	**0.56**	**0.79**	**0**		**0.86**	**0.64**	**0**	**0.45**	**0**		**0.56**	**0.45**	**0.89**	**0.84**	**0**		**0.92**	**0.58**	**0.9**	**0.69**	**0**		**0.92**	**0.93**
Cars	129	9	19	0		157	18	0	7	0		25	18	614	53	0		685	12	1067	24	0		1103	1970
% Cars	98.5	100	100	0		98.7	100	0	77.8	0		92.6	100	92.9	93	0		93.1	85.7	95.9	96	0		95.7	95
Trucks	1	0	0	0		1	0	0	2	0		2	0	34	4	0		38	1	37	1	0		39	80
% Trucks	0.8	0	0	0		0.6	0	0	22.2	0		7.4	0	5.1	7	0		5.2	7.1	3.3	4	0		3.4	3.9
Buses	1	0	0	0		1	0	0	0	0		0	0	13	0	0		13	1	9	0	0		10	24
% Buses	0.8	0	0	0		0.6	0	0	0	0		0	0	2	0	0		1.8	7.1	0.8	0	0		0.9	1.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					5	-					3	-					2	-					8	-	18
% Peds					27.8	-					16.7	-					11.1	-					44.4	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:45:00
To:	18:00:00	To:	17:45:00

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection **** **Major Road:** Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	133	192	325
Trucks	1	1	2
Buses	0	0	0
Bicycles	0	0	0
	134	**193**	**327**

Queen Frederica Dr

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	1	0
Cars	19	9	105	0
Totals	**19**	**9**	**106**	**0**

East Approach

	Out	In	Total
Cars	1770	1258	3028
Trucks	24	23	47
Buses	11	12	23
Bicycles	0	0	0
	1805	**1293**	**3098**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	0	44	**44**
0	12	22	1128	**1162**
0	0	1	36	**37**

Peds: 12

Peds: 12

N
W E
S

Peds: 19

Peds: 18

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
148	147	1	0	0
1611	1578	22	11	0
46	45	1	0	0

West Approach

	Out	In	Total
Cars	1208	1673	2881
Trucks	23	22	45
Buses	12	11	23
Bicycles	0	0	0
	1243	**1706**	**2949**

Totals	**76**	**1**	**25**	**0**
Cars	76	1	25	0
Trucks	0	0	0	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Blundell Rd

South Approach

	Out	In	Total
Cars	102	90	192
Trucks	0	2	2
Buses	0	0	0
Bicycles	0	0	0
	102	**92**	**194**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Queen Frederica Dr - Blundell Rd
Site Code: 2219300002
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Queen Frederica Dr						South Approach Blundell Rd						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45	21	0	4	0	0	25	19	1	5	0	5	25	13	396	36	0	7	445	6	295	12	0	8	313	808
17:00	24	4	6	0	3	34	20	0	9	0	4	29	9	394	36	0	2	439	17	262	7	0	0	286	788
17:15	25	1	5	0	4	31	20	0	4	0	3	24	13	419	45	0	7	477	11	329	8	0	1	348	880
17:30	36	4	4	0	5	44	17	0	7	0	6	24	11	402	31	0	3	444	10	276	10	0	3	296	808
Grand Total	**106**	**9**	**19**	**0**	**12**	**134**	**76**	**1**	**25**	**0**	**18**	**102**	**46**	**1611**	**148**	**0**	**19**	**1805**	**44**	**1162**	**37**	**0**	**12**	**1243**	**3284**
Approach %	79.1	6.7	14.2	0		-	74.5	1	24.5	0		-	2.5	89.3	8.2	0		-	3.5	93.5	3	0		-	
Totals %	3.2	0.3	0.6	0		4.1	2.3	0	0.8	0		3.1	1.4	49.1	4.5	0		55	1.3	35.4	1.1	0		37.9	
PHF	**0.74**	**0.56**	**0.79**	**0**		**0.76**	**0.95**	**0.25**	**0.69**	**0**		**0.88**	**0.88**	**0.96**	**0.82**	**0**		**0.95**	**0.65**	**0.88**	**0.77**	**0**		**0.89**	**0.93**
Cars	105	9	19	0		133	76	1	25	0		102	45	1578	147	0		1770	44	1128	36	0		1208	3213
% Cars	99.1	100	100	0		99.3	100	100	100	0		100	97.8	98	99.3	0		98.1	100	97.1	97.3	0		97.2	97.8
Trucks	1	0	0	0		1	0	0	0	0		0	1	22	1	0		24	0	22	1	0		23	48
% Trucks	0.9	0	0	0		0.7	0	0	0	0		0	2.2	1.4	0.7	0		1.3	0	1.9	2.7	0		1.9	1.5
Buses	0	0	0	0		0	0	0	0	0		0	0	11	0	0		11	0	12	0	0		12	23
% Buses	0	0	0	0		0	0	0	0	0		0	0	0.7	0	0		0.6	0	1	0	0		1	0.7
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					12	-					18	-					19	-					12	-	61
% Peds					19.7	-					29.5	-					31.1	-					19.7	-	

Traffic Count Summary

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Intersection:	Dundas St E & Arena Rd - Commercial Access
Site Code:	2219300003
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Arena Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	4	0	38	0	42	1	2	0	18	0	20	6	62
08:00 - 09:00	13	3	36	0	52	9	7	1	54	0	62	9	114
BREAK													
16:00 - 17:00	14	3	29	0	46	3	22	10	109	0	141	20	187
17:00 - 18:00	13	2	23	0	38	13	19	9	105	0	133	20	171
GRAND TOTAL	**44**	**8**	**126**	**0**	**178**	**26**	**50**	**20**	**286**	**0**	**356**	**55**	**534**

Traffic Count Summary

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Intersection:	Dundas St E & Arena Rd - Commercial Access
Site Code:	2219300003
Municipality:	Mississauga
Count Date:	Jun 07, 2022

Dundas St E - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	23	490	5	0	518	5	21	849	10	0	880	3	1398
08:00 - 09:00	44	725	8	0	777	6	19	1164	17	0	1200	4	1977
BREAK													
16:00 - 17:00	84	1492	17	0	1593	4	41	1080	17	0	1138	18	2731
17:00 - 18:00	81	1530	18	0	1629	10	29	1162	17	0	1208	12	2837
GRAND TOTAL	**232**	**4237**	**48**	**0**	**4517**	**25**	**110**	**4255**	**61**	**0**	**4426**	**37**	**8943**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	1	0	9	0	10	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:45	3	0	11	0	14	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
08:00	4	1	7	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15	4	1	15	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	1	0	7	0	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	6
08:45	3	1	7	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	16	3	72	0	91	0	0	0	0	0	1	0	2	0	3	0	0	0	0	0	10

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	5	0	7	0	12	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
16:15	1	2	6	0	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
16:30	5	0	9	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	3	1	5	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	4	0	6	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:15	3	1	6	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:30	3	0	5	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:45	3	1	5	0	9	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	27	5	49	0	81	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	16
GRAND TOTAL	43	8	121	0	172	0	0	2	0	2	1	0	3	0	4	0	0	0	0	0	26

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Commercial Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	0	5	0	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	1	0	7	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	1	0	9	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
08:15	2	0	11	0	13	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
08:30	1	1	19	0	21	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
08:45	3	0	11	0	14	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	9	1	67	0	77	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Commercial Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	4	1	24	0	29	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
16:15	6	2	21	0	29	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	7
16:30	8	3	30	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
16:45	3	4	31	0	38	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
17:00	4	3	23	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
17:15	5	1	26	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:30	6	4	27	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:45	4	1	29	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	40	19	211	0	270	1	0	3	0	4	0	0	0	0	0	0	0	0	0	0	40
GRAND TOTAL	49	20	278	0	347	1	0	8	0	9	0	0	0	0	0	0	0	0	0	0	55

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	102	1	0	103	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0
07:15	6	96	1	0	103	1	7	0	0	8	0	3	0	0	3	0	0	0	0	0	0
07:30	3	117	2	0	122	1	2	0	0	3	0	4	0	0	4	0	0	0	0	0	3
07:45	12	141	1	0	154	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0	2
08:00	7	138	1	0	146	2	6	0	0	8	0	2	0	0	2	0	0	0	0	0	0
08:15	15	163	2	0	180	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	0
08:30	9	189	2	0	200	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	3
08:45	11	185	3	0	199	0	11	0	0	11	0	4	0	0	4	0	0	0	0	0	3
SUBTOTAL	63	1131	13	0	1207	4	55	0	0	59	0	29	0	0	29	0	0	0	0	0	11

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	19	336	3	0	358	0	9	0	0	9	0	3	0	0	3	0	0	0	0	0	1
16:15	18	370	3	0	391	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	1
16:30	19	371	4	0	394	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	2
16:45	27	372	7	0	406	1	9	0	0	10	0	5	0	0	5	0	0	0	0	0	0
17:00	20	372	1	0	393	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	7
17:15	21	371	8	0	400	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	2
17:30	17	375	4	0	396	1	3	0	0	4	0	2	0	0	2	0	0	0	0	0	0
17:45	22	382	5	0	409	0	5	0	0	5	0	3	0	0	3	0	0	0	0	0	1
SUBTOTAL	163	2949	35	0	3147	2	51	0	0	53	0	22	0	0	22	0	0	0	0	0	14
GRAND TOTAL	226	4080	48	0	4354	6	106	0	0	112	0	51	0	0	51	0	0	0	0	0	25

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	2	185	0	0	187	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	1
07:15	5	178	3	0	186	0	13	0	0	13	1	3	0	0	4	0	0	0	0	0	0
07:30	4	182	3	0	189	0	7	1	0	8	0	3	0	0	3	0	0	0	0	0	1
07:45	8	247	3	0	258	0	16	0	0	16	1	3	0	0	4	0	0	0	0	0	1
08:00	5	228	1	0	234	0	11	0	0	11	0	2	0	0	2	0	0	0	0	0	1
08:15	4	304	4	0	312	0	7	0	0	7	1	3	0	0	4	0	0	0	0	0	0
08:30	5	276	7	0	288	0	10	0	0	10	0	2	0	0	2	0	0	0	0	0	2
08:45	3	308	5	0	316	0	11	0	0	11	1	2	0	0	3	0	0	0	0	0	1
SUBTOTAL	36	1908	26	0	1970	0	85	1	0	86	4	20	0	0	24	0	0	0	0	0	7

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundas St E

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	12	221	1	0	234	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	4
16:15	11	283	3	0	297	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	1
16:30	8	264	7	0	279	1	7	1	0	9	0	3	0	0	3	0	0	0	0	0	7
16:45	9	272	5	0	286	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	6
17:00	11	293	2	0	306	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	2
17:15	8	291	4	0	303	0	8	0	0	8	0	2	0	0	2	0	0	0	0	0	0
17:30	5	275	5	0	285	0	6	0	0	6	0	2	0	0	2	0	0	0	0	0	5
17:45	5	272	6	0	283	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	5
SUBTOTAL	69	2171	33	0	2273	1	48	1	0	50	0	23	0	0	23	0	0	0	0	0	30
GRAND TOTAL	105	4079	59	0	4243	1	133	2	0	136	4	43	0	0	47	0	0	0	0	0	37

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection **** **Major Road:** Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	51	26	77
Trucks	0	0	0
Buses	1	2	3
Bicycles	0	0	0
	52	**28**	**80**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	1	0
Trucks	0	0	0	0
Cars	36	3	12	0
Totals	**36**	**3**	**13**	**0**

East Approach

	Out	In	Total
Cars	725	1178	1903
Trucks	39	43	82
Buses	13	10	23
Bicycles	0	0	0
	777	**1231**	**2008**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	2	0	17	**19**
0	9	39	1116	**1164**
0	0	0	17	**17**

Peds: 9

Peds: 4

Peds: 6

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
8	8	0	0	0
725	675	37	13	0
44	42	2	0	0

Peds: 9

West Approach

	Out	In	Total
Cars	1150	718	1868
Trucks	39	37	76
Buses	11	13	24
Bicycles	0	0	0
	1200	**768**	**1968**

Totals	**7**	**1**	**54**	**0**
Cars	7	1	50	0
Trucks	0	0	4	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Commercial Access

South Approach

	Out	In	Total
Cars	58	62	120
Trucks	4	2	6
Buses	0	0	0
Bicycles	0	0	0
	62	**64**	**126**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Arena Rd						South Approach Commercial Access						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	4	1	7	0	1	12	1	0	9	0	4	10	9	146	1	0	0	156	5	241	1	0	1	247	425
08:15	4	1	15	0	0	20	2	0	13	0	2	15	15	174	2	0	0	191	5	314	4	0	0	323	549
08:30	2	0	7	0	6	9	1	1	20	0	1	22	9	205	2	0	3	216	5	288	7	0	2	300	547
08:45	3	1	7	0	2	11	3	0	12	0	2	15	11	200	3	0	3	214	4	321	5	0	1	330	570
Grand Total	**13**	**3**	**36**	**0**	**9**	**52**	**7**	**1**	**54**	**0**	**9**	**62**	**44**	**725**	**8**	**0**	**6**	**777**	**19**	**1164**	**17**	**0**	**4**	**1200**	**2091**
Approach %	25	5.8	69.2	0		-	11.3	1.6	87.1	0		-	5.7	93.3	1	0		-	1.6	97	1.4	0		-	
Totals %	0.6	0.1	1.7	0		2.5	0.3	0	2.6	0		3	2.1	34.7	0.4	0		37.2	0.9	55.7	0.8	0		57.4	
PHF	**0.81**	**0.75**	**0.6**	**0**		**0.65**	**0.58**	**0.25**	**0.68**	**0**		**0.7**	**0.73**	**0.88**	**0.67**	**0**		**0.9**	**0.95**	**0.91**	**0.61**	**0**		**0.91**	**0.92**
Cars	12	3	36	0		51	7	1	50	0		58	42	675	8	0		725	17	1116	17	0		1150	1984
% Cars	92.3	100	100	0		98.1	100	100	92.6	0		93.5	95.5	93.1	100	0		93.3	89.5	95.9	100	0		95.8	94.9
Trucks	0	0	0	0		0	0	0	4	0		4	2	37	0	0		39	0	39	0	0		39	82
% Trucks	0	0	0	0		0	0	0	7.4	0		6.5	4.5	5.1	0	0		5	0	3.4	0	0		3.3	3.9
Buses	1	0	0	0		1	0	0	0	0		0	0	13	0	0		13	2	9	0	0		11	25
% Buses	7.7	0	0	0		1.9	0	0	0	0		0	0	1.8	0	0		1.7	10.5	0.8	0	0		0.9	1.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					9	-					9	-					6	-					4	-	28
% Peds					32.1	-					32.1	-					21.4	-					14.3	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:30:00
To:	18:00:00	To:	17:30:00

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Signalized Intersection **** **Major Road:** Dundas St E runs E/W

North Approach

	Out	In	Total
Cars	43	67	110
Trucks	0	1	1
Buses	0	0	0
Bicycles	0	0	0
	43	**68**	**111**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	0	0
Cars	26	2	15	0
Totals	**26**	**2**	**15**	**0**

East Approach

	Out	In	Total
Cars	1593	1245	2838
Trucks	27	24	51
Buses	13	12	25
Bicycles	0	0	0
	1633	**1281**	**2914**

Dundas St E

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	1	36	**37**
0	12	24	1120	**1156**
0	0	1	18	**19**

Peds: 15

Peds: 11

Peds: 11

Peds: 24

Dundas St E

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
20	20	0	0	0
1525	1486	26	13	0
88	87	1	0	0

West Approach

	Out	In	Total
Cars	1174	1532	2706
Trucks	26	27	53
Buses	12	13	25
Bicycles	0	0	0
	1212	**1572**	**2784**

Totals	**21**	**11**	**110**	**0**
Cars	20	11	110	0
Trucks	1	0	0	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Commercial Access

South Approach

	Out	In	Total
Cars	141	107	248
Trucks	1	2	3
Buses	0	0	0
Bicycles	0	0	0
	142	**109**	**251**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundas St E & Arena Rd - Commercial Access
Site Code: 2219300003
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Arena Rd						South Approach Commercial Access						East Approach Dundas St E						West Approach Dundas St E						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:30	5	0	9	0	1	14	8	3	30	0	4	41	19	379	4	0	2	402	9	274	8	0	7	291	748
16:45	3	1	5	0	2	9	4	4	31	0	6	39	28	386	7	0	0	421	9	282	5	0	6	296	765
17:00	4	0	6	0	2	10	4	3	23	0	8	30	20	381	1	0	7	402	11	299	2	0	2	312	754
17:15	3	1	6	0	6	10	5	1	26	0	6	32	21	379	8	0	2	408	8	301	4	0	0	313	763
Grand Total	**15**	**2**	**26**	**0**	**11**	**43**	**21**	**11**	**110**	**0**	**24**	**142**	**88**	**1525**	**20**	**0**	**11**	**1633**	**37**	**1156**	**19**	**0**	**15**	**1212**	**3030**
Approach %	34.9	4.7	60.5	0		-	14.8	7.7	77.5	0		-	5.4	93.4	1.2	0		-	3.1	95.4	1.6	0		-	
Totals %	0.5	0.1	0.9	0		1.4	0.7	0.4	3.6	0		4.7	2.9	50.3	0.7	0		53.9	1.2	38.2	0.6	0		40	
PHF	**0.75**	**0.5**	**0.72**	**0**		**0.77**	**0.66**	**0.69**	**0.89**	**0**		**0.87**	**0.79**	**0.99**	**0.63**	**0**		**0.97**	**0.84**	**0.96**	**0.59**	**0**		**0.97**	**0.99**
Cars	15	2	26	0		43	20	11	110	0		141	87	1486	20	0		1593	36	1120	18	0		1174	2951
% Cars	100	100	100	0		100	95.2	100	100	0		99.3	98.9	97.4	100	0		97.6	97.3	96.9	94.7	0		96.9	97.4
Trucks	0	0	0	0		0	1	0	0	0		1	1	26	0	0		27	1	24	1	0		26	54
% Trucks	0	0	0	0		0	4.8	0	0	0		0.7	1.1	1.7	0	0		1.7	2.7	2.1	5.3	0		2.1	1.8
Buses	0	0	0	0		0	0	0	0	0		0	0	13	0	0		13	0	12	0	0		12	25
% Buses	0	0	0	0		0	0	0	0	0		0	0	0.9	0	0		0.8	0	1	0	0		1	0.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					24	-					11	-					15	-	61
% Peds					18	-					39.3	-					18	-					24.6	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

Queen Frederica Dr - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	0	108	13	0	121	5	12	37	0	0	49	2	170
08:00 - 09:00	0	116	23	0	139	3	17	58	0	0	75	4	214
BREAK													
16:00 - 17:00	0	72	25	0	97	12	37	128	0	0	165	12	262
17:00 - 18:00	0	117	37	0	154	5	42	139	0	0	181	7	335
GRAND TOTAL	**0**	**413**	**98**	**0**	**511**	**25**	**108**	**362**	**0**	**0**	**470**	**25**	**981**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

Dundix Rd - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	0	0	0	0	0	0	23	0	27	0	50	4	50
08:00 - 09:00	0	0	0	0	0	0	29	0	46	0	75	5	75
BREAK													
16:00 - 17:00	0	0	0	0	0	0	24	0	18	0	42	6	42
17:00 - 18:00	0	0	0	0	0	0	15	0	32	0	47	2	47
GRAND TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**91**	**0**	**123**	**0**	**214**	**17**	**214**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	31	1	0	32	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
07:15	0	15	4	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30	0	29	2	0	31	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45	0	31	5	0	36	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
08:00	0	28	5	0	33	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:15	0	24	5	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30	0	34	8	0	42	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
08:45	0	28	5	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	220	35	0	255	0	3	0	0	3	0	1	1	0	2	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	16	4	0	20	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
16:15	0	13	4	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	0	19	7	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
16:45	0	22	10	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:00	0	28	8	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:15	0	27	12	0	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	35	7	0	42	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
17:45	0	26	10	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	186	62	0	248	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	17
GRAND TOTAL	0	406	97	0	503	0	4	0	0	4	0	3	1	0	4	0	0	0	0	0	25

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
					Total					Total					Total					Total	
07:00	3	7	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	4	15	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	2	10	0	0	12	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	1
07:45	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	3	18	0	0	21	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	2
08:15	2	14	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	5	10	0	0	15	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	1
08:45	6	11	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	27	89	0	0	116	0	4	0	0	4	2	2	0	0	4	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Queen Frederica Dr

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	5	23	0	0	28	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
16:15	9	36	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	13	32	0	0	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
16:45	9	37	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	10	42	0	0	52	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
17:15	11	35	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:30	8	34	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	13	27	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SUBTOTAL	78	266	0	0	344	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	19
GRAND TOTAL	105	355	0	0	460	0	5	0	0	5	3	2	0	0	5	0	0	0	0	0	25

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	3	0	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	4	0	4	0	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
07:30	7	0	11	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	7	0	8	0	15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
08:00	3	0	6	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15	12	0	14	0	26	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:30	6	0	11	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45	6	0	15	0	21	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
SUBTOTAL	48	0	73	0	121	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	6	0	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	6	0	6	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	3	0	7	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
16:45	9	0	2	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	6	0	8	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	4	0	8	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	3	0	12	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	2	0	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	39	0	50	0	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
GRAND TOTAL	87	0	123	0	210	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	17

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Queen Frederica Dr runs N/S

North Approach

	Out	In	Total
Cars	137	80	217
Trucks	1	4	5
Buses	1	3	4
Bicycles	0	0	0
	139	**87**	**226**

Queen Frederica Dr

Bicycles	0	0	0
Buses	0	1	0
Trucks	0	1	0
Cars	23	114	0
Totals	**23**	**116**	**0**

Peds: 3

Dundix Rd

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	2	0	27	**29**
0	0	0	46	**46**

Peds: 5

Peds: 0

Peds: 4

Totals	**17**	**58**	**0**
Cars	16	53	0
Trucks	0	4	0
Buses	1	1	0
Bicycles	0	0	0

Queen Frederica Dr

West Approach

	Out	In	Total
Cars	73	39	112
Trucks	0	0	0
Buses	2	1	3
Bicycles	0	0	0
	75	**40**	**115**

South Approach

	Out	In	Total
Cars	69	160	229
Trucks	4	1	5
Buses	2	1	3
Bicycles	0	0	0
	75	**162**	**237**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Queen Frederica Dr						South Approach Queen Frederica Dr						East Approach						West Approach Dundix Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00		29	5	0	2	34	3	21		0	2	24					0		3		6	0	1	9	67
08:15		24	5	0	1	29	2	14		0	0	16					0		13		14	0	1	27	72
08:30		35	8	0	0	43	6	12		0	1	18					0		6		11	0	1	17	78
08:45		28	5	0	0	33	6	11		0	1	17					0		7		15	0	2	22	72
Grand Total		**116**	**23**	**0**	**3**	**139**	**17**	**58**		**0**	**4**	**75**					**0**	**0**	**29**		**46**	**0**	**5**	**75**	**289**
Approach %		83.5	16.5	0		-	22.7	77.3		0		-						-	38.7		61.3	0		-	
Totals %		40.1	8	0		48.1	5.9	20.1		0		26						0	10		15.9	0		26	
PHF		**0.83**	**0.72**	**0**		**0.81**	**0.71**	**0.69**		**0**		**0.78**						**0**	**0.56**		**0.77**	**0**		**0.69**	**0.93**
Cars		114	23	0		137	16	53		0		69						0	27		46	0		73	279
% Cars		98.3	100	0		98.6	94.1	91.4		0		92						0	93.1		100	0		97.3	96.5
Trucks		1	0	0		1	0	4		0		4						0	0		0	0		0	5
% Trucks		0.9	0	0		0.7	0	6.9		0		5.3						0	0		0	0		0	1.7
Buses		1	0	0		1	1	1		0		2						0	2		0	0		2	5
% Buses		0.9	0	0		0.7	5.9	1.7		0		2.7						0	6.9		0	0		2.7	1.7
Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
% Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
Peds					3	-					4	-					0	-					5	-	12
% Peds					25	-					33.3	-					0	-					41.7	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:45:00
To:	18:00:00	To:	17:45:00

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Queen Frederica Dr runs N/S

North Approach

	Out	In	Total
Cars	149	170	319
Trucks	1	1	2
Buses	0	0	0
Bicycles	0	0	0
	150	**171**	**321**

Queen Frederica Dr

Bicycles	0	0	0
Buses	0	0	0
Trucks	0	1	0
Cars	37	112	0
Totals	**37**	**113**	**0**

Peds: 6

Dundix Rd

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	0	22	**22**
0	0	0	30	**30**

Peds: 4

Peds: 0

Peds: 5

Totals	**38**	**149**	**0**
Cars	38	148	0
Trucks	0	1	0
Buses	0	0	0
Bicycles	0	0	0

Queen Frederica Dr

West Approach

	Out	In	Total
Cars	52	75	127
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	52	**75**	**127**

South Approach

	Out	In	Total
Cars	186	142	328
Trucks	1	1	2
Buses	0	0	0
Bicycles	0	0	0
	187	**143**	**330**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Queen Frederica Dr & Dundix Rd
Site Code: 2219300004
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Queen Frederica Dr						South Approach Queen Frederica Dr						East Approach						West Approach Dundix Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45		22	10	0	1	32	9	37		0	2	46					0		9		2	0	2	11	89
17:00		28	8	0	4	36	10	43		0	0	53					0		6		8	0	1	14	103
17:15		27	12	0	0	39	11	35		0	2	46					0		4		8	0	0	12	97
17:30		36	7	0	1	43	8	34		0	1	42					0		3		12	0	1	15	100
Grand Total		**113**	**37**	**0**	**6**	**150**	**38**	**149**		**0**	**5**	**187**					**0**	**0**	**22**		**30**	**0**	**4**	**52**	**389**
Approach %		75.3	24.7	0		-	20.3	79.7		0		-						-	42.3		57.7	0		-	
Totals %		29	9.5	0		38.6	9.8	38.3		0		48.1						0	5.7		7.7	0		13.4	
PHF		**0.78**	**0.77**	**0**		**0.87**	**0.86**	**0.87**		**0**		**0.88**						**0**	**0.61**		**0.63**	**0**		**0.87**	**0.94**
Cars		112	37	0		149	38	148		0		186						0	22		30	0		52	387
% Cars		99.1	100	0		99.3	100	99.3		0		99.5						0	100		100	0		100	99.5
Trucks		1	0	0		1	0	1		0		1						0	0		0	0		0	2
% Trucks		0.9	0	0		0.7	0	0.7		0		0.5						0	0		0	0		0	0.5
Buses		0	0	0		0	0	0		0		0						0	0		0	0		0	0
% Buses		0	0	0		0	0	0		0		0						0	0		0	0		0	0
Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
% Bicycles		0	0	0		0	0	0		0		0						0	0		0	0		0	0
Peds					6	-					5	-					0	-					4	-	15
% Peds					40	-					33.3	-					0	-					26.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

Arena Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	11	15	0	0	26	3	1	5	20	0	26	3	52
08:00 - 09:00	12	16	0	0	28	0	1	8	18	0	27	0	55
BREAK													
16:00 - 17:00	10	10	0	0	20	5	2	30	34	0	66	4	86
17:00 - 18:00	9	13	0	0	22	1	1	30	28	0	59	8	81
GRAND TOTAL	**42**	**54**	**0**	**0**	**96**	**9**	**5**	**73**	**100**	**0**	**178**	**15**	**274**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

Dundix Rd - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Buses, Bicycles						Includes Cars, Trucks, Buses, Bicycles						
Hour	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Left**	**Thru**	**Right**	**U-Turn**	**Total**	**Peds**	**Total**
07:00 - 08:00	25	1	3	0	29	2	0	2	2	0	4	5	33
08:00 - 09:00	33	1	2	0	36	2	0	6	4	0	10	1	46
BREAK													
16:00 - 17:00	34	7	21	0	62	6	0	2	3	0	5	3	67
17:00 - 18:00	23	2	16	0	41	6	0	2	1	0	3	3	44
GRAND TOTAL	**115**	**11**	**42**	**0**	**168**	**16**	**0**	**12**	**10**	**0**	**22**	**12**	**190**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30	4	7	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	5	3	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	23	31	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

North Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:15	2	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16:45	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:00	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	2	3	0	0	5	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	19	22	0	0	41	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	6
GRAND TOTAL	42	53	0	0	95	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	1	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	1	1	4	0	6	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:30	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	8	0	8	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
08:00	0	2	5	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	2	4	0	6	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
08:30	1	2	4	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	2	3	0	5	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
SUBTOTAL	2	13	34	0	49	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

South Approach - Arena Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	1	6	8	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	8	7	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	1	7	9	0	17	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
16:45	0	9	9	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	7	9	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:15	1	9	8	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	6	6	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
17:45	0	8	5	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	3	60	61	0	124	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	12
GRAND TOTAL	5	73	95	0	173	0	0	1	0	1	0	0	4	0	4	0	0	0	0	0	15

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15	6	0	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	7	1	2	0	10	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
07:45	5	0	0	0	5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:00	7	0	2	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	4	1	0	0	5	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
08:45	7	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	55	2	5	0	62	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	4

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

East Approach - Dundix Rd

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	8	3	4	0	15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
16:15	10	2	5	0	17	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16:30	8	1	6	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	6	1	6	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	5	0	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
17:15	7	1	5	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	6	0	4	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	5	1	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	55	9	37	0	101	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	12
GRAND TOTAL	110	11	42	0	163	1	0	0	0	1	4	0	0	0	4	0	0	0	0	0	16

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Private Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15	0	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	8	6	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Municipality: Mississauga
Count Date: Jun 07, 2022

West Approach - Private Access

Start Time	Cars					Trucks					Buses					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
16:00	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	0	4	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
GRAND TOTAL	0	12	10	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:30:00
To:	09:00:00	To:	08:30:00

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Arena Rd runs N/S

North Approach

	Out	In	Total
Cars	34	11	45
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	34	**11**	**45**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	0	0
Cars	0	21	13	0
Totals	**0**	**21**	**13**	**0**

East Approach

	Out	In	Total
Cars	38	38	76
Trucks	0	0	0
Buses	2	2	4
Bicycles	0	0	0
	40	**40**	**80**

Private Access

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	0	0	**0**
0	0	0	5	**5**
0	0	0	5	**5**

Peds: 1

Peds: 2

Peds: 1

Dundix Rd

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
4	4	0	0	0
1	1	0	0	0
35	33	0	2	0

Peds: 1

West Approach

	Out	In	Total
Cars	10	1	11
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	10	**1**	**11**

Totals	**0**	**7**	**22**	**0**
Cars	0	7	20	0
Trucks	0	0	0	0
Buses	0	0	2	0
Bicycles	0	0	0	0

Arena Rd

South Approach

	Out	In	Total
Cars	27	59	86
Trucks	0	0	0
Buses	2	2	4
Bicycles	0	0	0
	29	**61**	**90**

Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Arena Rd						South Approach Arena Rd						East Approach Dundix Rd						West Approach Private Access						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	4	7	0	0	1	11	0	3	3	0	0	6	8	1	2	0	0	11	0	1	0	0	0	1	29
07:45	5	3	0	0	0	8	0	0	9	0	1	9	6	0	0	0	1	6	0	0	2	0	1	2	25
08:00	2	7	0	0	0	9	0	2	5	0	0	7	7	0	2	0	0	9	0	1	0	0	1	1	26
08:15	2	4	0	0	0	6	0	2	5	0	0	7	14	0	0	0	0	14	0	3	3	0	0	6	33
Grand Total	**13**	**21**	**0**	**0**	**1**	**34**	**0**	**7**	**22**	**0**	**1**	**29**	**35**	**1**	**4**	**0**	**1**	**40**	**0**	**5**	**5**	**0**	**2**	**10**	**113**
Approach %	38.2	61.8	0	0		-	0	24.1	75.9	0		-	87.5	2.5	10	0		-	0	50	50	0		-	
Totals %	11.5	18.6	0	0		30.1	0	6.2	19.5	0		25.7	31	0.9	3.5	0		35.4	0	4.4	4.4	0		8.8	
PHF	**0.65**	**0.75**	**0**	**0**		**0.77**	**0**	**0.58**	**0.61**	**0**		**0.81**	**0.63**	**0.25**	**0.5**	**0**		**0.71**	**0**	**0.42**	**0.42**	**0**		**0.42**	**0.86**
Cars	13	21	0	0		34	0	7	20	0		27	33	1	4	0		38	0	5	5	0		10	109
% Cars	100	100	0	0		100	0	100	90.9	0		93.1	94.3	100	100	0		95	0	100	100	0		100	96.5
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Buses	0	0	0	0		0	0	0	2	0		2	2	0	0	0		2	0	0	0	0		0	4
% Buses	0	0	0	0		0	0	0	9.1	0		6.9	5.7	0	0	0		5	0	0	0	0		0	3.5
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					1	-					1	-					1	-					2	-	5
% Peds					20	-					20	-					20	-					40	-	

Peak Hour Diagram

Specified Period

From: 16:00:00
To: 18:00:00

One Hour Peak

From: 16:00:00
To: 17:00:00

Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Arena Rd runs N/S

North Approach

	Out	In	Total
Cars	20	51	71
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	20	**51**	**71**

Arena Rd

Bicycles	0	0	0	0
Buses	0	0	0	0
Trucks	0	0	0	0
Cars	0	10	10	0
Totals	**0**	**10**	**10**	**0**

East Approach

	Out	In	Total
Cars	60	45	105
Trucks	1	1	2
Buses	1	0	1
Bicycles	0	0	0
	62	**46**	**108**

Private Access

Bicycles	Buses	Trucks	Cars	Totals
0	0	0	0	**0**
0	0	0	0	**0**
0	0	0	2	**2**
0	0	0	3	**3**

Peds: 5

Peds: 3

Peds: 6

Dundix Rd

Totals	Cars	Trucks	Buses	Bicycles
0	0	0	0	0
21	21	0	0	0
7	7	0	0	0
34	32	1	1	0

Peds: 4

Totals	**2**	**30**	**34**	**0**
Cars	2	30	33	0
Trucks	0	0	1	0
Buses	0	0	0	0
Bicycles	0	0	0	0

Arena Rd

West Approach

	Out	In	Total
Cars	5	9	14
Trucks	0	0	0
Buses	0	0	0
Bicycles	0	0	0
	5	**9**	**14**

South Approach

	Out	In	Total
Cars	65	45	110
Trucks	1	1	2
Buses	0	1	1
Bicycles	0	0	0
	66	**47**	**113**

- Cars - Trucks - Buses - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

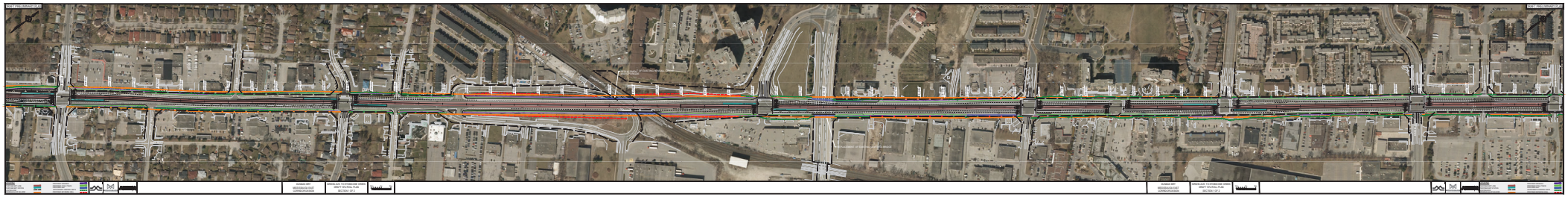
Intersection: Dundix Rd & Arena Rd - Private Access
Site Code: 2219300005
Count Date: Jun 07, 2022
Period: 16:00 - 18:00

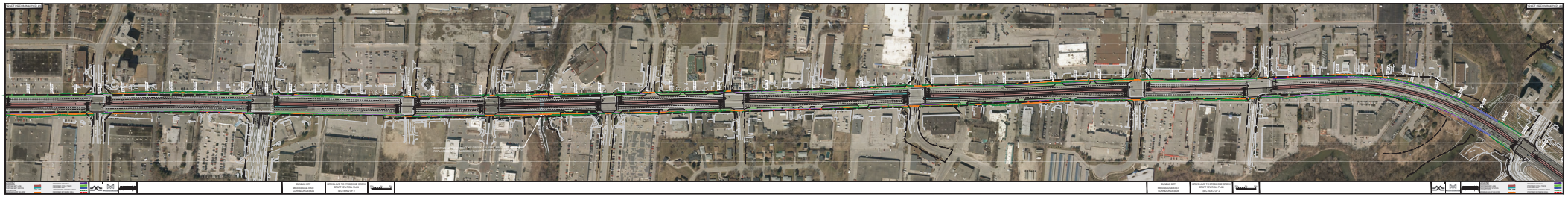
Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Arena Rd						South Approach Arena Rd						East Approach Dundix Rd						West Approach Private Access						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	2	2	0	0	2	4	1	6	8	0	0	15	9	3	4	0	3	16	0	0	2	0	0	2	37
16:15	2	3	0	0	0	5	0	8	7	0	1	15	11	2	5	0	0	18	0	1	0	0	1	1	39
16:30	3	2	0	0	2	5	1	7	10	0	1	18	8	1	6	0	1	15	0	0	1	0	0	1	39
16:45	3	3	0	0	1	6	0	9	9	0	2	18	6	1	6	0	2	13	0	1	0	0	2	1	38
Grand Total	**10**	**10**	**0**	**0**	**5**	**20**	**2**	**30**	**34**	**0**	**4**	**66**	**34**	**7**	**21**	**0**	**6**	**62**	**0**	**2**	**3**	**0**	**3**	**5**	**153**
Approach %	50	50	0	0		-	3	45.5	51.5	0		-	54.8	11.3	33.9	0		-	0	40	60	0		-	
Totals %	6.5	6.5	0	0		13.1	1.3	19.6	22.2	0		43.1	22.2	4.6	13.7	0		40.5	0	1.3	2	0		3.3	
PHF	**0.83**	**0.83**	**0**	**0**		**0.83**	**0.5**	**0.83**	**0.85**	**0**		**0.92**	**0.77**	**0.58**	**0.88**	**0**		**0.86**	**0**	**0.5**	**0.38**	**0**		**0.63**	**0.98**
Cars	10	10	0	0		20	2	30	33	0		65	32	7	21	0		60	0	2	3	0		5	150
% Cars	100	100	0	0		100	100	100	97.1	0		98.5	94.1	100	100	0		96.8	0	100	100	0		100	98
Trucks	0	0	0	0		0	0	0	1	0		1	1	0	0	0		1	0	0	0	0		0	2
% Trucks	0	0	0	0		0	0	0	2.9	0		1.5	2.9	0	0	0		1.6	0	0	0	0		0	1.3
Buses	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	1
% Buses	0	0	0	0		0	0	0	0	0		0	2.9	0	0	0		1.6	0	0	0	0		0	0.7
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					5	-					4	-					6	-					3	-	18
% Peds					27.8	-					22.2	-					33.3	-					16.7	-	

Appendix C

Dundas Bus Rapid Transit Preliminary Detailed Design


DRAFT FOR CONSTRUCTION
DRAFT FOR CONSTRUCTION
DUNDAS WEST
BROADVIEW AVE
CORKSTOWN ROAD
PROFILE OF TO STATION ONE DRAFT FOR FINAL PLAN
SECTION 1 OF 2
DUNDAS WEST
BROADVIEW AVE
CORKSTOWN ROAD
PROFILE OF TO STATION ONE DRAFT FOR FINAL PLAN
SECTION 1 OF 2


DRAFT PRELIMINARY PLAN
DRAFT PRELIMINARY PLAN
DUNBAR WAY
BRIDGEWATER-EAST
COMMONWEALTH
PROPOSED TLT FIXED GUIideWAY
DRAFT PRELIMINARY PLAN
SECTION 2 OF 2
DUNBAR WAY
BRIDGEWATER-EAST
COMMONWEALTH
PROPOSED TLT FIXED GUIideWAY
DRAFT PRELIMINARY PLAN
SECTION 2 OF 2
DRAFT PRELIMINARY PLAN
DRAFT PRELIMINARY PLAN

Appendix D

Background Development Trip Generation Figures and E-mail Correspondence

From: Tyler Xuereb
To: Nasteha Abdullahi
Cc: Michelle Chen; Mark Crockford
Subject: RE: 2022-050 1225 Dundas St Mississauga Data Request
Date: Thursday, June 2, 2022 1:56:28 PM
Attachments: image001.png
image002.png

Hi Nasteha,

Below are the recommended growth rates to be used along Dundas Street for your study.

	Compounded Annual Growth from Existing to 2026	
	EB	WB
AM Peak	0.5%	1.0%
PM Peak	0.5%	0.5%

	Compounded Annual Growth from 2026 to 2027	
	EB	WB
AM Peak	0.0%	0.0%
PM Peak	0.0%	0.0%

Rates from 2026 to 2027 show a 0.0% growth due to the lane reductions along Dundas Street as a result of BRT implementation.

Regards,

Tyler Xuereb
Transportation Planning Analyst
T 905-615-3200 ext.4783
Tyler.xuereb@mississauga.ca

City of Mississauga | Transportation and Works Department,
Infrastructure Planning and Engineering Services Division

Please consider the environment before printing.

From: Nasteha Abdullahi <nasteha.abdullahi@cghtransportation.com>
Sent: Thursday, June 2, 2022 10:48 AM

Appendix E

Mode Shares and E-mail Correspondence

From:	Michelle Chen
To:	Norbert Orzel
Cc:	Mark Crockford; Kate Vassilyev
Subject:	RE: Mode Share Targets in the City of Mississauga
Date:	Wednesday, June 8, 2022 3:45:00 PM
Attachments:	image001.png image004.png

Hi Norbert,

Based on the TOR comments from the City, the Dundas BRT study completion is anticipated to be completed this year (2022) with the design. It is anticipated that the construction commencement will be in 2024.
Also, the Dundas Bus Rapid Transit Mississauga East Project Live Meeting – January 27, 2022, 1:15:15 mentioned that if successfully getting the funding, the construction will occur between 2024 and 2027.
https://www.metrolinxengage.com/en/content/dundas-bus-rapid-transit-mississauga-east-project-live-meeting-%E2%80%93-january-27-2022
Therefore, we assumed that it will be completed in 2027.

After discussing with our client, the full buildout year 2028 was more in line with their schedule. Therefore, the horizon year would be the base year 2022, followed by a full buildout future horizon of 2028, and a 5-years beyond full buildout future horizon of 2028.
The applied mode shares provided in the previous email will be used for 2028 (full buildout year).

Regards,

Michelle

From: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Sent: Wednesday, June 8, 2022 11:51 AM
To: Michelle Chen <michelle.chen@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Michelle,

I'm okay with your suggested mode shares. One additional point I wanted to make is in regards to the Dundas BRT. My understanding is that the BRT would not be built by 2027 and as such I'm just wondering where did you get assumption that it would be built by 2027?

Thanks, Norbert

From: Michelle Chen <michelle.chen@cghtransportation.com>
Sent: Wednesday, June 8, 2022 11:12 AM

To: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Norbert,

Thanks for your input and suggestions. We've looked at the existing (2016) TTS data. Please see the table below.

Table 5: 2016 TTS Mode Shares

Travel Mode	2016 Mode Shares (TTS)
Auto Driver	63%
Auto Passenger	16%
Transit	14%
Cycling	0%
Walking	7%
Total	**100%**

It is noted that the 2016 TTS Transit share for the area in question has already reached the 2027 mode share targets that we calculated for the whole Region. (44% of sustainable (non-auto driver) mode share, consisting of approximately 17% of carpool, 14% of transit, 9% of active transportation, and 4% of others)

From the mode share targets shown in the Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018)), transit will increase by approximately 6% and cycling will increase approximately 2% from 2011 to 2041.
Because the development is located on Dundas Street, and the future BRT will be completed by 2027, it is expected that the cycling and transit will increase more than the % increase for region.

Mode Share in AM Peak Period	Baseline 2011	2041 'Vision'
Driving	62.6%	49.7%
Walking	6.8%	9.1%
Cycling	0.3%	2.0%
Transit	10.8%	17.0%
Carpool	15.2%	17.9%
Other	4.3%	4.3%
Sustainable Modes	**37.4%**	**50.3%**

We are thinking about shifting 6% from auto driver to transit and 2% from auto driver to cycling and using the mode share shown below. Please confirm if you agree with the applied mode shares.

Table 6: Applied Mode Shares

Travel Mode	Applied Mode Shares
Auto Driver	55%
Auto Passenger	16%
Transit	20%
Cycling	2%
Walking	7%
Total	**100%**

Regards,

Michelle Chen, EIT
CGH Transportation Inc.
P:343-777-2426
E: michelle.chen@CGHTransportation.com

From: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Sent: Tuesday, June 7, 2022 2:44 PM
To: Michelle Chen <michelle.chen@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Michelle,

I have reviewed the data you provided and while I don't have a concerns with the modal split values you are proposing to use I was wondering if you have reviewed existing (2016) Transportation Tomorrow Survey (TTS) data to look at existing travel behaviours in the area? The Regional values represent targets for the Region as a whole which may not be reflective of the area where the development is located, specifically the proposed development is located along Dundas St. which may experience higher levels of transit usage as compared to Region wide target values. I would suggest you review the existing TTS data to determine if the Regional target values are appropriate for this area. Using the TTS data you may also be able to decipher different values between commercial/ residential trips and also different values for different time periods of the day.

Thanks,

Norbert

From: Michelle Chen <michelle.chen@cghtransportation.com>
Sent: Thursday, June 2, 2022 10:42 AM
To: Norbert Orzel <Norbert.Orzel@mississauga.ca>

Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Norbert,

- The horizon year: The base year 2022, followed by a full buildout future horizon of 2027, and a 5-years beyond full buildout future horizon of 2027
- Yes, we will estimate person trip generation and apply the mode split
- Yes, it should be 44% sustainable mode share. It is interpolations from the projection to get the mode share for 2027. Please see the table shown below (from Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018)).

Mode Share in AM Peak Period	Baseline 2011	2041 'Vision'
Driving	62.6%	49.7%
Walking	6.8%	9.1%
Cycling	0.3%	2.0%
Transit	10.8%	17.0%
Carpool	15.2%	17.9%
Other	4.3%	4.3%
Sustainable Modes	**37.4%**	**50.3%**

Thank you,

Michelle

From: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Sent: Thursday, June 2, 2022 10:25 AM
To: Michelle Chen <michelle.chen@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Mode Share Targets in the City of Mississauga

Hi Michelle,

Thanks for your email. I have a few comments and questions in regards to your email:

-What is the horizon year of your analysis? The Region of Peel's mode split target is a long term goal and is identified for the AM Peak Period and as such it may not be appropriate to assume those rates for your application if the analysis horizon year is more short term.
-In terms of your trip generation process will you be developing person trips generated from the proposed development and applying the mode split adjustments on those numbers?
-I'm assuming from your email below that you meant 44% sustainable mode share and not 56% (i.e. 56% would be the auto driver split)? How were those numbers generated?

Thanks,

Norbert

From: Michelle Chen <michelle.chen@cghtransportation.com>
Sent: Wednesday, June 1, 2022 5:11 PM
To: Norbert Orzel <Norbert.Orzel@mississauga.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: Mode Share Targets in the City of Mississauga

Hi Norbert,

CGH has been retained to prepare a Traffic Impact Study for a property in eastern Mississauga at 1225 Dundas Street East.
Peel Region's Sustainable Transportation Strategy Development of Mode Share Targets (2018) is aiming for 50% of sustainable (non-auto driver) mode share in 2041, consisting of approximately 18% of carpool, 17% of transit, 11% of active transportation, and 4% of others. We would like to confirm whether interpolations from this projection could be applied to the proposed development. Could 56% of sustainable (non-auto driver) mode share, consisting of approximately 17% of carpool, 14% of transit, 9% of active transportation, and 4% of others be applied to the proposed development? Are there any differences between mode share for residential and commercial?

Regards,

Michelle Chen, EIT
CGH Transportation Inc.
P:343-777-2426
E: michelle.chen@CGHTransportation.com

Appendix F

The Synergy Trip Calculation

Project Name:	2022-50
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	8	8	1.00	5	5
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	31	31	1.00	64	64
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		1	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	13	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	1		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	7	8	7	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	30	31	30	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	4	5	4	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	63	64	63	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	2022-50
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	8	8	1.00	5	5
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	31	31	1.00	64	64
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		1	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	13	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	0		0	0	1	0
Restaurant	0	1		0	2	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	7	8	7	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	30	31	30	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	1	4	5	4	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	63	64	63	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix G

TTS 2016 Zone 3669 Data

Fri Jun 03 2022 14:39:27 GMT-0400 (Eastern Daylight Time) - Run Time: 2676ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 700-1000)

Trip 2016
Table:

	3669
68	8
128	18
147	14
271	25
285	32
308	47
309	18
312	4
324	36
336	10
339	28
439	19
2564	19
3344	13
3436	41
3604	15
3607	7
3608	12
3610	16
3622	14
3638	7
3641	27
3642	69
3643	14
3646	27
3649	13
3651	8
3653	60
3658	48
3660	20
3667	8
3668	83
3669	423
3673	12
3674	214
3675	70
3677	8
3678	72
3681	35
3689	12
3690	50
3709	12
3714	22
3716	15
3812	5
3841	8
3842	18
3844	19
3853	13
3861	23
3863	80
3874	26
8904	11

Fri Jun 03 2022 14:39:41 GMT-0400 (Eastern Daylight Time) - Run Time: 2602ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 700-1000)

Trip 2016
Table:

	3669
36	20
56	10
67	16
68	8
93	16
147	14
210	8
211	37
218	12
269	9
270	41
290	15
292	7
296	34
308	65
309	31
311	33
312	20
313	50
322	33
323	17
325	6
326	18
332	42
336	10
358	36
361	19
371	23
373	15
387	19
391	37
439	19
456	13
2236	46
2366	17
2400	34
2562	10
3323	18
3361	6
3385	12
3494	38
3601	8
3603	13
3605	24
3608	17
3610	16
3612	5
3626	22
3627	75
3632	34
3635	20
3645	22
3649	79
3650	27
3653	18
3654	43
3658	4
3659	11
3660	34
3661	33
3662	11
3663	11
3666	5
3668	46
3669	423
3670	59
3672	4
3673	44
3674	149
3675	67
3677	8
3678	24
3680	63
3692	18
3693	21
3698	99
3702	90
3703	8
3705	23
3706	7
3707	29
3709	8
3710	67
3711	10
3715	22
3719	19
3721	108
3831	10
3841	62
3842	58
3844	19
3846	69
3847	7
3851	39
3853	13
3857	10
3861	46
3863	11
3874	56
4024	33
4027	11
4035	46
4040	4
4041	46
4126	22
4185	30
4196	20
5142	28
6129	14
6258	46
7302	14

Fri Jun 03 2022 14:38:33 GMT-0400 (Eastern Daylight Time) - Run Time: 2379ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 1500-1800)

Trip 2016
Table:

	3669
43	10
45	14
56	10
57	20
65	7
69	18
89	10
110	41
147	14
210	8
211	18
222	11
285	32
290	15
292	7
295	11
296	34
309	25
311	33
313	40
323	33
326	10
332	42
336	27
351	10
371	12
379	13
386	14
387	19
388	25
391	37
403	25
439	19
465	16
2063	25
2082	7
2109	17
2236	46
2366	17
2400	34
2422	4
2562	10
2656	22
2702	28
3323	18
3339	12
3361	6
3364	18
3419	13
3429	9
3480	24
3494	38
3496	34
3605	24
3608	17
3610	30
3612	5
3613	11
3621	17
3626	10
3627	75
3635	43
3639	15
3649	59
3653	9
3654	70
3655	32
3656	10
3658	4
3660	39
3661	56
3664	13
3666	11
3667	12
3668	36
3669	195
3674	152
3675	37
3680	29
3682	28
3685	17
3686	69
3688	7
3692	18
3696	17
3698	65
3699	19
3701	42
3703	34
3705	23
3709	8
3710	67
3713	22
3715	37
3717	14
3720	16
3721	66
3816	44
3831	10
3834	11
3841	35
3842	58
3844	19
3848	18
3851	18
3857	54
3858	10
3860	22
3861	48
3862	11
3863	33
3874	35
3876	50
4005	21
4024	33
4027	11
4041	46
4069	11
4126	22
4196	20
5112	12
5142	28
6258	46
7572	4

Fri Jun 03 2022 14:37:20 GMT-0400 (Eastern Daylight Time) - Run Time: 2553ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 3669
and
Primary travel mode of trip - mode_prime In D
and
Start time of trip - start_time In 1500-1800)

Trip 2016
Table:

	3669
128	18
147	14
211	28
271	25
309	17
323	36
345	28
439	19
1171	14
3151	11
3324	50
3339	12
3344	13
3479	9
3602	4
3604	15
3610	11
3619	31
3632	18
3635	29
3639	13
3641	14
3642	38
3649	39
3651	10
3653	103
3654	78
3655	10
3656	14
3660	25
3661	41
3668	15
3669	195
3671	10
3673	12
3674	74
3675	32
3680	13
3682	9
3686	69
3693	7
3698	14
3701	27
3703	16
3709	42
3714	22
3716	15
3812	5
3841	8
3844	19
3848	18
3857	37
3858	16
3859	23
3860	11
3861	42
3863	58
3874	18
3879	7
4005	15
4193	10

Appendix H

Traffic Control Signal Warrants

Access #1 @ Arena Rd
2028&2033 FT

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	85	12%	12%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	22	13%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	70	10%	10%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	15	20%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Access #2 @ Dundix Rd
2028&2033 FT

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	72	10%	10%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	20	11%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	59	8%	0%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	0	0%		

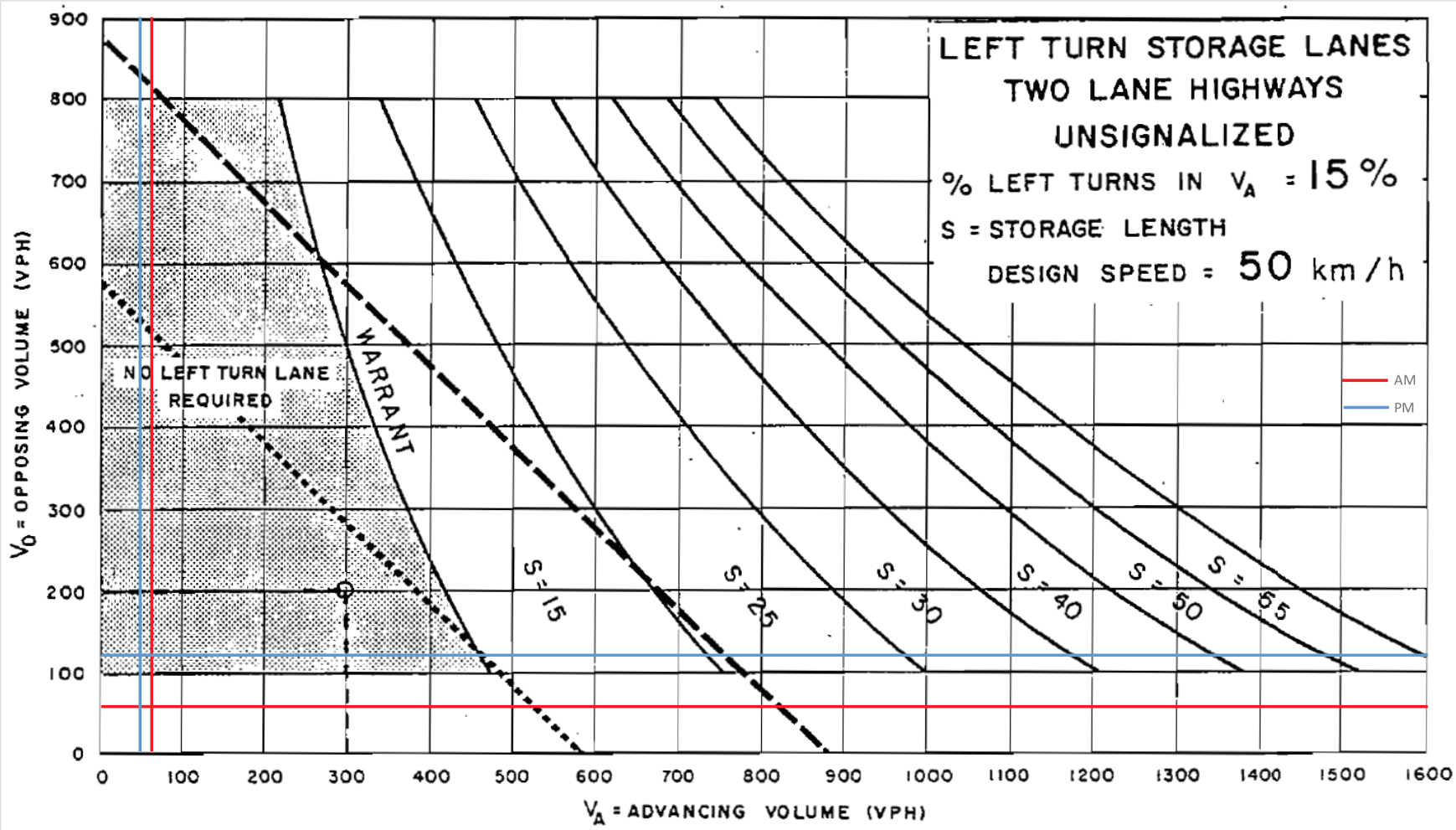
Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B

Appendix I

Left Turn Lane Warrants

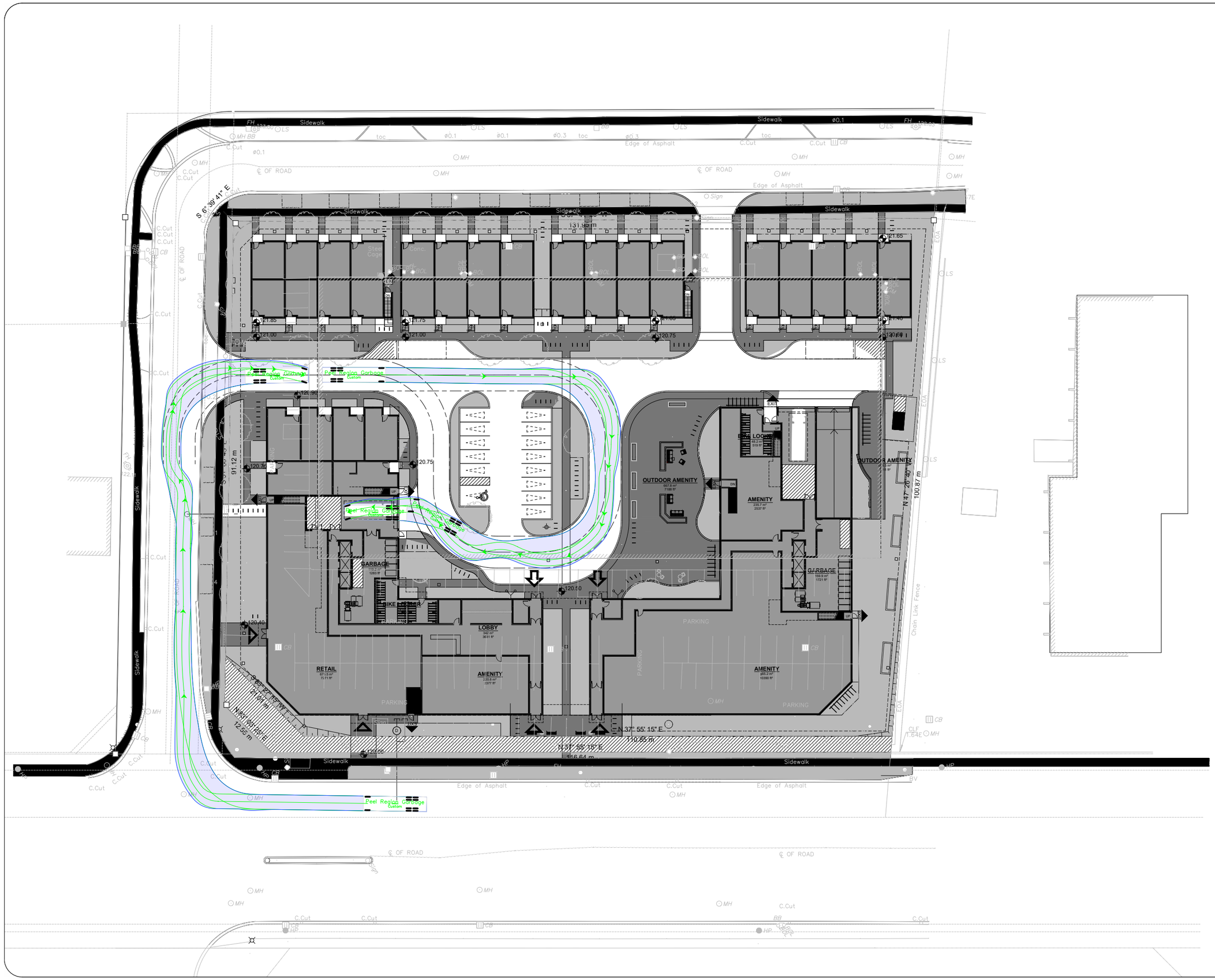
Site Access #2 and Dundix Road

Design Speed	Westbound Left				Yes										
50 km/h		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing
	AM	0	58	0	6	40	0	0	0	29	0	0	0	13.0%	46	58
	PM	0	49	0	13	69	0	0	0	23	0	0	0	15.9%	82	49


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 15 %
S = STORAGE LENGTH
DESIGN SPEED = 50 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S = 15
S = 25
S = 30
S = 40
S = 50
S = 55
AM
PM
V_O = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

Appendix J

Turning Template Drawings



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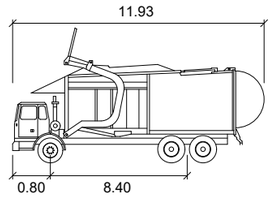


Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

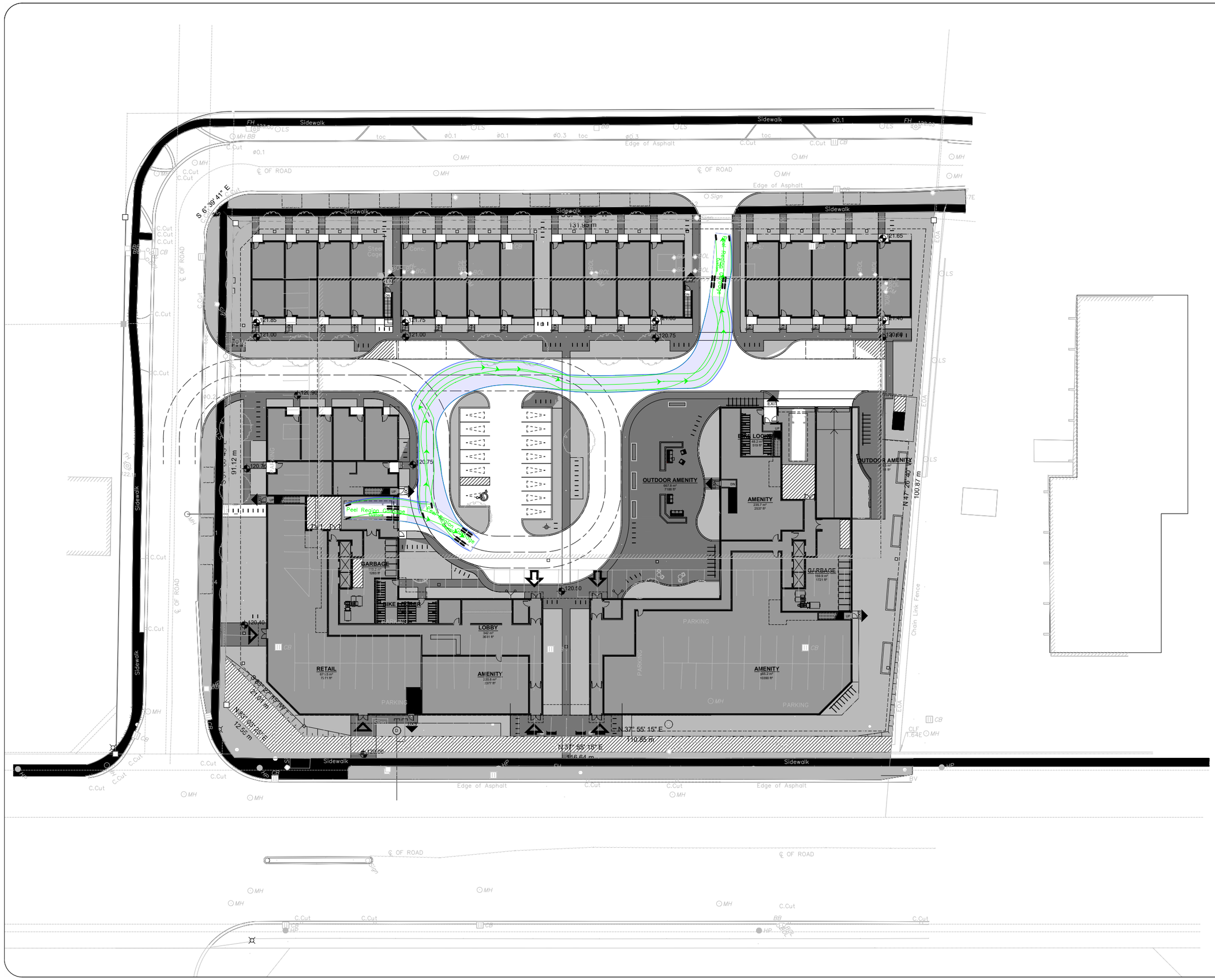
ARCHITECT:

SITE: 1225 Dundas Street E.

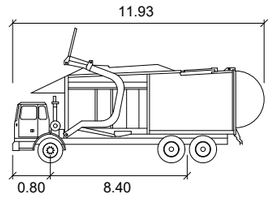
TITLE: Turning Movement Analysis
Garbage Movements (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	001	03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

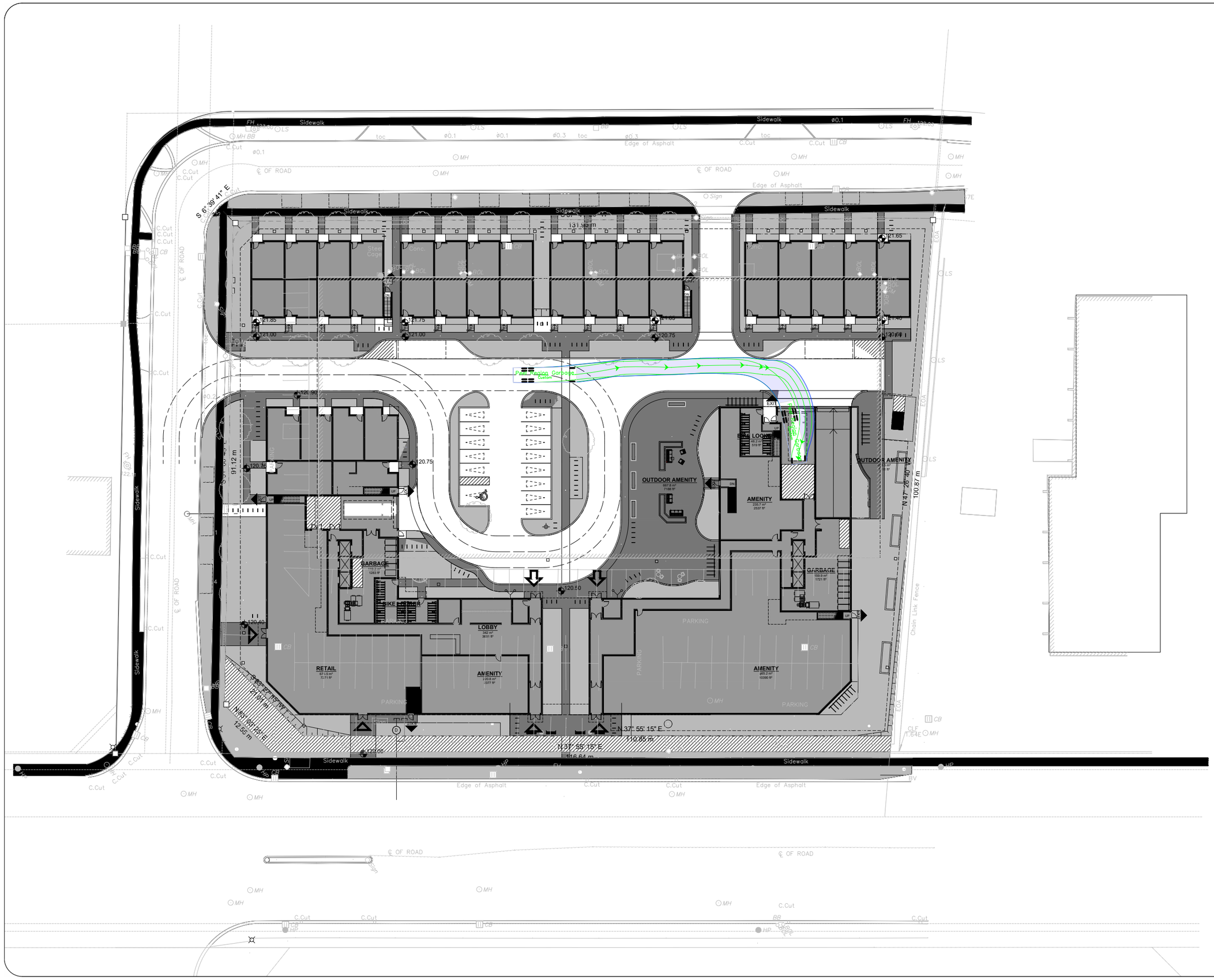
CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

ARCHITECT:

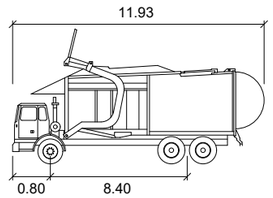
SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
Garbage Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC
PROJECT NO:	DRAWING NO:		REVISION:
2022-050	002		03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

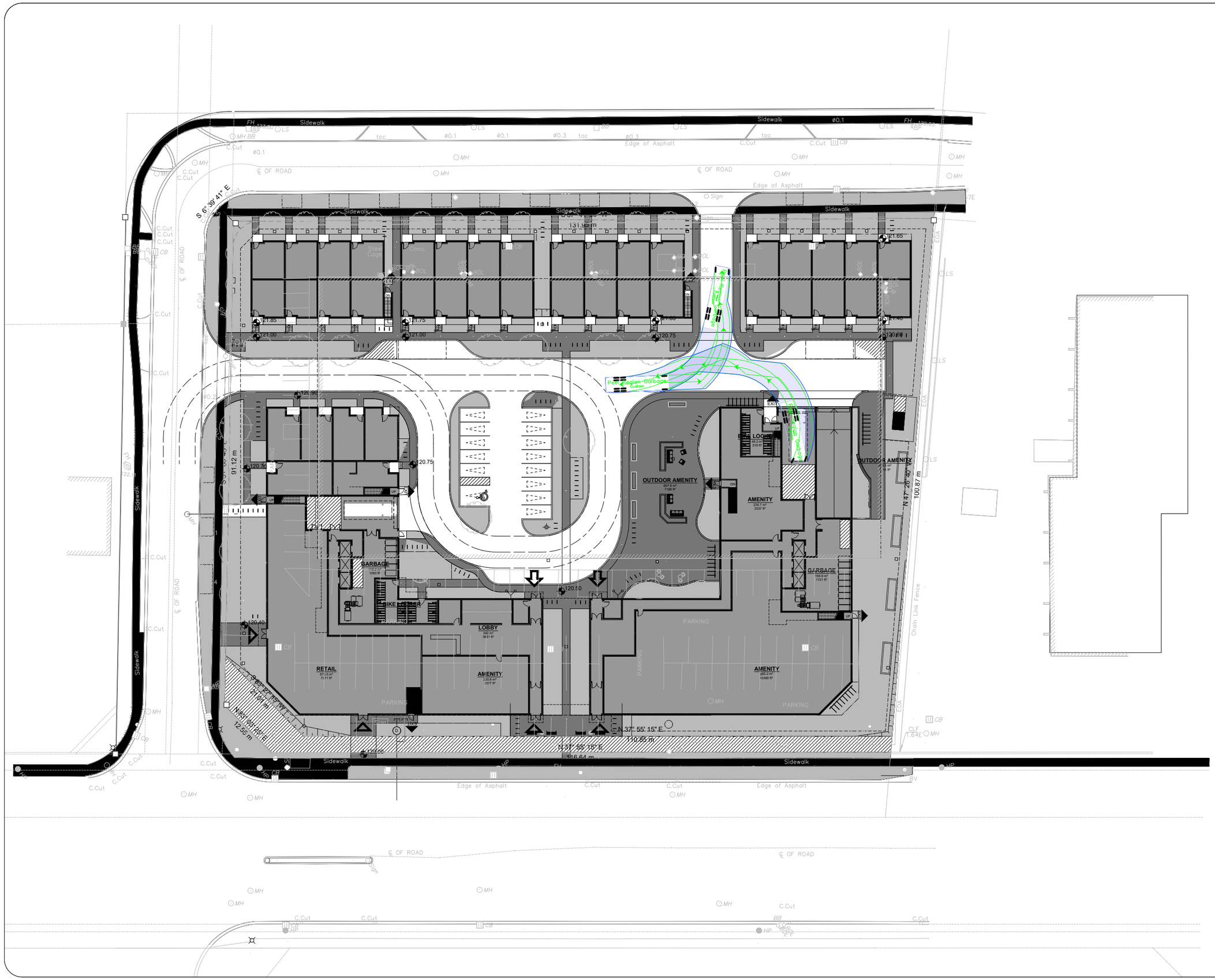
ARCHITECT:

SITE: 1225 Dundas Street E.

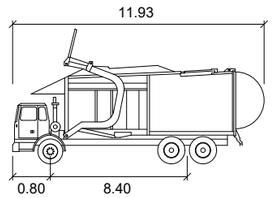
TITLE: Turning Movement Analysis
Garbage Movements (3)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	003	03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

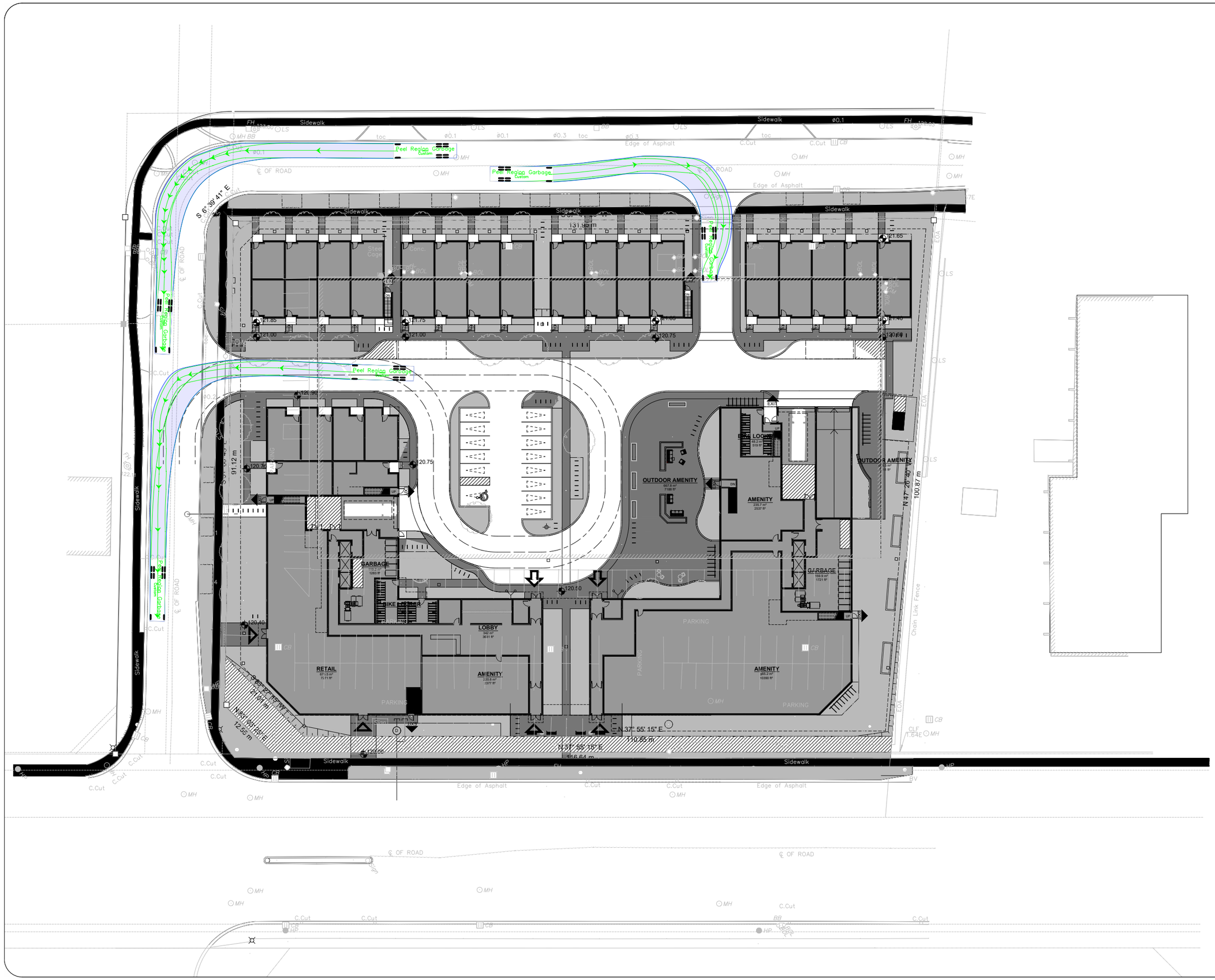
ARCHITECT:

SITE: 1225 Dundas Street E.

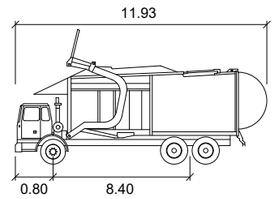
TITLE: Turning Movement Analysis
Garbage Movements (4)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	004	03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

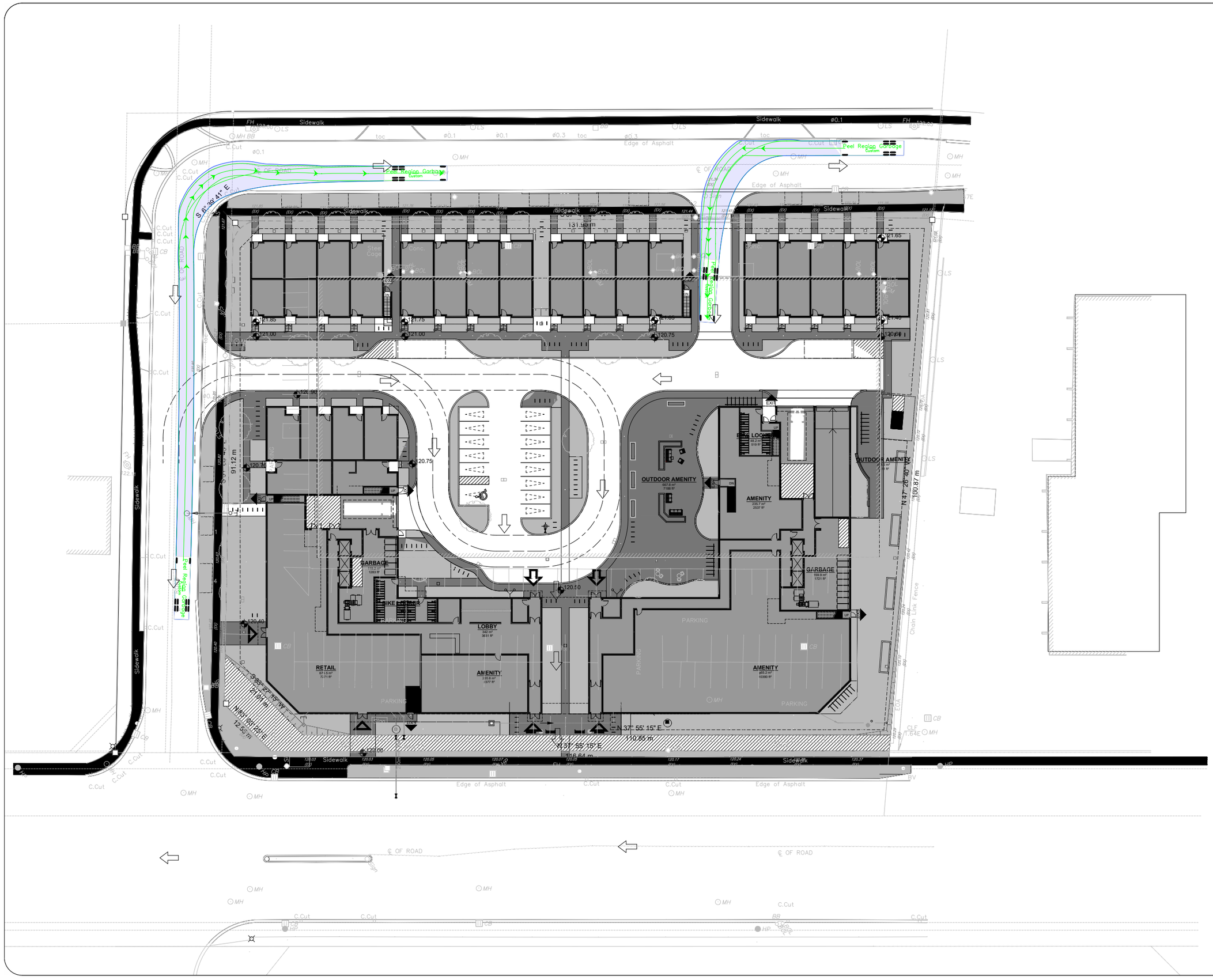
ARCHITECT:

SITE: 1225 Dundas Street E.

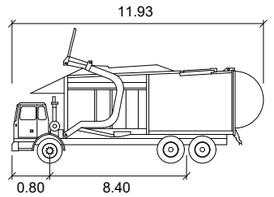
TITLE: Turning Movement Analysis
Garbage Movements (5)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	005	03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

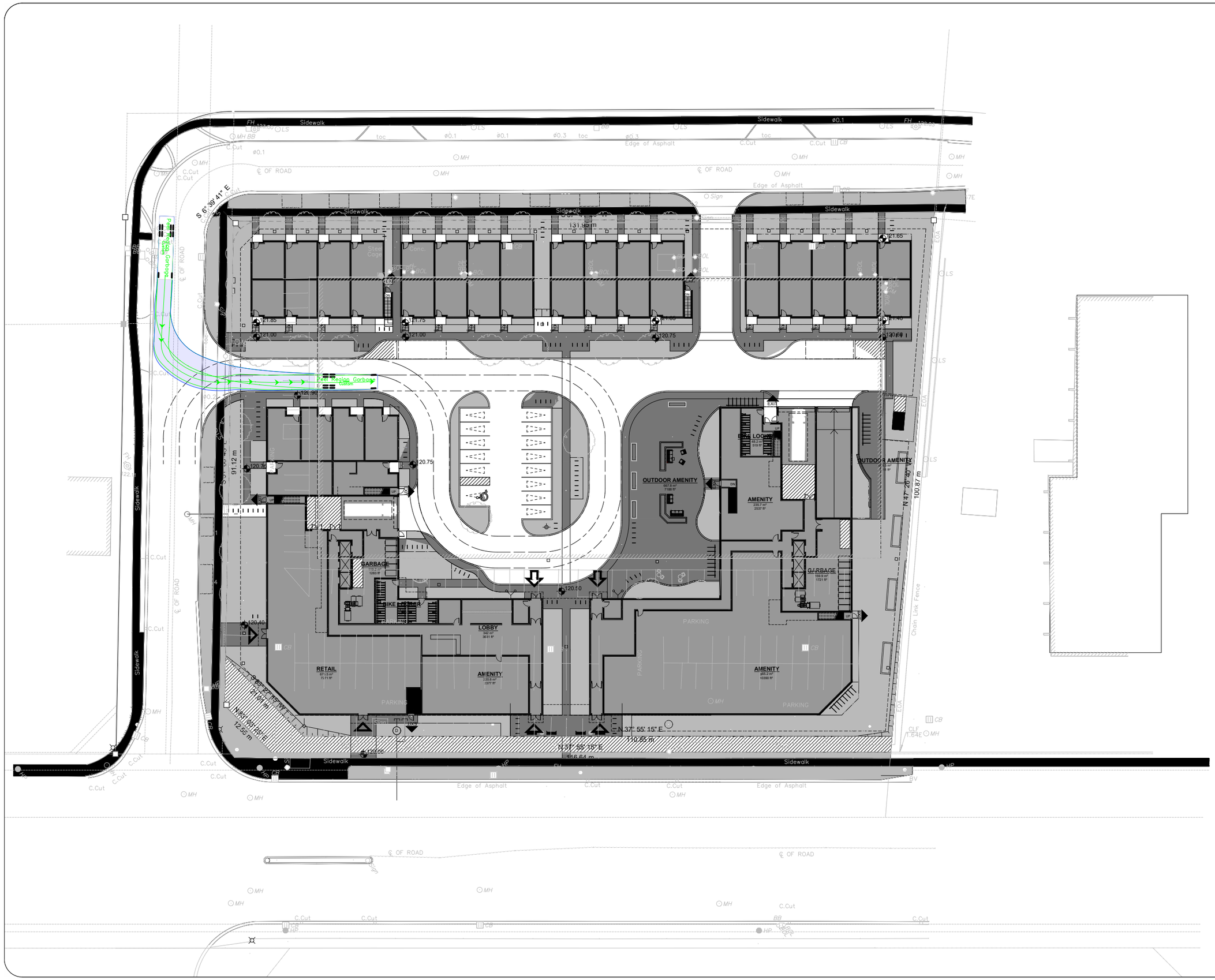
ARCHITECT:

SITE: 1225 Dundas Street E.

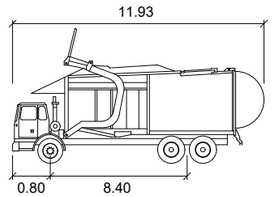
TITLE: Turning Movement Analysis
Garbage Movements (6)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	006	03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

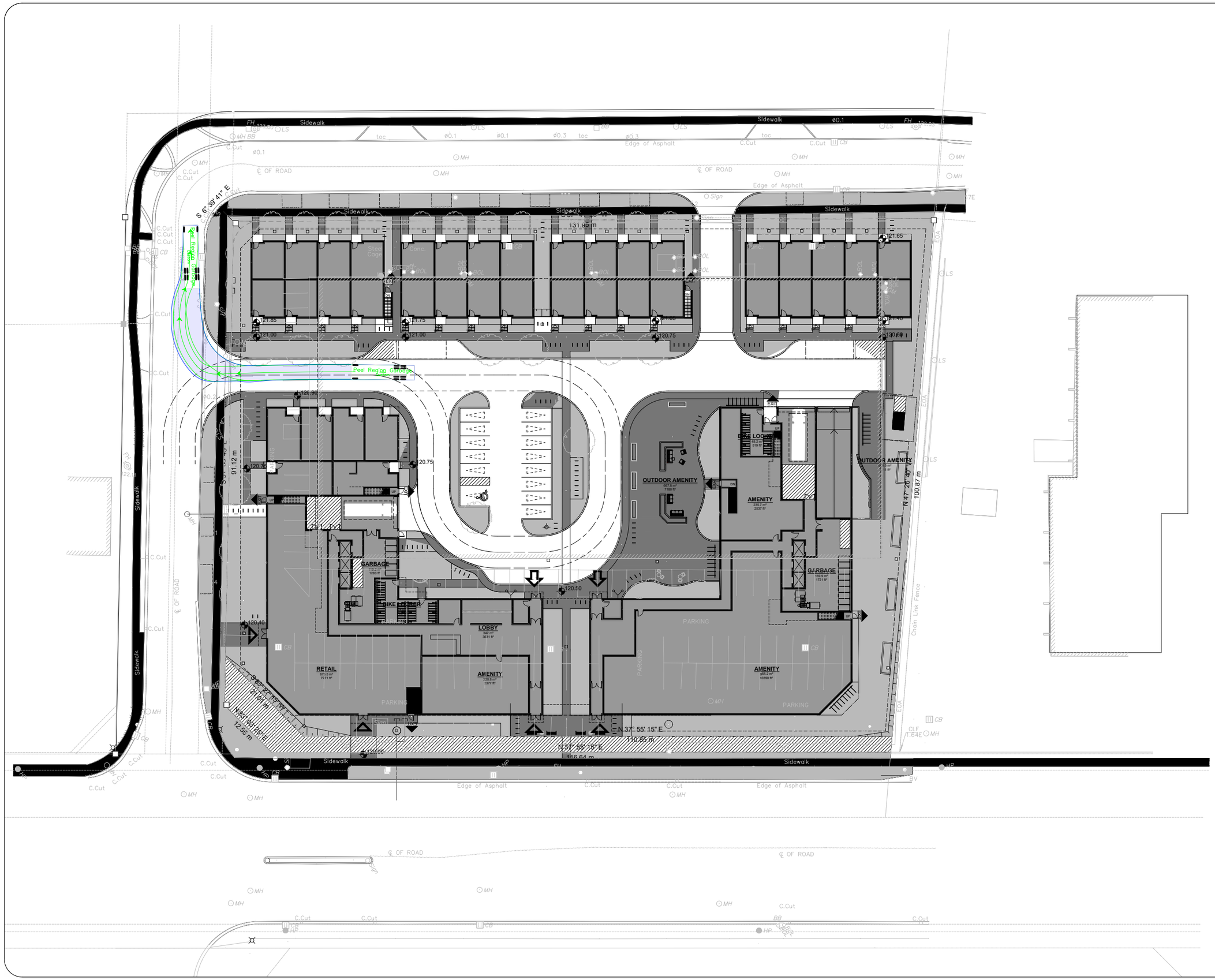
ARCHITECT:

SITE: 1225 Dundas Street E.

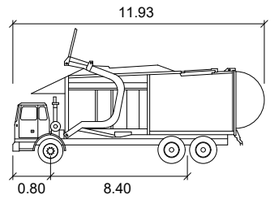
TITLE: Turning Movement Analysis
Garbage Movements (7)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	007	03



Notes:



Peel Region Garbage

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.3

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

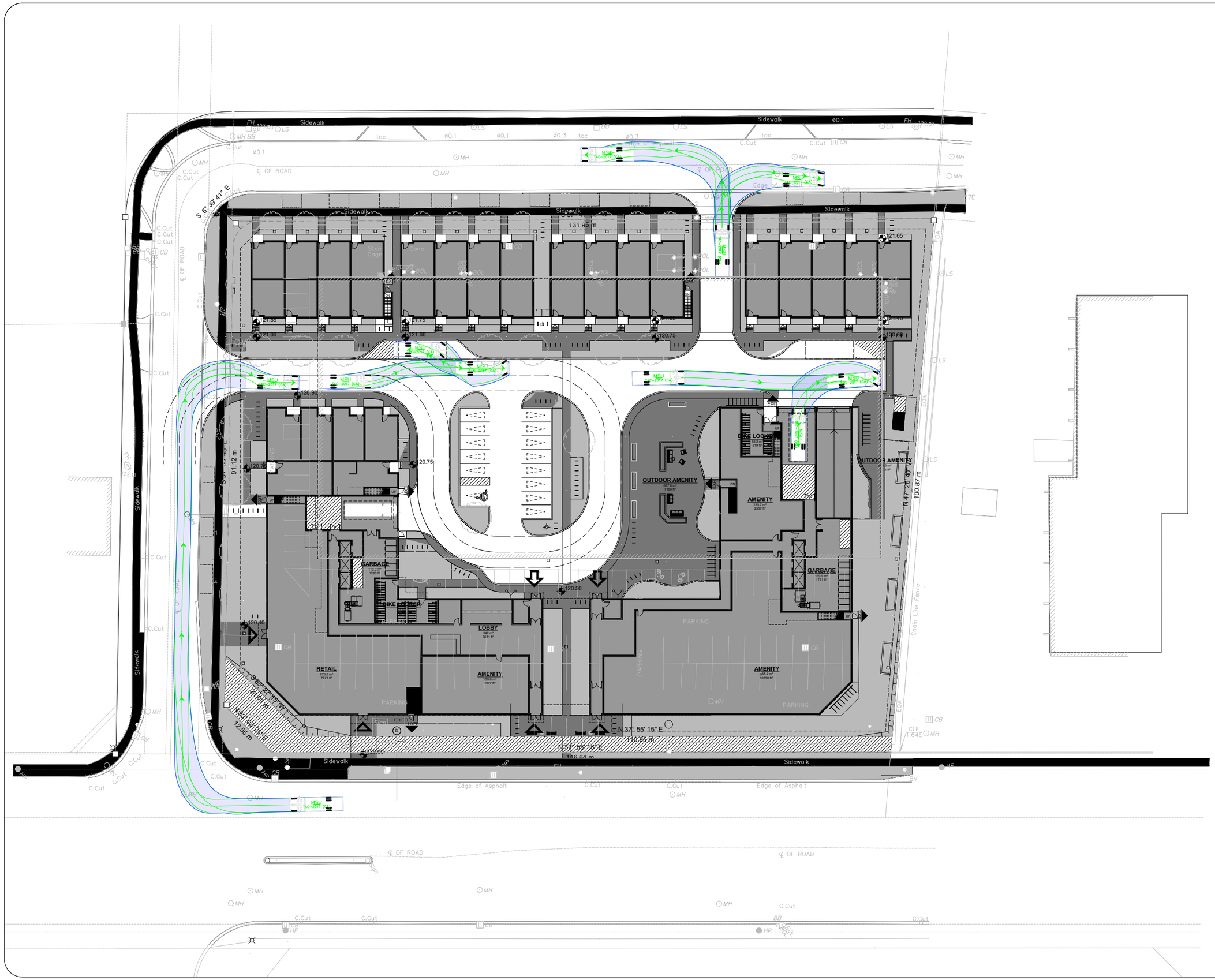
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
Garbage Movements (8)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	008	03



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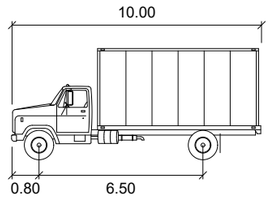


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

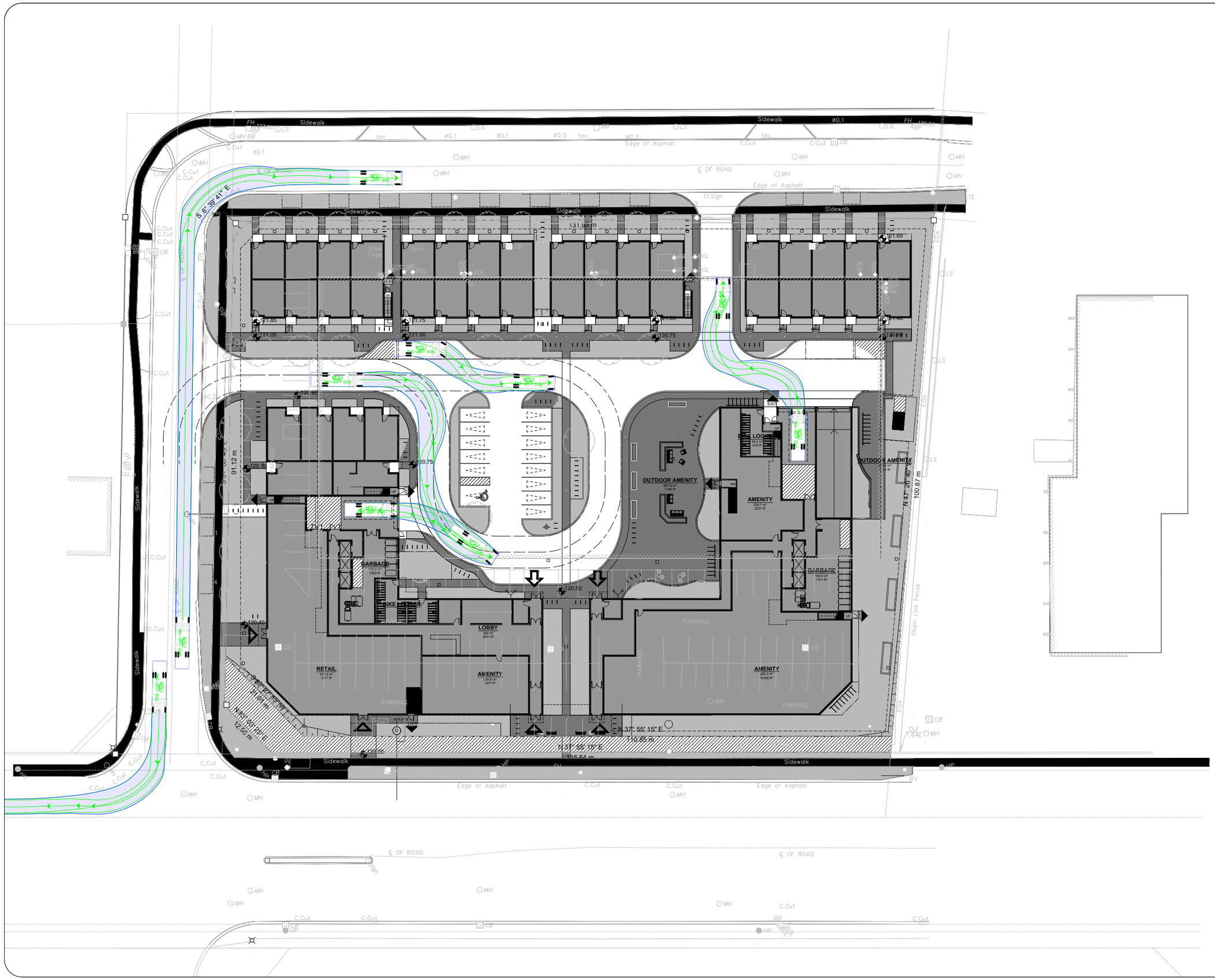
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Turning Movements (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	009	03



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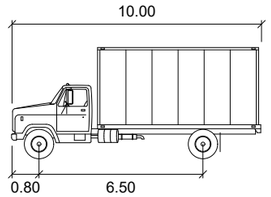


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

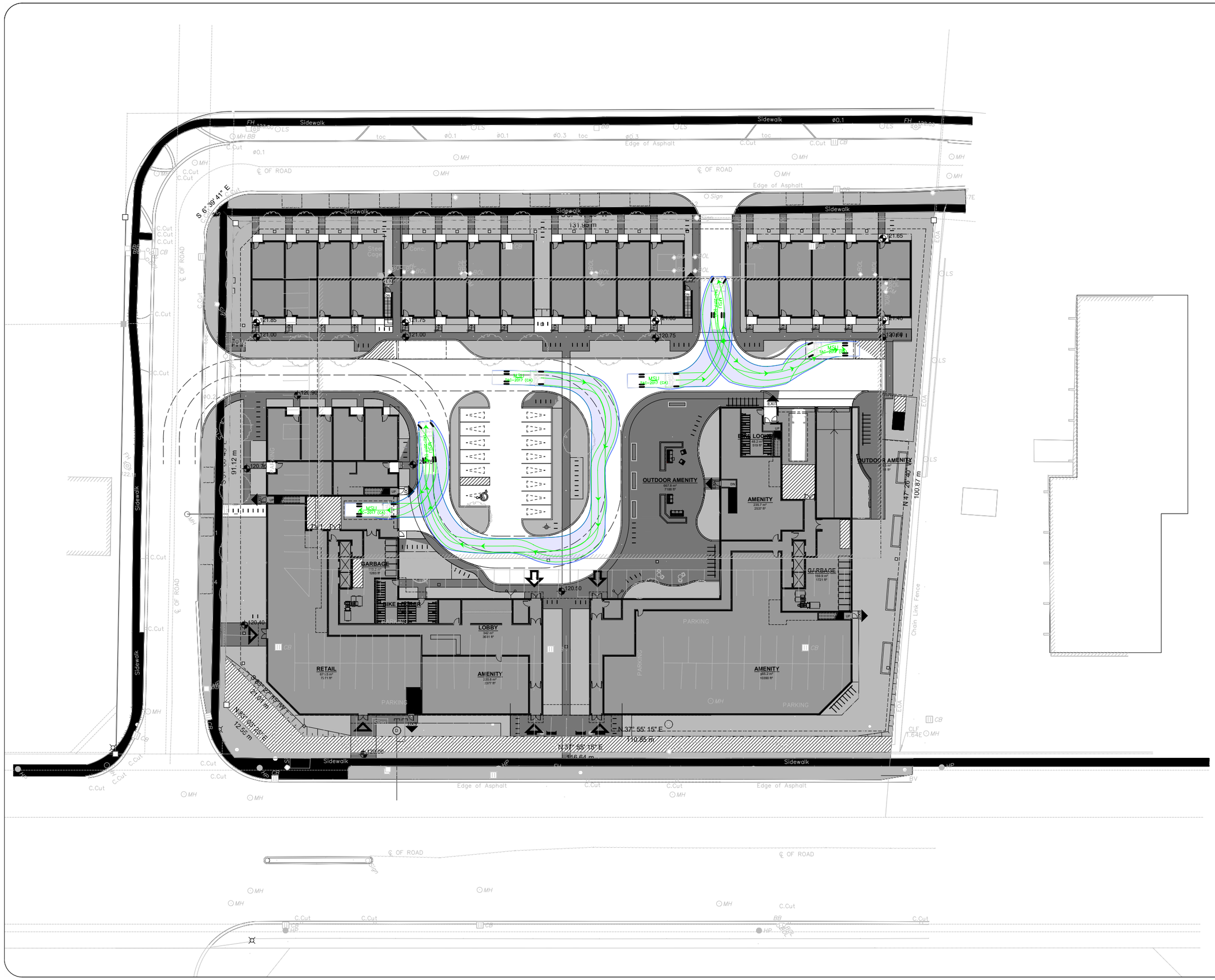
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Turning Movements (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	010	03



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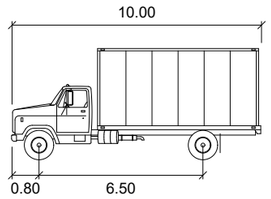


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

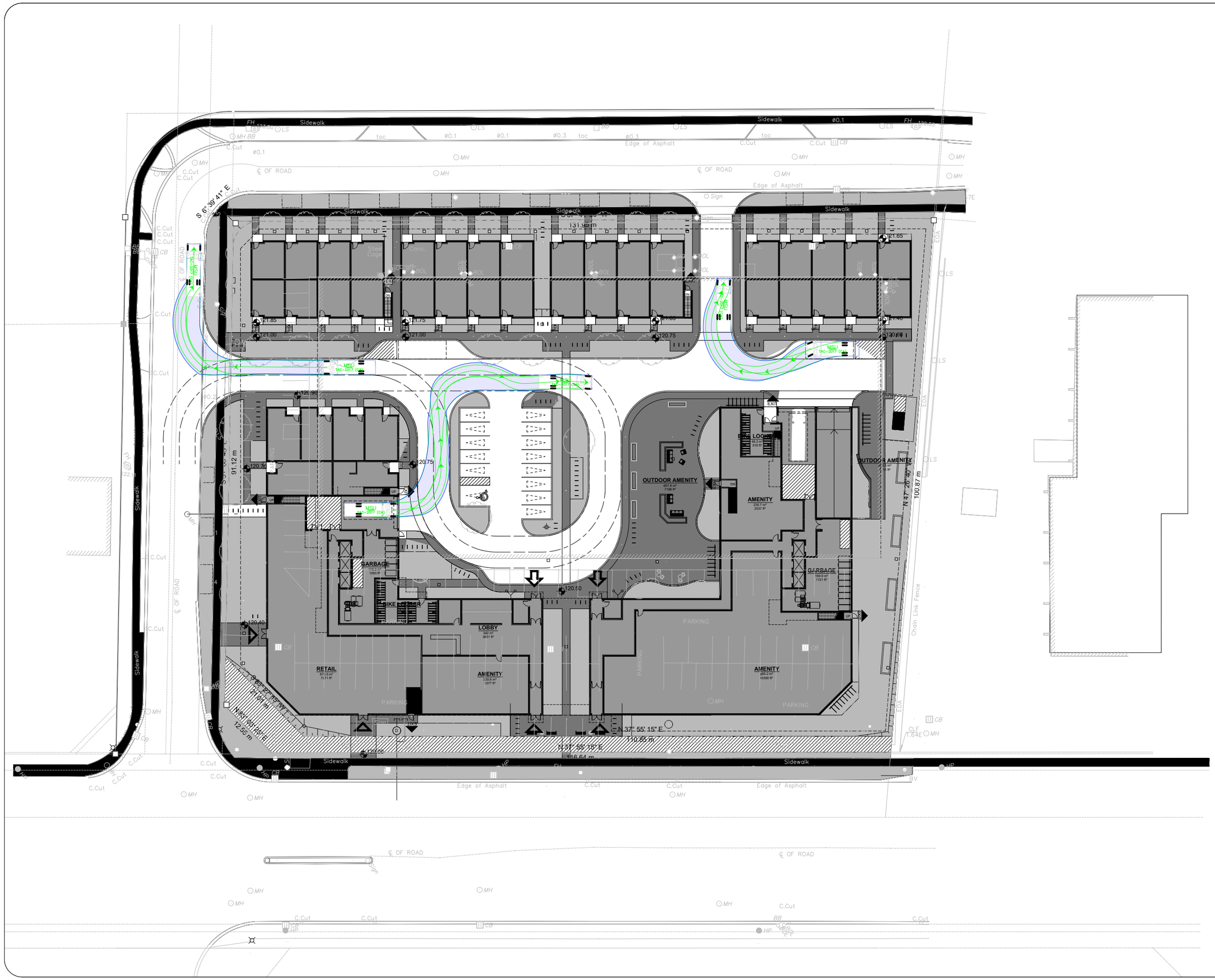
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Turning Movements (3)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	011	03



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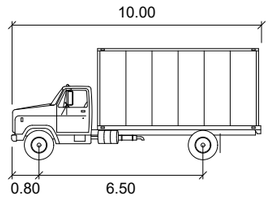


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

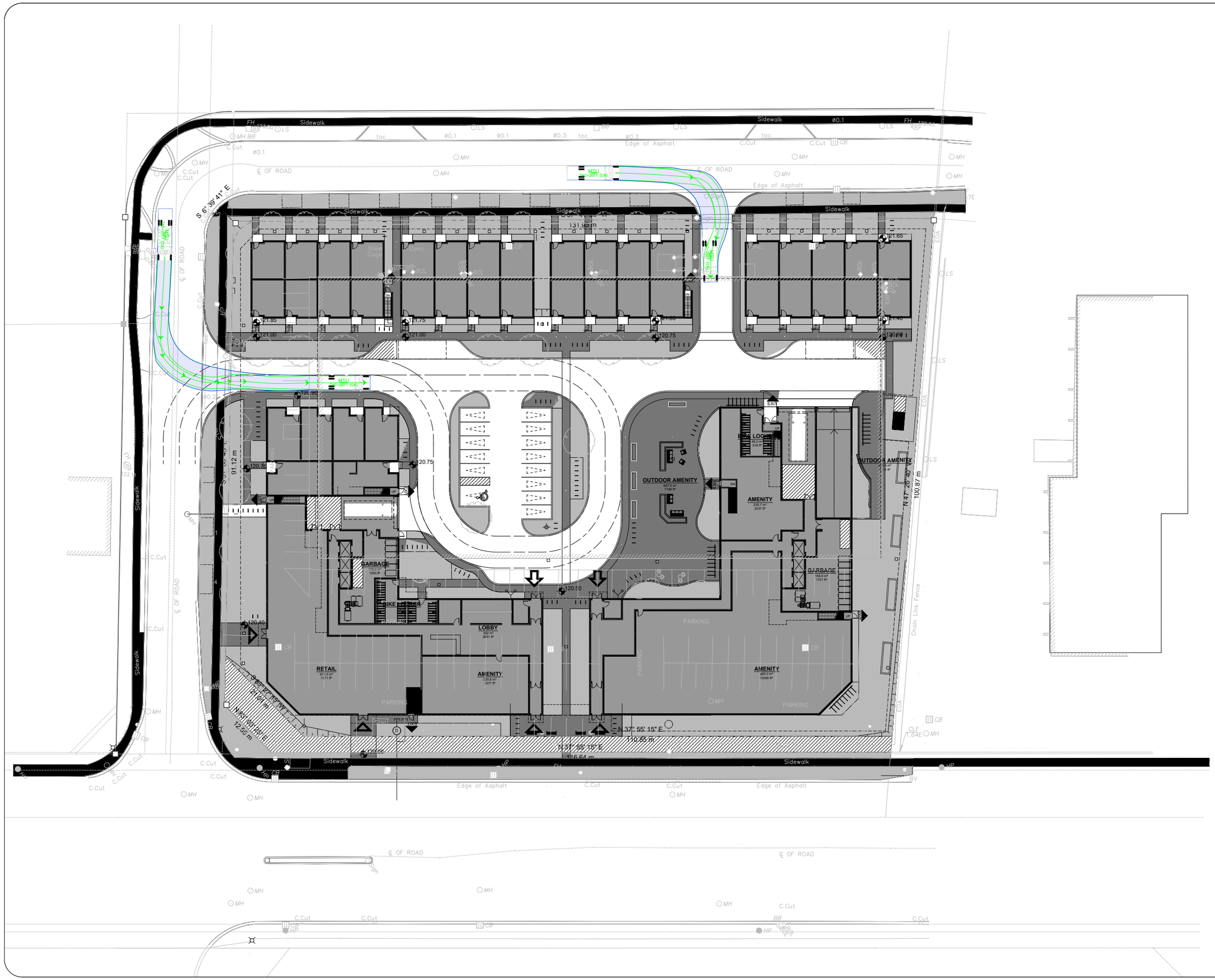
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Turning Movements (4)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	012	03



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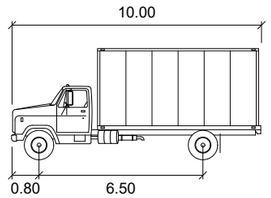


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

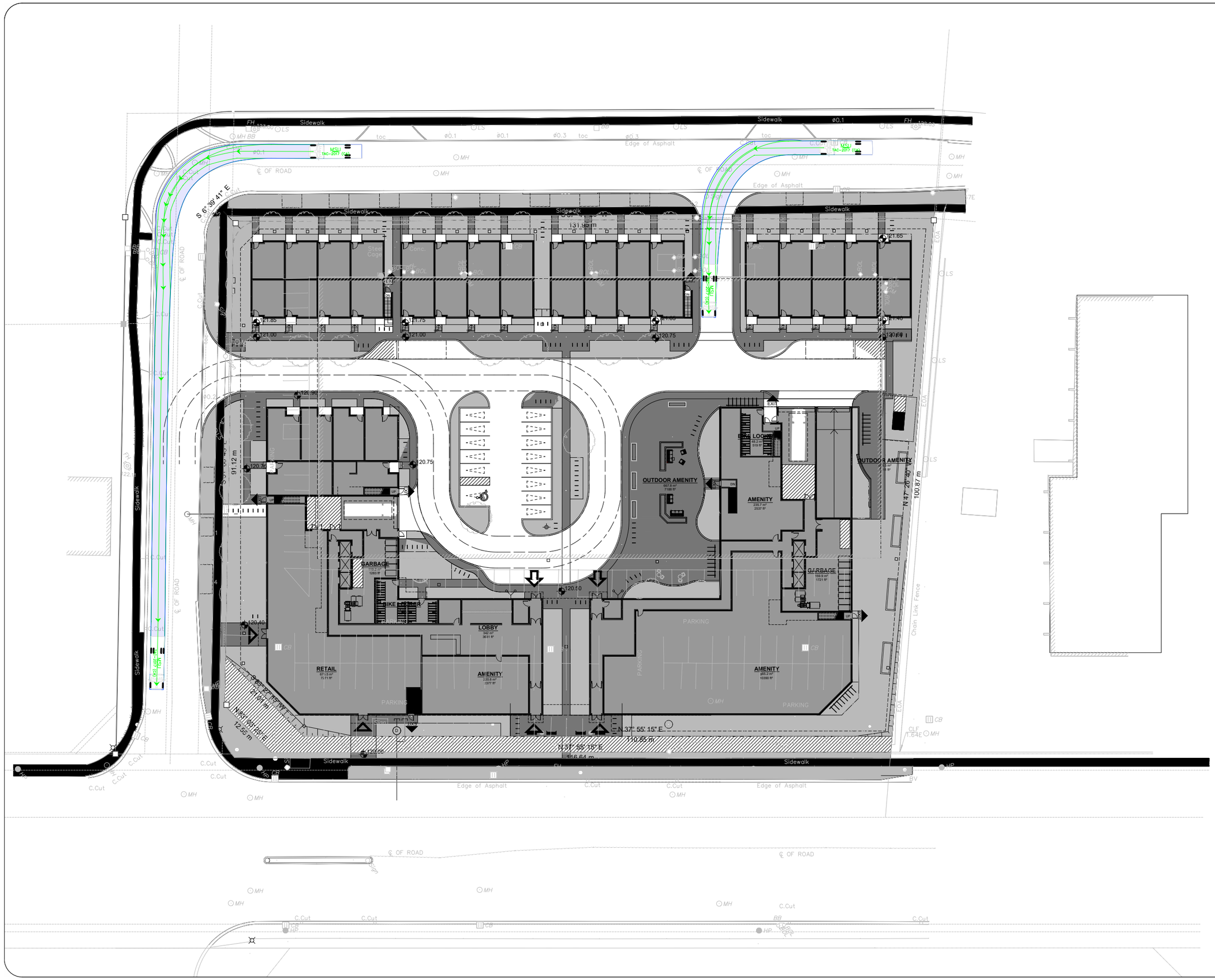
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Turning Movement Analysis
MSU Turning Movements (5)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	013	03



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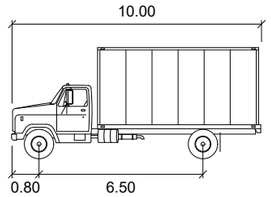


MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

REV:	DESCRIPTION:	BY:	DATE:
03	Issued for Review	BB	2022-07-05
02	Issued for Review	AN	2022-06-30
01	Issued for Review	BB	2022-06-15

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

ARCHITECT:

SITE: 1225 Dundas Street E.

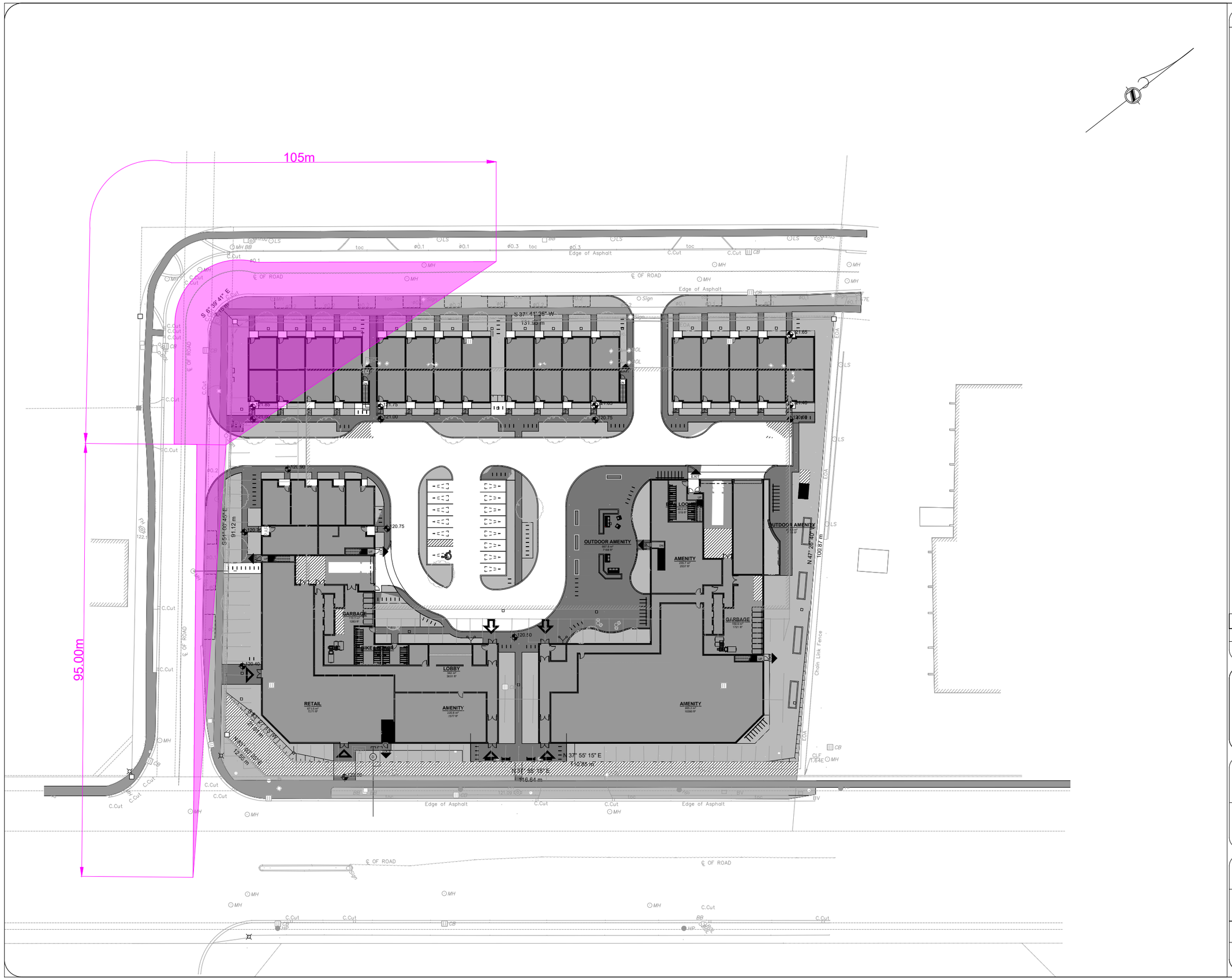
TITLE: Turning Movement Analysis
MSU Turning Movements (6)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-05	BB	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	014	03

Appendix K

Sightline Calculations



Notes:

LEGEND

Departure Sightline Distance

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2022-07-06

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

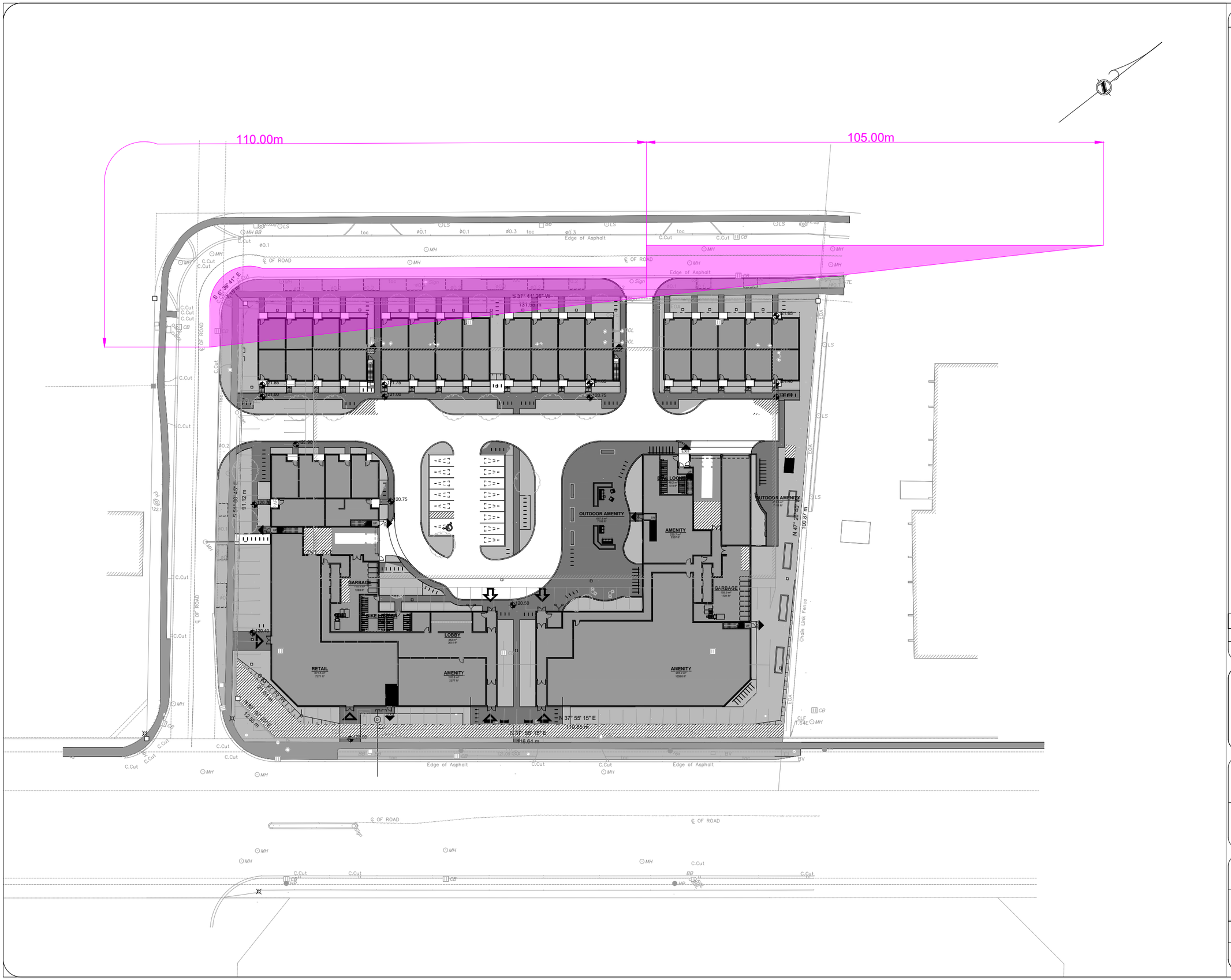
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 1
Departure Sightline Distance (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-06	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	001	01



Notes:

LEGEND

Departure Sightline Distance

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2022-07-06

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

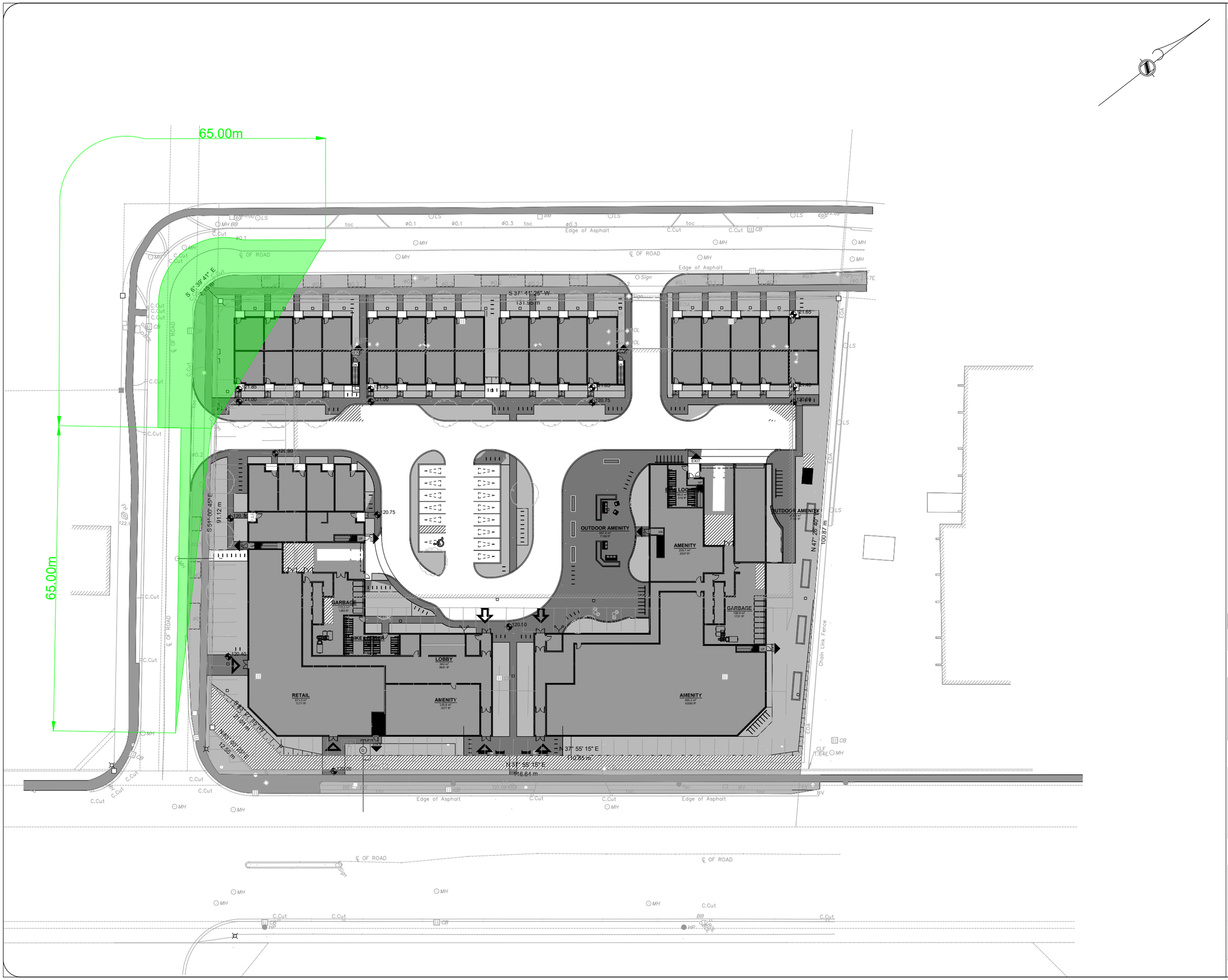
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 2
Departure Sightline Distance (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-06	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	002	01



Notes:

LEGEND

Stopping Sight Distance

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2022-07-06

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

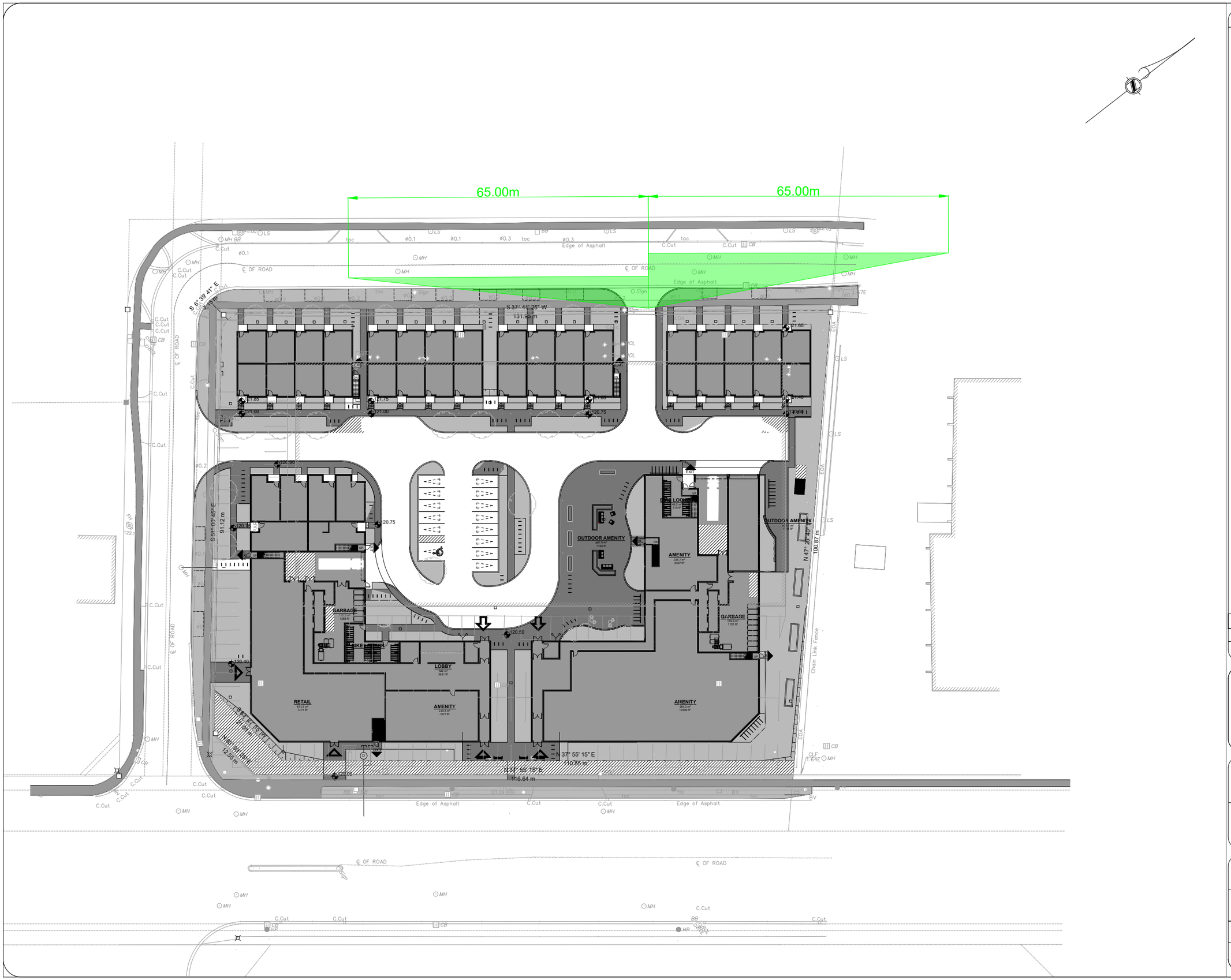
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 1
Stopping Sight Distance (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-06	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	003	01



Notes:

LEGEND

Stopping Sight Distance

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2022-07-06

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

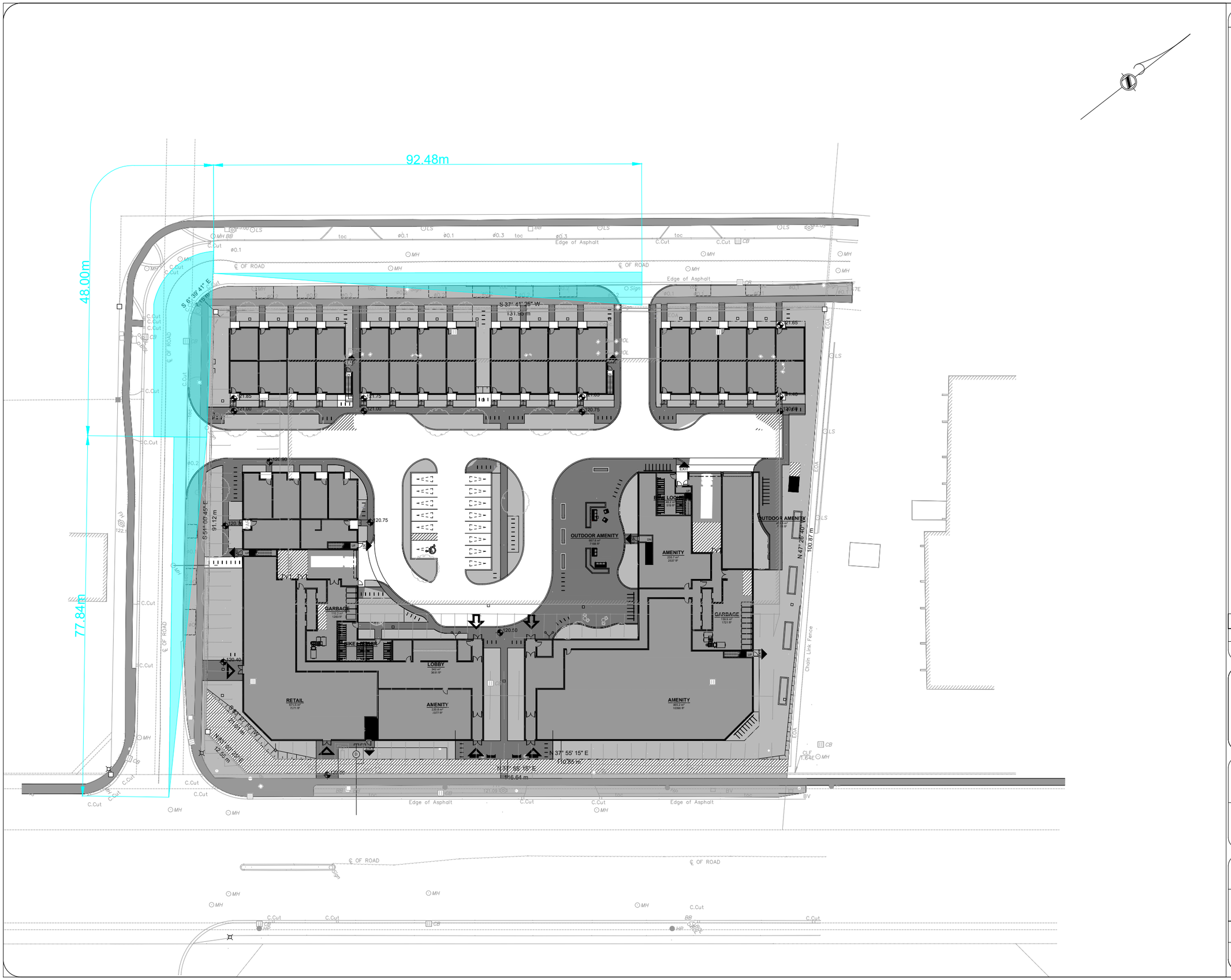
ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis - Access 2
Stopping Sight Distance (2)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-06	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	004	01



Notes:

LEGEND

Available Sightline Distance

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2022-07-06

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Whitehorn Investments Limited
3200 Highway 7, Vaughan
ON
L4K 5Z5

ARCHITECT:

SITE: 1225 Dundas Street E.

TITLE: Sightline Analysis
Available Sightline Distance (1)

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2022-07-06	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2022-050	007	01

Appendix L

Peak Hour Factor Calculations

[1] Dixie Road and Dundas Street E													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00	86	206	33	19	143	40	28	106	39	24	174	37	935
8:15	84	233	51	9	196	37	17	90	44	42	201	46	1050
8:30	108	163	33	30	178	27	30	127	42	49	245	31	1063
8:45	90	218	56	21	196	35	21	89	44	32	241	33	1076
Total	368	820	173	79	713	139	96	412	169	147	861	147	4124
PHF	1.07	1.00	0.77	2.19	0.91	0.94	1.14	1.16	1.08	1.15	1.24	1.11	0.96
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45	98	253	66	60	234	42	59	282	86	40	188	35	1443
17:00	122	241	49	58	248	52	76	273	107	42	194	44	1506
17:15	94	223	60	52	208	51	51	335	70	54	237	35	1470
17:30	138	287	61	56	199	77	71	243	92	52	172	31	1479
Total	452	1004	236	226	889	222	257	1133	355	188	791	145	5898
PHF	0.82	0.87	0.89	0.94	0.90	0.72	0.85	0.85	0.83	0.87	0.83	0.82	0.98

[2] Queen Frederica Drive/Blundell Road and Dundas Street E													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00	25	1	6	3	0	1	3	132	17	5	234	9	436
8:15	34	2	4	7	0	5	10	168	13	1	292	6	542
8:30	36	2	3	4	0	1	3	185	12	6	279	7	538
8:45	36	4	6	4	0	2	2	176	15	2	308	3	558
Total	131	9	19	18	0	9	18	661	57	14	1113	25	2074
PHF	0.91	0.56	0.79	0.64	#DIV/0!	0.45	0.45	0.89	0.84	0.58	0.90	0.69	0.93
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45	21	0	4	19	1	5	13	396	36	6	295	12	808
17:00	24	4	6	20	0	9	9	394	36	17	262	7	788
17:15	25	1	5	20	0	4	13	419	45	11	329	8	880
17:30	36	4	4	17	0	7	11	402	31	10	276	10	808
Total	106	9	19	76	1	25	46	1611	148	44	1162	37	3284
PHF	0.74	0.56	0.79	0.95	0.25	0.69	0.88	0.96	0.82	0.65	0.88	0.77	0.93

[3] Arena Road and Dundas Street E													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00	4	1	7	1	0	9	9	146	1	5	241	1	425
8:15	4	1	15	2	0	13	15	174	2	5	314	4	549
8:30	2	0	7	1	1	20	9	205	2	5	288	7	547
8:45	3	1	7	3	0	12	11	200	3	4	321	5	570
Total	13	3	36	7	1	54	44	725	8	19	1164	17	2091
PHF	0.81	0.75	0.60	0.58	0.25	0.68	0.73	0.88	0.67	0.95	0.91	0.61	0.92
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45	5	0	9	8	3	30	19	379	4	9	274	8	748
17:00	3	1	5	4	4	31	28	386	7	9	282	5	765
17:15	4	0	6	4	3	23	20	381	1	11	299	2	754
17:30	3	1	6	5	1	26	21	379	8	8	301	4	763
Total	15	2	26	21	11	110	88	1525	20	37	1156	19	3030
PHF	0.75	0.50	0.72	0.66	0.69	0.89	0.79	0.99	0.63	0.84	0.96	0.59	0.99

[4] Queen Frederica Drive and Dundix Road													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
8:00		29	5	3	21					3		6	67
8:15		24	5	2	14					13		14	72
8:30		35	8	6	12					6		11	78
8:45		28	5	6	11					7		15	72
Total	0	116	23	17	58	0	0	0	0	29	0	46	289
PHF	#DIV/0!	0.83	0.72	0.71	0.69	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.56	#DIV/0!	0.77	0.93
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:45		22	10	9	37					9		2	89
17:00		28	8	10	43					6		8	103
17:15		27	12	11	35					4		8	97
17:30		36	7	8	34					3		12	100
Total	0	113	37	38	149	0	0	0	0	22	0	30	389
PHF	#DIV/0!	0.78	0.77	0.86	0.87	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.61	#DIV/0!	0.63	0.94

[5] Arena Road and Dundix Road													
AM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
7:30	4	7			3	3	8	1	2		1	0	29
7:45	5	3			0	9	6		0		0	2	25
8:00	2	7			2	5	7		2		1	0	26
8:15	2	4			2	5	14		0		3	3	33
Total	13	21	0	0	7	22	35	1	4	0	5	5	113
PHF	0.65	0.75	#DIV/0!	#DIV/0!	0.58	0.61	0.63	0.25	0.50	#DIV/0!	0.42	0.42	0.86
PM													
End Time	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Sum
16:00	2	2		1	6	8	9	3	4		0	2	37
16:15	2	3		0	8	7	11	2	5		1	0	39
16:30	3	2		1	7	10	8	1	6		0	1	39
16:45	3	3		0	9	9	6	1	6		1	0	38
Total	10	10	0	2	30	34	34	7	21	0	2	3	153
PHF	0.83	0.83	#DIV/0!	0.50	0.83	0.85	0.77	0.58	0.88	#DIV/0!	0.50	0.38	0.98

Appendix M

2022 Existing Conditions Synchro Worksheets

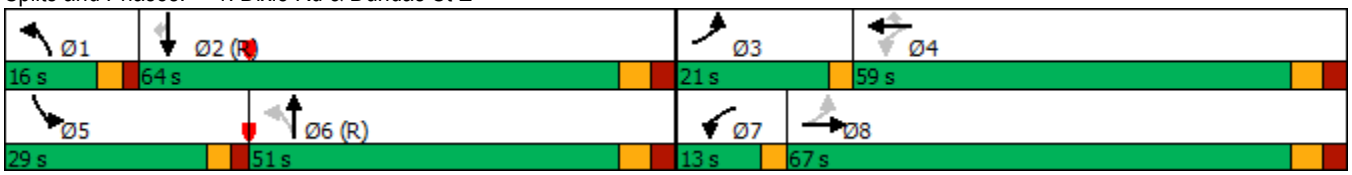
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	861	147	96	412	169	79	713	139	368	840	173
Future Volume (vph)	147	861	147	96	412	169	79	713	139	368	840	173
Satd. Flow (prot)	1623	4770	0	1638	4749	1389	1716	4637	0	3267	4794	1479
Flt Permitted	0.395			0.125			0.312			0.950		
Satd. Flow (perm)	670	4770	0	215	4749	1354	563	4637	0	3263	4794	1459
Satd. Flow (RTOR)		24				176		25				180
Lane Group Flow (vph)	153	1050	0	100	429	176	82	888	0	383	875	180
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Detector Phase	3	8		7	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	9.5	46.0		9.5	46.0	46.0	15.0	42.0		15.0	42.0	42.0
Total Split (s)	21.0	67.0		13.0	59.0	59.0	16.0	51.0		29.0	64.0	64.0
Total Split (%)	13.1%	41.9%		8.1%	36.9%	36.9%	10.0%	31.9%		18.1%	40.0%	40.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	59.2	42.5		50.2	36.5	36.5	73.2	61.9		23.9	76.5	76.5
Actuated g/C Ratio	0.37	0.27		0.31	0.23	0.23	0.46	0.39		0.15	0.48	0.48
v/c Ratio	0.45	0.82		0.65	0.40	0.40	0.25	0.49		0.78	0.38	0.23
Control Delay	42.2	64.2		53.4	53.2	8.8	19.7	38.6		77.0	28.2	4.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	42.2	64.2		53.4	53.2	8.8	19.7	38.6		77.0	28.2	4.2
LOS	D	E		D	D	A	B	D		E	C	A
Approach Delay		61.4			42.1			37.0			38.2	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	40.9	120.9		21.3	43.1	0.0	11.2	76.1		61.3	63.9	0.0
Queue Length 95th (m)	35.6	99.8		33.2	52.6	19.6	21.4	100.9		76.7	83.7	14.8
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	83.0			197.5		61.5	89.5			107.5		148.0
Base Capacity (vph)	355	1803		156	1543	558	344	1808		521	2290	791
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	0.43	0.58		0.64	0.28	0.32	0.24	0.49		0.74	0.38	0.23

Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 3 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 89.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	861	147	96	412	169	79	713	139	368	840	173
Future Volume (vph)	147	861	147	96	412	169	79	713	139	368	840	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	7.0		3.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	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	0.98		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1619	4771		1637	4749	1354	1716	4635		3267	4794	1459
Flt Permitted	0.40	1.00		0.13	1.00	1.00	0.31	1.00		0.95	1.00	1.00
Satd. Flow (perm)	674	4771		216	4749	1354	564	4635		3267	4794	1459
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)	153	897	153	100	429	176	82	743	145	383	875	180
RTOR Reduction (vph)	0	18	0	0	0	136	0	15	0	0	0	94
Lane Group Flow (vph)	153	1032	0	100	429	40	82	873	0	383	875	86
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Actuated Green, G (s)	55.2	42.5		46.2	36.5	36.5	71.2	61.9		23.9	76.5	76.5
Effective Green, g (s)	55.2	42.5		46.2	36.5	36.5	71.2	61.9		23.9	76.5	76.5
Actuated g/C Ratio	0.35	0.27		0.29	0.23	0.23	0.45	0.39		0.15	0.48	0.48
Clearance Time (s)	3.0	7.0		3.0	7.0	7.0	5.0	7.0		5.0	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
Lane Grp Cap (vph)	325	1267		148	1083	308	317	1793		488	2292	697
v/s Ratio Prot	0.05	c0.22		c0.04	0.09		0.01	c0.19		c0.12	0.18	
v/s Ratio Perm	0.12			0.15		0.03	0.10					0.06
v/c Ratio	0.47	0.81		0.68	0.40	0.13	0.26	0.49		0.78	0.38	0.12
Uniform Delay, d1	38.1	55.1		44.5	52.4	49.1	25.9	37.1		65.6	26.7	23.2
Progression Factor	1.12	1.10		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	3.9		11.6	0.2	0.2	0.4	0.9		8.1	0.5	0.4
Delay (s)	43.6	64.3		56.1	52.6	49.3	26.3	38.0		73.7	27.1	23.5
Level of Service	D	E		E	D	D	C	D		E	C	C
Approach Delay (s)		61.7			52.3			37.0			39.1	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1113	25	18	661	57	18	0	9	131	9	19
Future Volume (vph)	14	1113	25	18	661	57	18	0	9	131	9	19
Satd. Flow (prot)	1566	4915	0	1750	4726	0	1750	0	1309	1750	1639	0
Flt Permitted	0.347			0.205			0.738			0.950		
Satd. Flow (perm)	571	4915	0	377	4726	0	1353	0	1292	1748	1639	0
Satd. Flow (RTOR)		5			20				55		20	
Lane Group Flow (vph)	15	1224	0	19	772	0	19	0	10	141	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	38.0	38.0		38.0	38.0		42.0		42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%		47.5%	47.5%		52.5%		52.5%	52.5%	52.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None	
Act Effct Green (s)	50.3	50.3		50.3	50.3		15.7		15.7	15.7	15.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.20		0.20	0.20	0.20	
v/c Ratio	0.04	0.40		0.08	0.26		0.07		0.03	0.41	0.09	
Control Delay	7.6	8.9		9.5	7.0		21.6		0.2	29.4	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	7.6	8.9		9.5	7.0		21.6		0.2	29.4	11.6	
LOS	A	A		A	A		C		A	C	B	
Approach Delay		8.9			7.1			14.2			26.2	
Approach LOS		A			A			B			C	
Queue Length 50th (m)	1.1	41.0		0.3	5.6		2.5		0.0	20.2	1.3	
Queue Length 95th (m)	3.9	78.9		9.8	69.0		5.2		0.0	23.5	5.2	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	46.0			60.0								
Base Capacity (vph)	358	3092		237	2978		591		596	764	728	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	0		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.04	0.40		0.08	0.26		0.03		0.02	0.18	0.04	

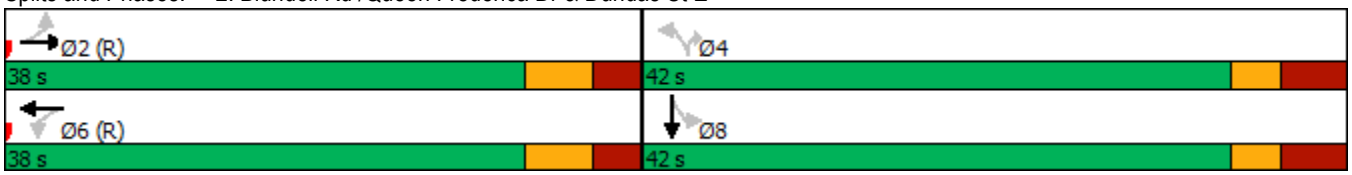
Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 37 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 9.6	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1113	25	18	661	57	18	0	9	131	9	19
Future Volume (vph)	14	1113	25	18	661	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1562	4913		1749	4727		1741		1292	1748	1639	
Flt Permitted	0.35	1.00		0.20	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	571	4913		377	4727		1352		1292	1748	1639	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1197	27	19	711	61	19	0	10	141	10	20
RTOR Reduction (vph)	0	2	0	0	7	0	0	0	8	0	16	0
Lane Group Flow (vph)	15	1222	0	19	765	0	19	0	2	141	14	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	50.3	50.3		50.3	50.3		15.7		15.7	15.7	15.7	
Effective Green, g (s)	50.3	50.3		50.3	50.3		15.7		15.7	15.7	15.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.20		0.20	0.20	0.20	
Clearance Time (s)	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	
Lane Grp Cap (vph)	359	3089		237	2972		265		253	343	321	
v/s Ratio Prot		c0.25			0.16						0.01	
v/s Ratio Perm	0.03			0.05			0.01		0.00	c0.08		
v/c Ratio	0.04	0.40		0.08	0.26		0.07		0.01	0.41	0.04	
Uniform Delay, d1	5.7	7.3		5.8	6.6		26.2		25.9	28.1	26.1	
Progression Factor	0.75	0.95		0.86	0.86		1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4		0.7	0.2		0.1		0.0	0.8	0.1	
Delay (s)	4.5	7.4		5.7	5.9		26.3		25.9	28.9	26.1	
Level of Service	A	A		A	A		C		C	C	C	
Approach Delay (s)		7.3			5.9			26.2			28.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1164	17	44	725	8	7	1	54	13	3	36
Future Volume (vph)	19	1164	17	44	725	8	7	1	54	13	3	36
Satd. Flow (prot)	1608	4920	0	1700	4784	0	1750	1469	0	1653	1561	0
Flt Permitted	0.338			0.200			0.730			0.718		
Satd. Flow (perm)	568	4920	0	357	4784	0	1338	1469	0	1241	1561	0
Satd. Flow (RTOR)		2			2			59			39	
Lane Group Flow (vph)	21	1283	0	48	797	0	8	60	0	14	42	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	35.5	35.5		109.0	109.0		46.5	46.5		46.5	46.5	
Total Split (s)	109.0	109.0		109.0	109.0		51.0	51.0		51.0	51.0	
Total Split (%)	68.1%	68.1%		68.1%	68.1%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		7.5	7.5		7.5	7.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	136.7	136.7		136.7	136.7		13.2	13.2		13.2	13.2	
Actuated g/C Ratio	0.85	0.85		0.85	0.85		0.08	0.08		0.08	0.08	
v/c Ratio	0.04	0.31		0.16	0.20		0.07	0.34		0.14	0.26	
Control Delay	5.3	4.3		14.0	8.2		60.7	17.9		63.9	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.3	4.3		14.0	8.2		60.7	17.9		63.9	20.7	
LOS	A	A		B	A		E	B		E	C	
Approach Delay		4.3			8.5			23.0			31.5	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	0.7	20.3		1.5	9.7		2.5	0.3		4.4	1.0	
Queue Length 95th (m)	5.6	71.4		21.2	76.8		6.7	12.3		9.8	11.2	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	485	4202		305	4086		363	442		337	452	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.31		0.16	0.20		0.02	0.14		0.04	0.09	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 19 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 160
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 56.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Dundas St E & Arena Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1164	17	44	725	8	7	1	54	13	3	36
Future Volume (vph)	19	1164	17	44	725	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1595	4920		1693	4786		1742	1470		1641	1561	
Flt Permitted	0.34	1.00		0.20	1.00		0.73	1.00		0.72	1.00	
Satd. Flow (perm)	568	4920		356	4786		1338	1470		1240	1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1265	18	48	788	9	8	1	59	14	3	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	55	0	0	36	0
Lane Group Flow (vph)	21	1283	0	48	797	0	8	5	0	14	6	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	133.9	133.9		133.9	133.9		12.1	12.1		12.1	12.1	
Effective Green, g (s)	133.9	133.9		133.9	133.9		12.1	12.1		12.1	12.1	
Actuated g/C Ratio	0.84	0.84		0.84	0.84		0.08	0.08		0.08	0.08	
Clearance Time (s)	6.5	6.5		6.5	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	475	4117		297	4005		101	111		93	118	
v/s Ratio Prot		c0.26			0.17			0.00			0.00	
v/s Ratio Perm	0.04			0.13			0.01			c0.01		
v/c Ratio	0.04	0.31		0.16	0.20		0.08	0.05		0.15	0.05	
Uniform Delay, d1	2.2	2.9		2.5	2.6		68.8	68.6		69.1	68.6	
Progression Factor	1.00	1.00		2.38	2.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.2		1.1	0.1		0.3	0.2		0.8	0.2	
Delay (s)	2.4	3.1		7.0	5.7		69.1	68.8		69.9	68.8	
Level of Service	A	A		A	A		E	E		E	E	
Approach Delay (s)		3.1			5.8			68.8			69.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	46	17	58	116	23
Future Vol, veh/h	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	49	18	62	125	25
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	39%	0%
Vol Thru, %	77%	0%	83%
Vol Right, %	0%	61%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	75	75	139
LT Vol	17	29	0
Through Vol	58	0	116
RT Vol	0	46	23
Lane Flow Rate	81	81	149
Geometry Grp	1	1	1
Degree of Util (X)	0.096	0.095	0.168
Departure Headway (Hd)	4.305	4.232	4.039
Convergence, Y/N	Yes	Yes	Yes
Cap	823	852	879
Service Time	2.382	2.232	2.106
HCM Lane V/C Ratio	0.098	0.095	0.17
HCM Control Delay	7.8	7.7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.6

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	791	145	257	1133	355	226	889	222	452	1004	236
Future Volume (vph)	188	791	145	257	1133	355	226	889	222	452	1004	236
Satd. Flow (prot)	1716	4781	0	1750	5029	1536	1750	4805	0	3395	5029	1536
Flt Permitted	0.101			0.128			0.209			0.950		
Satd. Flow (perm)	181	4781	0	234	5029	1423	384	4805	0	3384	5029	1503
Satd. Flow (RTOR)		24				272		37				236
Lane Group Flow (vph)	192	955	0	262	1156	362	231	1134	0	461	1024	241
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Detector Phase	3	8		7	4	4	1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	9.5	46.0		9.5	46.0	46.0	15.0	42.0		15.0	42.0	42.0
Total Split (s)	18.0	59.0		23.0	64.0	64.0	24.0	51.0		27.0	54.0	54.0
Total Split (%)	11.3%	36.9%		14.4%	40.0%	40.0%	15.0%	31.9%		16.9%	33.8%	33.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0	3.0	2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	60.0	41.4		67.7	46.0	46.0	70.4	49.6		27.8	58.5	58.5
Actuated g/C Ratio	0.38	0.26		0.42	0.29	0.29	0.44	0.31		0.17	0.37	0.37
v/c Ratio	0.92	0.76		0.93	0.80	0.60	0.70	0.75		0.78	0.56	0.34
Control Delay	84.4	64.8		75.5	57.1	15.9	35.2	52.5		73.1	43.4	6.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	84.4	64.8		75.5	57.1	15.9	35.2	52.5		73.1	43.4	6.4
LOS	F	E		E	E	B	D	D		E	D	A
Approach Delay		68.1			51.5			49.6			46.2	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	53.2	111.5		60.0	126.7	23.2	38.7	116.4		72.4	95.2	1.0
Queue Length 95th (m)	#81.5	129.4		#104.1	133.1	53.5	62.9	140.2		#100.7	122.9	22.2
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	83.0			197.5		61.5	89.5			107.5		148.0
Base Capacity (vph)	212	1570		288	1791	682	350	1513		589	1838	699
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	0.91	0.61		0.91	0.65	0.53	0.66	0.75		0.78	0.56	0.34

Intersection Summary

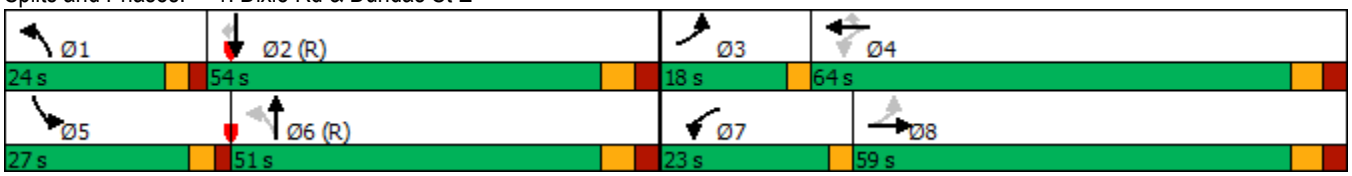
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 52.7	Intersection LOS: D
Intersection Capacity Utilization 104.4%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	791	145	257	1133	355	226	889	222	452	1004	236
Future Volume (vph)	188	791	145	257	1133	355	226	889	222	452	1004	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	7.0		3.0	7.0	7.0	5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	1.00	0.91		1.00	0.91	1.00	1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.98
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	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	4780		1749	5029	1423	1749	4805		3395	5029	1503
Flt Permitted	0.10	1.00		0.13	1.00	1.00	0.21	1.00		0.95	1.00	1.00
Satd. Flow (perm)	182	4780		236	5029	1423	385	4805		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	192	807	148	262	1156	362	231	907	227	461	1024	241
RTOR Reduction (vph)	0	18	0	0	0	194	0	26	0	0	0	150
Lane Group Flow (vph)	192	937	0	262	1156	168	231	1108	0	461	1024	91
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6					2
Actuated Green, G (s)	56.1	41.4		63.7	46.0	46.0	68.4	49.5		27.8	58.4	58.4
Effective Green, g (s)	56.1	41.4		63.7	46.0	46.0	68.4	49.5		27.8	58.4	58.4
Actuated g/C Ratio	0.35	0.26		0.40	0.29	0.29	0.43	0.31		0.17	0.36	0.36
Clearance Time (s)	3.0	7.0		3.0	7.0	7.0	5.0	7.0		5.0	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
Lane Grp Cap (vph)	204	1236		276	1445	409	325	1486		589	1835	548
v/s Ratio Prot	0.09	0.20		c0.11	0.23		0.08	c0.23		c0.14	0.20	
v/s Ratio Perm	0.24			c0.26		0.12	0.22					0.06
v/c Ratio	0.94	0.76		0.95	0.80	0.41	0.71	0.75		0.78	0.56	0.17
Uniform Delay, d1	42.7	54.7		40.9	52.7	46.1	30.9	49.6		63.2	40.5	34.3
Progression Factor	1.03	1.14		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	44.7	2.6		40.1	3.3	0.7	7.1	3.5		6.7	1.2	0.7
Delay (s)	88.8	65.2		81.0	56.0	46.7	38.0	53.1		69.9	41.7	35.0
Level of Service	F	E		F	E	D	D	D		E	D	C
Approach Delay (s)		69.1			57.8			50.5			48.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1162	37	46	1611	148	76	0	25	106	9	19
Future Volume (vph)	44	1162	37	46	1611	148	76	0	25	106	9	19
Satd. Flow (prot)	1750	4948	0	1750	4948	0	1750	0	1566	1750	1636	0
Flt Permitted	0.083			0.184			0.738			0.950		
Satd. Flow (perm)	153	4948	0	338	4948	0	1349	0	1528	1728	1636	0
Satd. Flow (RTOR)		7			22				55		2	
Lane Group Flow (vph)	47	1289	0	49	1891	0	82	0	27	114	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	38.0	38.0		38.0	38.0		42.0		42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%		47.5%	47.5%		52.5%		52.5%	52.5%	52.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None	
Act Effct Green (s)	50.9	50.9		50.9	50.9		19.5		19.5	19.5	19.5	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.24		0.24	0.24	0.24	
v/c Ratio	0.48	0.41		0.23	0.60		0.25		0.07	0.27	0.07	
Control Delay	45.5	10.0		13.5	19.4		21.9		1.7	22.5	16.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	45.5	10.0		13.5	19.4		21.9		1.7	22.5	16.8	
LOS	D	A		B	B		C		A	C	B	
Approach Delay		11.2			19.3			16.9			21.4	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	4.5	29.0		1.8	26.7		11.7		0.0	16.3	3.8	
Queue Length 95th (m)	#40.7	90.7		m16.5	#199.8		15.4		1.8	19.6	6.8	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	46.0			60.0								
Base Capacity (vph)	97	3149		214	3154		590		699	756	716	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	0		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.48	0.41		0.23	0.60		0.14		0.04	0.15	0.04	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 28 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

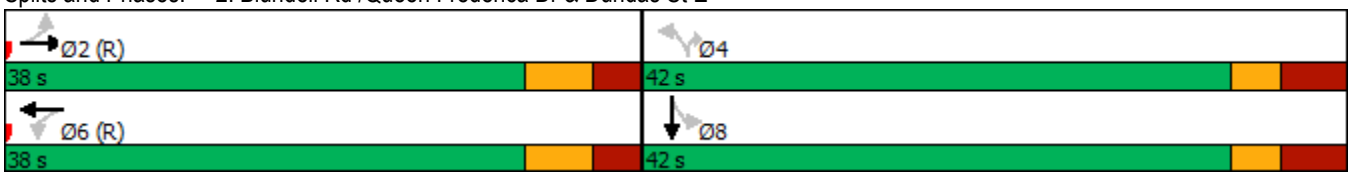
Maximum v/c Ratio: 0.60

Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

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

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1162	37	46	1611	148	76	0	25	106	9	19
Future Volume (vph)	44	1162	37	46	1611	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1748	4950		1743	4950		1737		1528	1728	1636	
Flt Permitted	0.08	1.00		0.18	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	153	4950		338	4950		1349		1528	1728	1636	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1249	40	49	1732	159	82	0	27	114	10	20
RTOR Reduction (vph)	0	3	0	0	9	0	0	0	21	0	2	0
Lane Group Flow (vph)	47	1286	0	49	1882	0	82	0	6	114	28	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	48.1	48.1		48.1	48.1		17.9		17.9	17.9	17.9	
Effective Green, g (s)	48.1	48.1		48.1	48.1		17.9		17.9	17.9	17.9	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.22		0.22	0.22	0.22	
Clearance Time (s)	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	
Lane Grp Cap (vph)	91	2976		203	2976		301		341	386	366	
v/s Ratio Prot		0.26			c0.38						0.02	
v/s Ratio Perm	0.31			0.14			0.06		0.00	c0.07		
v/c Ratio	0.52	0.43		0.24	0.63		0.27		0.02	0.30	0.08	
Uniform Delay, d1	9.2	8.6		7.4	10.3		25.7		24.2	25.8	24.5	
Progression Factor	1.52	0.85		0.80	1.40		1.00		1.00	1.00	1.00	
Incremental Delay, d2	18.7	0.4		2.5	0.9		0.5		0.0	0.4	0.1	
Delay (s)	32.7	7.8		8.4	15.2		26.2		24.2	26.2	24.6	
Level of Service	C	A		A	B		C		C	C	C	
Approach Delay (s)		8.6			15.1			25.7			25.9	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1156	19	88	1525	20	21	11	110	15	2	26
Future Volume (vph)	37	1156	19	88	1525	20	21	11	110	15	2	26
Satd. Flow (prot)	1733	4962	0	1750	4967	0	1700	1555	0	1750	1542	0
Flt Permitted	0.150			0.200			0.739			0.619		
Satd. Flow (perm)	273	4962	0	365	4967	0	1299	1555	0	1127	1542	0
Satd. Flow (RTOR)		2			2			111			26	
Lane Group Flow (vph)	37	1187	0	89	1560	0	21	122	0	15	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	35.5	35.5		9.5	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	96.0	96.0		13.0	96.0		51.0	51.0		51.0	51.0	
Total Split (%)	60.0%	60.0%		8.1%	60.0%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		0.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	109.4	109.4		123.7	120.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.68	0.68		0.77	0.75		0.16	0.16		0.16	0.16	
v/c Ratio	0.20	0.35		0.26	0.42		0.10	0.36		0.08	0.10	
Control Delay	17.7	13.0		10.8	11.3		50.5	12.9		49.5	17.2	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay	17.7	13.0		10.8	11.5		50.5	12.9		49.5	17.2	
LOS	B	B		B	B		D	B		D	B	
Approach Delay		13.2			11.5			18.4			28.5	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	5.3	70.0		2.7	19.1		5.2	2.7		3.7	0.5	
Queue Length 95th (m)	13.4	82.5		19.7	94.4		12.9	19.4		10.3	9.0	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	186	3394		368	3730		353	503		306	438	
Starvation Cap Reductn	0	0		0	1089		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.35		0.24	0.59		0.06	0.24		0.05	0.06	

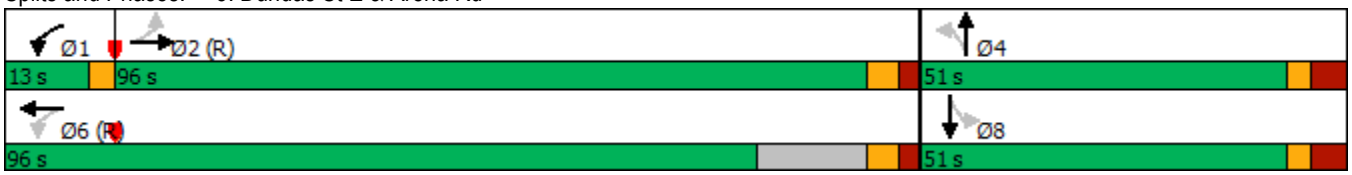
Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 114 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.42

Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Dundas St E & Arena Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1156	19	88	1525	20	21	11	110	15	2	26
Future Volume (vph)	37	1156	19	88	1525	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1727	4960		1747	4968		1670	1554		1731	1541	
Flt Permitted	0.15	1.00		0.20	1.00		0.74	1.00		0.62	1.00	
Satd. Flow (perm)	273	4960		369	4968		1299	1554		1128	1541	
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)	37	1168	19	89	1540	20	21	11	111	15	2	26
RTOR Reduction (vph)	0	1	0	0	0	0	0	93	0	0	22	0
Lane Group Flow (vph)	37	1186	0	89	1560	0	21	29	0	15	6	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	109.5	109.5		120.2	120.2		25.8	25.8		25.8	25.8	
Effective Green, g (s)	109.5	109.5		120.2	120.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.68	0.68		0.75	0.75		0.16	0.16		0.16	0.16	
Clearance Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	186	3394		343	3732		209	250		181	248	
v/s Ratio Prot		0.24		0.01	c0.31			c0.02			0.00	
v/s Ratio Perm	0.14			0.18			0.02			0.01		
v/c Ratio	0.20	0.35		0.26	0.42		0.10	0.12		0.08	0.02	
Uniform Delay, d1	9.2	10.5		5.8	7.2		57.2	57.3		57.0	56.5	
Progression Factor	1.00	1.00		1.42	1.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.3		0.3	0.3		0.2	0.2		0.2	0.0	
Delay (s)	11.6	10.8		8.6	9.0		57.4	57.6		57.2	56.5	
Level of Service	B	B		A	A		E	E		E	E	
Approach Delay (s)		10.8			9.0			57.5			56.8	
Approach LOS		B			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	30	38	149	113	37
Future Vol, veh/h	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	32	40	159	120	39
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8.5	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	42%	0%
Vol Thru, %	80%	0%	75%
Vol Right, %	0%	58%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	187	52	150
LT Vol	38	22	0
Through Vol	149	0	113
RT Vol	0	30	37
Lane Flow Rate	199	55	160
Geometry Grp	1	1	1
Degree of Util (X)	0.232	0.068	0.179
Departure Headway (Hd)	4.193	4.445	4.033
Convergence, Y/N	Yes	Yes	Yes
Cap	847	811	876
Service Time	2.263	2.445	2.12
HCM Lane V/C Ratio	0.235	0.068	0.183
HCM Control Delay	8.5	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.2	0.6

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Appendix N

2028 and 2033 Future Background Conditions Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	878	147	96	420	169	79	723	139	368	850	173
Future Volume (vph)	147	878	147	96	420	169	79	723	139	368	850	173
Satd. Flow (prot)	1623	3323	0	1638	3083	0	1716	4637	0	3267	4794	1479
Flt Permitted	0.267			0.083			0.299			0.950		
Satd. Flow (perm)	454	3323	0	143	3083	0	540	4637	0	3260	4794	1459
Satd. Flow (RTOR)		13			40			24				180
Lane Group Flow (vph)	153	1068	0	100	614	0	82	898	0	383	885	180
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	9.5	46.0		9.5	46.0		15.0	42.0		15.0	42.0	42.0
Total Split (s)	21.0	67.0		13.0	59.0		16.0	51.0		29.0	64.0	64.0
Total Split (%)	13.1%	41.9%		8.1%	36.9%		10.0%	31.9%		18.1%	40.0%	40.0%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	72.7	56.1		65.0	51.3		61.4	49.8		22.4	62.6	62.6
Actuated g/C Ratio	0.45	0.35		0.41	0.32		0.38	0.31		0.14	0.39	0.39
v/c Ratio	0.49	0.91		0.68	0.60		0.30	0.62		0.84	0.47	0.26
Control Delay	29.3	61.1		52.0	45.2		26.8	48.9		83.5	38.2	5.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.3	61.1		52.0	45.2		26.8	48.9		83.5	38.2	5.4
LOS	C	E		D	D		C	D		F	D	A
Approach Delay		57.2			46.2			47.0			46.1	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	28.2	156.8		17.8	79.9		13.9	90.1		61.3	78.3	0.0
Queue Length 95th (m)	41.2	204.1		#38.4	101.4		25.0	108.3		80.0	95.3	16.6
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	338	1254		151	1040		292	1459		490	1876	680
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.45	0.85		0.66	0.59		0.28	0.62		0.78	0.47	0.26

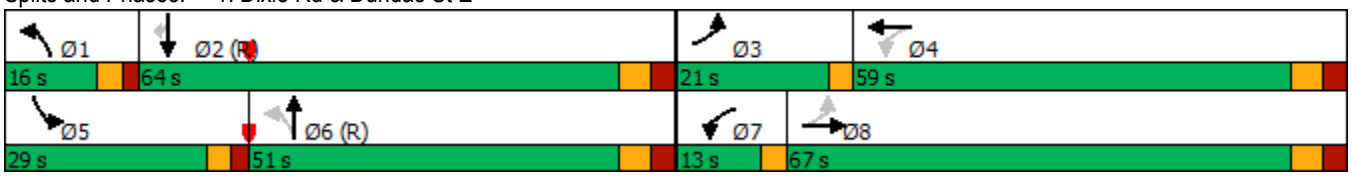
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 3 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 49.4	Intersection LOS: D
Intersection Capacity Utilization 94.6%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	878	147	96	420	169	79	723	139	368	850	173
Future Volume (vph)	147	878	147	96	420	169	79	723	139	368	850	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		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
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1621	3322		1637	3083		1716	4636		3267	4794	1459
Flt Permitted	0.27	1.00		0.08	1.00		0.30	1.00		0.95	1.00	1.00
Satd. Flow (perm)	455	3322		143	3083		540	4636		3267	4794	1459
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)	153	915	153	100	438	176	82	753	145	383	885	180
RTOR Reduction (vph)	0	8	0	0	27	0	0	17	0	0	0	110
Lane Group Flow (vph)	153	1060	0	100	587	0	82	881	0	383	885	70
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Actuated Green, G (s)	68.8	56.1		61.0	51.3		59.4	49.8		22.4	62.6	62.6
Effective Green, g (s)	68.8	56.1		61.0	51.3		59.4	49.8		22.4	62.6	62.6
Actuated g/C Ratio	0.43	0.35		0.38	0.32		0.37	0.31		0.14	0.39	0.39
Clearance Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	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
Lane Grp Cap (vph)	301	1164		145	988		271	1442		457	1875	570
v/s Ratio Prot	c0.05	c0.32		c0.04	0.19		0.02	c0.19		c0.12	0.18	
v/s Ratio Perm	0.17			0.22			0.09					0.05
v/c Ratio	0.51	0.91		0.69	0.59		0.30	0.61		0.84	0.47	0.12
Uniform Delay, d1	30.3	49.5		37.6	45.6		33.2	46.9		67.0	36.4	31.2
Progression Factor	0.96	1.04		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	9.3		12.8	1.0		0.6	1.9		12.6	0.9	0.4
Delay (s)	30.2	60.8		50.4	46.6		33.9	48.8		79.7	37.2	31.6
Level of Service	C	E		D	D		C	D		E	D	C
Approach Delay (s)		57.0			47.1			47.6			47.7	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1135	25	18	674	57	18	0	9	131	9	19
Future Volume (vph)	14	1135	25	18	674	57	18	0	9	131	9	19
Satd. Flow (prot)	1566	3420	0	1750	3289	0	1750	0	1309	1750	1639	0
Flt Permitted	0.341			0.179			0.738			0.950		
Satd. Flow (perm)	561	3420	0	330	3289	0	1353	0	1292	1748	1639	0
Satd. Flow (RTOR)		3			13				55		20	
Lane Group Flow (vph)	15	1247	0	19	786	0	19	0	10	141	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	38.0	38.0		38.0	38.0		42.0		42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%		47.5%	47.5%		52.5%		52.5%	52.5%	52.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None	
Act Effct Green (s)	50.3	50.3		50.3	50.3		15.7		15.7	15.7	15.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.20		0.20	0.20	0.20	
v/c Ratio	0.04	0.58		0.09	0.38		0.07		0.03	0.41	0.09	
Control Delay	10.8	14.7		9.4	8.0		21.6		0.2	29.4	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	10.8	14.7		9.4	8.0		21.6		0.2	29.4	11.6	
LOS	B	B		A	A		C		A	C	B	
Approach Delay		14.7			8.0			14.2			26.2	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	1.0	66.8		0.7	16.1		2.5		0.0	20.2	1.3	
Queue Length 95th (m)	m4.3	#146.0		m5.7	99.7		5.2		0.0	23.5	5.2	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	352	2151		207	2072		591		596	764	728	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	0		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.04	0.58		0.09	0.38		0.03		0.02	0.18	0.04	

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 37 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

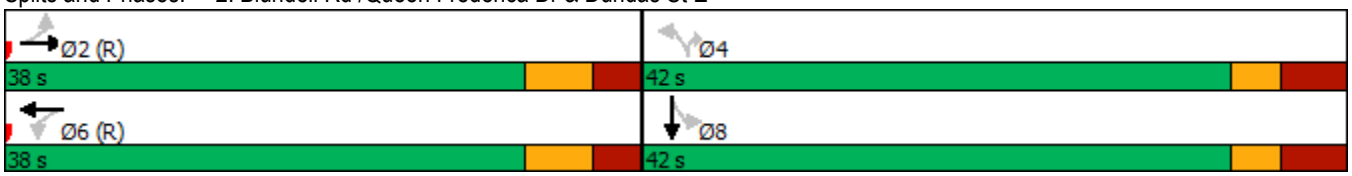
Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

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

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1135	25	18	674	57	18	0	9	131	9	19
Future Volume (vph)	14	1135	25	18	674	57	18	0	9	131	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1562	3420		1749	3291		1741		1292	1748	1639	
Flt Permitted	0.34	1.00		0.18	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	561	3420		330	3291		1352		1292	1748	1639	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1220	27	19	725	61	19	0	10	141	10	20
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	8	0	16	0
Lane Group Flow (vph)	15	1246	0	19	781	0	19	0	2	141	14	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	50.3	50.3		50.3	50.3		15.7		15.7	15.7	15.7	
Effective Green, g (s)	50.3	50.3		50.3	50.3		15.7		15.7	15.7	15.7	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.20		0.20	0.20	0.20	
Clearance Time (s)	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	
Lane Grp Cap (vph)	352	2150		207	2069		265		253	343	321	
v/s Ratio Prot		c0.36			0.24						0.01	
v/s Ratio Perm	0.03			0.06			0.01		0.00	c0.08		
v/c Ratio	0.04	0.58		0.09	0.38		0.07		0.01	0.41	0.04	
Uniform Delay, d1	5.7	8.7		5.9	7.2		26.2		25.9	28.1	26.1	
Progression Factor	1.06	1.25		0.82	0.85		1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.1		0.8	0.5		0.1		0.0	0.8	0.1	
Delay (s)	6.2	11.9		5.6	6.6		26.3		25.9	28.9	26.1	
Level of Service	A	B		A	A		C		C	C	C	
Approach Delay (s)		11.8			6.6			26.2			28.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1187	17	44	740	8	7	1	54	13	3	36
Future Volume (vph)	19	1187	17	44	740	8	7	1	54	13	3	36
Satd. Flow (prot)	1608	3424	0	1700	3329	0	1750	1457	0	1653	1553	0
Flt Permitted	0.343			0.202			0.730			0.650		
Satd. Flow (perm)	576	3424	0	361	3329	0	1331	1457	0	1114	1553	0
Satd. Flow (RTOR)		2			1			59			39	
Lane Group Flow (vph)	21	1308	0	48	813	0	8	60	0	14	42	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		109.0	109.0		22.5	22.5		22.5	22.5	
Total Split (s)	109.0	109.0		109.0	109.0		51.0	51.0		51.0	51.0	
Total Split (%)	68.1%	68.1%		68.1%	68.1%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	144.9	144.9		144.9	144.9		9.0	9.0		9.0	9.0	
Actuated g/C Ratio	0.91	0.91		0.91	0.91		0.06	0.06		0.06	0.06	
v/c Ratio	0.04	0.42		0.15	0.27		0.11	0.43		0.22	0.34	
Control Delay	1.7	2.2		5.8	4.1		71.4	25.3		77.8	27.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	1.7	2.2		5.8	4.1		71.4	25.3		77.8	27.8	
LOS	A	A		A	A		E	C		E	C	
Approach Delay		2.2			4.2			30.7			40.3	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	0.5	23.8		2.2	22.1		2.5	0.3		4.4	1.0	
Queue Length 95th (m)	2.5	57.2		17.1	94.4		7.9	14.6		11.6	13.3	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	521	3100		326	3014		386	465		323	479	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.04	0.42		0.15	0.27		0.02	0.13		0.04	0.09	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 19 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 4.7	Intersection LOS: A
Intersection Capacity Utilization 52.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Dundas St E & Arena Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1187	17	44	740	8	7	1	54	13	3	36
Future Volume (vph)	19	1187	17	44	740	8	7	1	54	13	3	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1588	3424		1691	3330		1732	1457		1629	1552	
Flt Permitted	0.34	1.00		0.20	1.00		0.73	1.00		0.65	1.00	
Satd. Flow (perm)	573	3424		359	3330		1331	1457		1115	1552	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1290	18	48	804	9	8	1	59	14	3	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	56	0	0	37	0
Lane Group Flow (vph)	21	1308	0	48	813	0	8	4	0	14	5	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	143.1	143.1		143.1	143.1		7.9	7.9		7.9	7.9	
Effective Green, g (s)	143.1	143.1		143.1	143.1		7.9	7.9		7.9	7.9	
Actuated g/C Ratio	0.89	0.89		0.89	0.89		0.05	0.05		0.05	0.05	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	512	3062		321	2978		65	71		55	76	
v/s Ratio Prot		c0.38			0.24			0.00			0.00	
v/s Ratio Perm	0.04			0.13			0.01			c0.01		
v/c Ratio	0.04	0.43		0.15	0.27		0.12	0.06		0.25	0.06	
Uniform Delay, d1	0.9	1.4		1.0	1.2		72.7	72.5		73.2	72.5	
Progression Factor	1.00	1.00		2.78	2.71		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		0.9	0.2		0.9	0.3		2.4	0.4	
Delay (s)	1.1	1.9		3.8	3.4		73.6	72.8		75.7	72.9	
Level of Service	A	A		A	A		E	E		E	E	
Approach Delay (s)		1.9			3.4			72.9			73.6	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	46	17	58	116	23
Future Vol, veh/h	29	46	17	58	116	23
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	49	18	62	125	25
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	7.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	23%	39%	0%
Vol Thru, %	77%	0%	83%
Vol Right, %	0%	61%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	75	75	139
LT Vol	17	29	0
Through Vol	58	0	116
RT Vol	0	46	23
Lane Flow Rate	81	81	149
Geometry Grp	1	1	1
Degree of Util (X)	0.096	0.095	0.168
Departure Headway (Hd)	4.305	4.232	4.039
Convergence, Y/N	Yes	Yes	Yes
Cap	823	852	879
Service Time	2.382	2.232	2.106
HCM Lane V/C Ratio	0.098	0.095	0.17
HCM Control Delay	7.8	7.7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.6

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	823	145	257	1156	355	226	901	222	452	1020	236
Future Volume (vph)	188	823	145	257	1156	355	226	901	222	452	1020	236
Satd. Flow (prot)	1716	3332	0	1750	3304	0	1750	4805	0	3395	5029	1536
Flt Permitted	0.077			0.080			0.151			0.950		
Satd. Flow (perm)	139	3332	0	147	3304	0	278	4805	0	3378	5029	1503
Satd. Flow (RTOR)		13			28			37				228
Lane Group Flow (vph)	192	988	0	262	1542	0	231	1146	0	461	1041	241
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	9.5	46.0		9.5	46.0		15.0	42.0		15.0	42.0	42.0
Total Split (s)	18.0	59.0		23.0	64.0		24.0	51.0		27.0	54.0	54.0
Total Split (%)	11.3%	36.9%		14.4%	40.0%		15.0%	31.9%		16.9%	33.8%	33.8%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	70.9	52.0		79.0	57.1		63.7	44.0		22.0	48.3	48.3
Actuated g/C Ratio	0.44	0.32		0.49	0.36		0.40	0.28		0.14	0.30	0.30
v/c Ratio	0.92	0.91		0.96	1.29		0.85	0.85		0.99	0.69	0.39
Control Delay	80.5	71.3		89.3	176.4		59.1	60.2		106.7	52.2	8.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	80.5	71.3		89.3	176.4		59.1	60.2		106.7	52.2	8.0
LOS	F	E		F	F		E	E		F	D	A
Approach Delay		72.8			163.8			60.0			60.5	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	52.8	172.5		65.7	~325.8		45.5	123.7		76.6	108.6	3.0
Queue Length 95th (m)	#90.3	#199.3		#122.4	#368.3		#86.0	142.2		#112.9	125.3	24.7
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	209	1091		272	1198		287	1348		466	1519	613
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.92	0.91		0.96	1.29		0.80	0.85		0.99	0.69	0.39

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

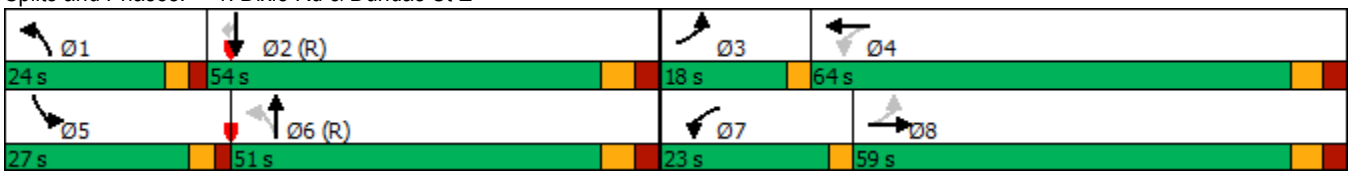
Maximum v/c Ratio: 1.29

Intersection Signal Delay: 93.3	Intersection LOS: F
Intersection Capacity Utilization 115.9%	ICU Level of Service H
Analysis Period (min) 15	

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

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

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	823	145	257	1156	355	226	901	222	452	1020	236
Future Volume (vph)	188	823	145	257	1156	355	226	901	222	452	1020	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	3330		1750	3303		1750	4806		3395	5029	1503
Flt Permitted	0.08	1.00		0.08	1.00		0.15	1.00		0.95	1.00	1.00
Satd. Flow (perm)	139	3330		147	3303		278	4806		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	192	840	148	262	1180	362	231	919	227	461	1041	241
RTOR Reduction (vph)	0	9	0	0	18	0	0	27	0	0	0	159
Lane Group Flow (vph)	192	979	0	262	1524	0	231	1119	0	461	1041	82
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Actuated Green, G (s)	66.9	52.0		75.0	57.1		61.7	44.0		22.0	48.3	48.3
Effective Green, g (s)	66.9	52.0		75.0	57.1		61.7	44.0		22.0	48.3	48.3
Actuated g/C Ratio	0.42	0.32		0.47	0.36		0.39	0.28		0.14	0.30	0.30
Clearance Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	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
Lane Grp Cap (vph)	204	1082		269	1178		270	1321		466	1518	453
v/s Ratio Prot	0.09	0.29		c0.12	c0.46		0.09	0.23		c0.14	c0.21	
v/s Ratio Perm	0.30			0.33			c0.24					0.05
v/c Ratio	0.94	0.91		0.97	1.29		0.86	0.85		0.99	0.69	0.18
Uniform Delay, d1	48.0	51.6		50.0	51.5		36.9	54.8		68.9	49.2	41.2
Progression Factor	0.95	1.19		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	41.4	9.1		47.3	138.6		22.3	6.9		38.5	2.5	0.9
Delay (s)	87.1	70.8		97.3	190.0		59.2	61.7		107.3	51.7	42.1
Level of Service	F	E		F	F		E	E		F	D	D
Approach Delay (s)		73.5			176.6			61.3			65.1	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	98.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	115.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1209	37	46	1643	148	76	0	25	106	9	19
Future Volume (vph)	44	1209	37	46	1643	148	76	0	25	106	9	19
Satd. Flow (prot)	1750	3447	0	1750	3447	0	1750	0	1566	1750	1636	0
Flt Permitted	0.083			0.146			0.738			0.950		
Satd. Flow (perm)	153	3447	0	268	3447	0	1349	0	1528	1728	1636	0
Satd. Flow (RTOR)		4			14				55		2	
Lane Group Flow (vph)	47	1340	0	49	1926	0	82	0	27	114	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	38.0	38.0		38.0	38.0		42.0		42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%		47.5%	47.5%		52.5%		52.5%	52.5%	52.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None	
Act Effct Green (s)	50.9	50.9		50.9	50.9		19.5		19.5	19.5	19.5	
Actuated g/C Ratio	0.64	0.64		0.64	0.64		0.24		0.24	0.24	0.24	
v/c Ratio	0.48	0.61		0.29	0.88		0.25		0.07	0.27	0.07	
Control Delay	45.1	22.0		17.0	23.5		21.9		1.7	22.5	16.8	
Queue Delay	0.0	0.0		0.0	1.5		0.0		0.0	0.0	0.0	
Total Delay	45.1	22.0		17.0	25.0		21.9		1.7	22.5	16.8	
LOS	D	C		B	C		C		A	C	B	
Approach Delay		22.7			24.8			16.9			21.4	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	6.3	107.3		2.8	96.7		11.7		0.0	16.3	3.8	
Queue Length 95th (m)	m#40.4	#215.4		m6.6	m#351.2		15.4		1.8	19.6	6.8	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	97	2193		170	2197		590		699	756	716	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	127		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.48	0.61		0.29	0.93		0.14		0.04	0.15	0.04	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 28 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

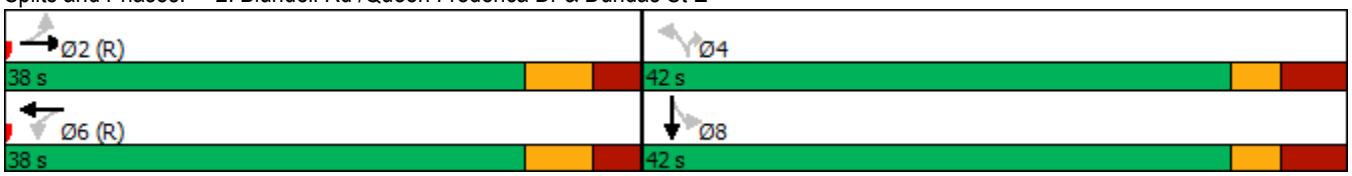
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 23.6	Intersection LOS: C
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

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

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1209	37	46	1643	148	76	0	25	106	9	19
Future Volume (vph)	44	1209	37	46	1643	148	76	0	25	106	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1750	3446		1745	3446		1737		1528	1728	1636	
Flt Permitted	0.08	1.00		0.15	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	153	3446		269	3446		1349		1528	1728	1636	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1300	40	49	1767	159	82	0	27	114	10	20
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	21	0	2	0
Lane Group Flow (vph)	47	1338	0	49	1920	0	82	0	6	114	28	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	48.1	48.1		48.1	48.1		17.9		17.9	17.9	17.9	
Effective Green, g (s)	48.1	48.1		48.1	48.1		17.9		17.9	17.9	17.9	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.22		0.22	0.22	0.22	
Clearance Time (s)	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	
Lane Grp Cap (vph)	91	2071		161	2071		301		341	386	366	
v/s Ratio Prot		0.39			c0.56						0.02	
v/s Ratio Perm	0.31			0.18			0.06		0.00	c0.07		
v/c Ratio	0.52	0.65		0.30	0.93		0.27		0.02	0.30	0.08	
Uniform Delay, d1	9.2	10.4		7.8	14.4		25.7		24.2	25.8	24.5	
Progression Factor	1.56	1.50		0.99	1.20		1.00		1.00	1.00	1.00	
Incremental Delay, d2	17.5	1.4		1.9	3.9		0.5		0.0	0.4	0.1	
Delay (s)	31.9	17.0		9.7	21.2		26.2		24.2	26.2	24.6	
Level of Service	C	B		A	C		C		C	C	C	
Approach Delay (s)		17.5			20.9			25.7			25.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1203	19	88	1556	20	21	11	110	15	2	26
Future Volume (vph)	37	1203	19	88	1556	20	21	11	110	15	2	26
Satd. Flow (prot)	1733	3453	0	1750	3457	0	1700	1555	0	1750	1542	0
Flt Permitted	0.133			0.176			0.739			0.619		
Satd. Flow (perm)	243	3453	0	324	3457	0	1299	1555	0	1127	1542	0
Satd. Flow (RTOR)		2			2			111			26	
Lane Group Flow (vph)	37	1234	0	89	1592	0	21	122	0	15	28	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	35.5	35.5		9.5	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	96.0	96.0		13.0	96.0		51.0	51.0		51.0	51.0	
Total Split (%)	60.0%	60.0%		8.1%	60.0%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		0.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	109.4	109.4		123.7	120.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.68	0.68		0.77	0.75		0.16	0.16		0.16	0.16	
v/c Ratio	0.22	0.52		0.28	0.61		0.10	0.36		0.08	0.10	
Control Delay	19.0	16.2		11.0	17.1		50.5	12.9		49.5	17.2	
Queue Delay	0.0	0.0		0.0	1.4		0.0	0.0		0.0	0.0	
Total Delay	19.0	16.2		11.0	18.5		50.5	12.9		49.5	17.2	
LOS	B	B		B	B		D	B		D	B	
Approach Delay		16.3			18.1			18.4			28.5	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	5.4	123.7		2.8	50.7		5.2	2.7		3.7	0.5	
Queue Length 95th (m)	14.0	148.8		m13.8	289.2		12.9	19.4		10.3	9.0	
Internal Link Dist (m)		148.2			184.5			118.2			107.5	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	166	2362		339	2596		353	503		306	438	
Starvation Cap Reductn	0	0		0	744		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.52		0.26	0.86		0.06	0.24		0.05	0.06	

Intersection Summary

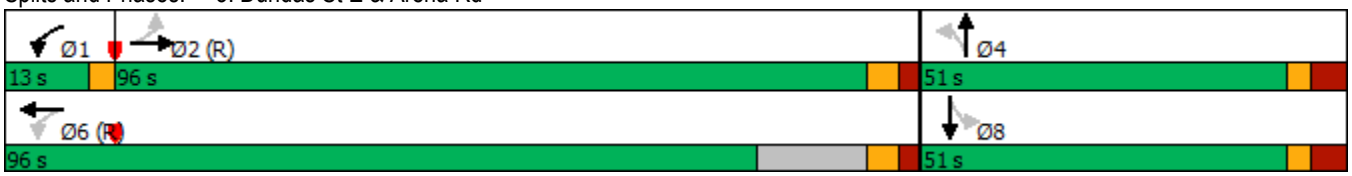
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 114 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 3: Dundas St E & Arena Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1203	19	88	1556	20	21	11	110	15	2	26
Future Volume (vph)	37	1203	19	88	1556	20	21	11	110	15	2	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1729	3452		1748	3458		1670	1554		1731	1541	
Flt Permitted	0.13	1.00		0.18	1.00		0.74	1.00		0.62	1.00	
Satd. Flow (perm)	242	3452		325	3458		1299	1554		1128	1541	
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)	37	1215	19	89	1572	20	21	11	111	15	2	26
RTOR Reduction (vph)	0	1	0	0	0	0	0	93	0	0	22	0
Lane Group Flow (vph)	37	1233	0	89	1592	0	21	29	0	15	6	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	109.5	109.5		120.2	120.2		25.8	25.8		25.8	25.8	
Effective Green, g (s)	109.5	109.5		120.2	120.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.68	0.68		0.75	0.75		0.16	0.16		0.16	0.16	
Clearance Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	165	2362		312	2597		209	250		181	248	
v/s Ratio Prot		0.36		0.01	c0.46			c0.02			0.00	
v/s Ratio Perm	0.15			0.20			0.02			0.01		
v/c Ratio	0.22	0.52		0.29	0.61		0.10	0.12		0.08	0.02	
Uniform Delay, d1	9.4	12.4		7.7	9.2		57.2	57.3		57.0	56.5	
Progression Factor	1.00	1.00		1.49	1.38		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	0.8		0.3	0.6		0.2	0.2		0.2	0.0	
Delay (s)	12.5	13.2		11.7	13.2		57.4	57.6		57.2	56.5	
Level of Service	B	B		B	B		E	E		E	E	
Approach Delay (s)		13.2			13.1			57.5			56.8	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	30	38	149	113	37
Future Vol, veh/h	22	30	38	149	113	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	32	40	159	120	39
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8.5	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	20%	42%	0%
Vol Thru, %	80%	0%	75%
Vol Right, %	0%	58%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	187	52	150
LT Vol	38	22	0
Through Vol	149	0	113
RT Vol	0	30	37
Lane Flow Rate	199	55	160
Geometry Grp	1	1	1
Degree of Util (X)	0.232	0.068	0.179
Departure Headway (Hd)	4.193	4.445	4.033
Convergence, Y/N	Yes	Yes	Yes
Cap	847	811	876
Service Time	2.263	2.445	2.12
HCM Lane V/C Ratio	0.235	0.068	0.183
HCM Control Delay	8.5	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.2	0.6

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Appendix O

2028 and 2033 Future Total Conditions Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	896	154	96	430	169	83	723	139	368	850	178
Future Volume (vph)	156	896	154	96	430	169	83	723	139	368	850	178
Satd. Flow (prot)	1623	3320	0	1638	3088	0	1716	4637	0	3267	4794	1479
Flt Permitted	0.262			0.078			0.297			0.950		
Satd. Flow (perm)	446	3320	0	134	3088	0	536	4637	0	3260	4794	1459
Satd. Flow (RTOR)		14			39			24				185
Lane Group Flow (vph)	163	1093	0	100	624	0	86	898	0	383	885	185
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	9.5	46.0		9.5	46.0		15.0	42.0		15.0	42.0	42.0
Total Split (s)	21.0	67.0		13.0	59.0		16.0	51.0		29.0	64.0	64.0
Total Split (%)	13.1%	41.9%		8.1%	36.9%		10.0%	31.9%		18.1%	40.0%	40.0%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	73.5	56.9		65.4	51.7		60.7	49.0		22.4	61.8	61.8
Actuated g/C Ratio	0.46	0.36		0.41	0.32		0.38	0.31		0.14	0.39	0.39
v/c Ratio	0.52	0.92		0.69	0.61		0.31	0.62		0.84	0.48	0.27
Control Delay	29.6	61.2		54.8	45.4		27.4	49.5		83.5	38.8	5.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.6	61.2		54.8	45.4		27.4	49.5		83.5	38.8	5.4
LOS	C	E		D	D		C	D		F	D	A
Approach Delay		57.1			46.7			47.6			46.3	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	30.2	161.7		17.6	81.2		14.9	91.1		61.3	79.6	0.0
Queue Length 95th (m)	44.6	207.5		#40.5	103.5		25.8	108.3		80.0	95.3	16.7
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	337	1253		149	1042		289	1437		490	1850	676
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.48	0.87		0.67	0.60		0.30	0.62		0.78	0.48	0.27

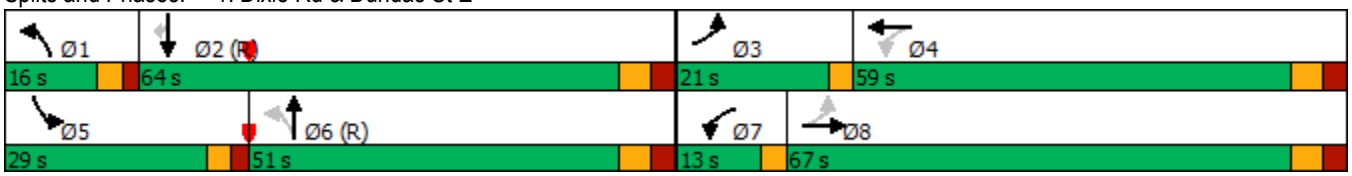
Intersection Summary
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 3 (2%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 49.7	Intersection LOS: D
Intersection Capacity Utilization 95.1%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	896	154	96	430	169	83	723	139	368	850	178
Future Volume (vph)	156	896	154	96	430	169	83	723	139	368	850	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		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
Frt	1.00	0.98		1.00	0.96		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1621	3320		1637	3087		1716	4636		3267	4794	1459
Flt Permitted	0.26	1.00		0.08	1.00		0.30	1.00		0.95	1.00	1.00
Satd. Flow (perm)	447	3320		135	3087		537	4636		3267	4794	1459
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)	162	933	160	100	448	176	86	753	145	383	885	185
RTOR Reduction (vph)	0	9	0	0	26	0	0	17	0	0	0	114
Lane Group Flow (vph)	163	1084	0	100	598	0	86	881	0	383	885	71
Confl. Peds. (#/hr)	11		15	15		11	1		3	3		1
Heavy Vehicles (%)	10%	5%	3%	9%	8%	15%	4%	8%	6%	6%	7%	8%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Actuated Green, G (s)	69.6	56.9		61.4	51.7		58.7	49.0		22.4	61.7	61.7
Effective Green, g (s)	69.6	56.9		61.4	51.7		58.7	49.0		22.4	61.7	61.7
Actuated g/C Ratio	0.43	0.36		0.38	0.32		0.37	0.31		0.14	0.39	0.39
Clearance Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	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
Lane Grp Cap (vph)	303	1180		142	997		268	1419		457	1848	562
v/s Ratio Prot	c0.05	c0.33		c0.04	0.19		0.02	c0.19		c0.12	0.18	
v/s Ratio Perm	0.18			0.23			0.10					0.05
v/c Ratio	0.54	0.92		0.70	0.60		0.32	0.62		0.84	0.48	0.13
Uniform Delay, d1	30.0	49.3		37.6	45.5		33.8	47.5		67.0	37.0	31.8
Progression Factor	0.96	1.03		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	9.9		14.7	1.0		0.7	2.1		12.6	0.9	0.5
Delay (s)	30.4	60.8		52.3	46.4		34.5	49.6		79.7	37.9	32.2
Level of Service	C	E		D	D		C	D		E	D	C
Approach Delay (s)		56.8			47.2			48.3			48.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1141	25	18	687	62	18	0	9	159	9	19
Future Volume (vph)	14	1141	25	18	687	62	18	0	9	159	9	19
Satd. Flow (prot)	1566	3420	0	1750	3289	0	1750	0	1309	1750	1639	0
Flt Permitted	0.330			0.174			0.738			0.950		
Satd. Flow (perm)	543	3420	0	320	3289	0	1353	0	1292	1748	1639	0
Satd. Flow (RTOR)		3			14				55		20	
Lane Group Flow (vph)	15	1254	0	19	806	0	19	0	10	171	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	38.0	38.0		38.0	38.0		42.0		42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%		47.5%	47.5%		52.5%		52.5%	52.5%	52.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None	
Act Effct Green (s)	49.4	49.4		49.4	49.4		16.6		16.6	16.6	16.6	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.21		0.21	0.21	0.21	
v/c Ratio	0.04	0.59		0.10	0.40		0.07		0.03	0.47	0.08	
Control Delay	10.9	15.4		9.7	8.7		20.8		0.2	30.1	11.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	10.9	15.4		9.7	8.7		20.8		0.2	30.1	11.2	
LOS	B	B		A	A		C		A	C	B	
Approach Delay		15.4			8.7			13.7			27.3	
Approach LOS		B			A			B			C	
Queue Length 50th (m)	1.1	69.8		0.7	17.4		2.5		0.0	24.4	1.3	
Queue Length 95th (m)	m4.4	#130.2		m5.5	102.5		5.2		0.0	28.0	5.2	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	335	2114		197	2038		591		596	764	728	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	0		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.04	0.59		0.10	0.40		0.03		0.02	0.22	0.04	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 37 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

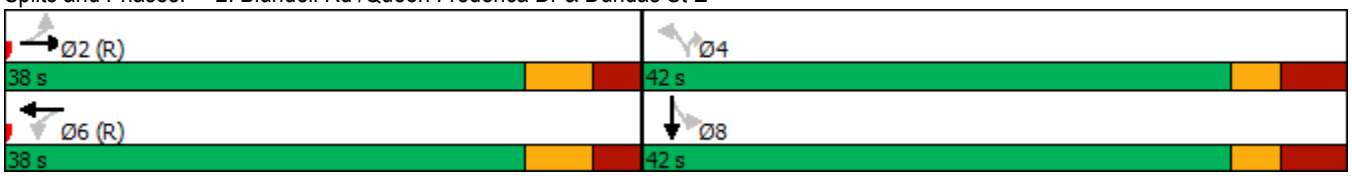
Maximum v/c Ratio: 0.59

Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

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

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1141	25	18	687	62	18	0	9	159	9	19
Future Volume (vph)	14	1141	25	18	687	62	18	0	9	159	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1562	3420		1749	3287		1741		1292	1748	1639	
Flt Permitted	0.33	1.00		0.17	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	543	3420		320	3287		1352		1292	1748	1639	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	1227	27	19	739	67	19	0	10	171	10	20
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	8	0	16	0
Lane Group Flow (vph)	15	1253	0	19	801	0	19	0	2	171	14	0
Confl. Peds. (#/hr)	5		3	3		5	8		2	2		8
Heavy Vehicles (%)	14%	4%	4%	2%	7%	7%	2%	2%	22%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	49.4	49.4		49.4	49.4		16.6		16.6	16.6	16.6	
Effective Green, g (s)	49.4	49.4		49.4	49.4		16.6		16.6	16.6	16.6	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.21		0.21	0.21	0.21	
Clearance Time (s)	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	
Lane Grp Cap (vph)	335	2111		197	2029		280		268	362	340	
v/s Ratio Prot		c0.37			0.24						0.01	
v/s Ratio Perm	0.03			0.06			0.01		0.00	c0.10		
v/c Ratio	0.04	0.59		0.10	0.39		0.07		0.01	0.47	0.04	
Uniform Delay, d1	6.0	9.2		6.2	7.7		25.5		25.2	27.9	25.3	
Progression Factor	1.05	1.25		0.82	0.87		1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.1		0.9	0.5		0.1		0.0	1.0	0.1	
Delay (s)	6.5	12.7		6.0	7.3		25.6		25.2	28.8	25.4	
Level of Service	A	B		A	A		C		C	C	C	
Approach Delay (s)		12.6			7.2			25.4			28.3	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1186	17	44	740	21	7	1	54	20	3	61
Future Volume (vph)	34	1186	17	44	740	21	7	1	54	20	3	61
Satd. Flow (prot)	1608	3424	0	1700	3322	0	1750	1457	0	1653	1545	0
Flt Permitted	0.337			0.200			0.603			0.667		
Satd. Flow (perm)	566	3424	0	358	3322	0	1100	1457	0	1143	1545	0
Satd. Flow (RTOR)		2			4			59			66	
Lane Group Flow (vph)	37	1307	0	48	827	0	8	60	0	22	69	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		2	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		109.0	109.0		22.5	22.5		22.5	22.5	
Total Split (s)	109.0	109.0		109.0	109.0		51.0	51.0		51.0	51.0	
Total Split (%)	68.1%	68.1%		68.1%	68.1%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Act Effct Green (s)	141.3	141.3		141.3	141.3		9.7	9.7		9.7	9.7	
Actuated g/C Ratio	0.88	0.88		0.88	0.88		0.06	0.06		0.06	0.06	
v/c Ratio	0.07	0.43		0.15	0.28		0.12	0.42		0.32	0.45	
Control Delay	2.0	2.5		6.1	4.7		71.9	24.3		81.9	24.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.0	2.5		6.1	4.7		71.9	24.3		81.9	24.9	
LOS	A	A		A	A		E	C		F	C	
Approach Delay		2.5			4.7			29.9			38.7	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	1.0	26.4		2.6	27.1		2.5	0.3		6.9	0.9	
Queue Length 95th (m)	3.9	57.2		17.0	94.0		8.0	14.6		16.0	16.4	
Internal Link Dist (m)		148.2			184.5			118.2			55.4	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	499	3024		316	2935		319	465		332	495	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.07	0.43		0.15	0.28		0.03	0.13		0.07	0.14	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 19 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 5.5	Intersection LOS: A
Intersection Capacity Utilization 52.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Dundas St E & Arena Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1186	17	44	740	21	7	1	54	20	3	61
Future Volume (vph)	34	1186	17	44	740	21	7	1	54	20	3	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1588	3424		1691	3321		1734	1457		1629	1544	
Flt Permitted	0.34	1.00		0.20	1.00		0.60	1.00		0.67	1.00	
Satd. Flow (perm)	563	3424		356	3321		1100	1457		1144	1544	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1289	18	48	804	23	8	1	59	22	3	66
RTOR Reduction (vph)	0	0	0	0	0	0	0	55	0	0	62	0
Lane Group Flow (vph)	37	1307	0	48	827	0	8	5	0	22	7	0
Confl. Peds. (#/hr)	9		9	9		9	4		6	6		4
Heavy Vehicles (%)	11%	4%	2%	5%	7%	2%	2%	2%	7%	8%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4			8		
Actuated Green, G (s)	141.3	141.3		141.3	141.3		9.7	9.7		9.7	9.7	
Effective Green, g (s)	141.3	141.3		141.3	141.3		9.7	9.7		9.7	9.7	
Actuated g/C Ratio	0.88	0.88		0.88	0.88		0.06	0.06		0.06	0.06	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	497	3023		314	2932		66	88		69	93	
v/s Ratio Prot		c0.38			0.25			0.00			0.00	
v/s Ratio Perm	0.07			0.13			0.01			c0.02		
v/c Ratio	0.07	0.43		0.15	0.28		0.12	0.05		0.32	0.08	
Uniform Delay, d1	1.2	1.8		1.3	1.5		71.1	70.8		72.0	70.9	
Progression Factor	1.00	1.00		2.80	2.66		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.5		1.0	0.2		0.8	0.2		2.7	0.3	
Delay (s)	1.5	2.2		4.5	4.1		71.9	71.1		74.6	71.3	
Level of Service	A	A		A	A		E	E		E	E	
Approach Delay (s)		2.2			4.1			71.2			72.1	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	75	22	58	115	24
Future Vol, veh/h	29	75	22	58	115	24
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	7	2	6	9	2	2
Mvmt Flow	31	81	24	62	124	26
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	8	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	28%	28%	0%
Vol Thru, %	72%	0%	83%
Vol Right, %	0%	72%	17%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	104	139
LT Vol	22	29	0
Through Vol	58	0	115
RT Vol	0	75	24
Lane Flow Rate	86	112	149
Geometry Grp	1	1	1
Degree of Util (X)	0.104	0.129	0.17
Departure Headway (Hd)	4.369	4.164	4.092
Convergence, Y/N	Yes	Yes	Yes
Cap	808	867	864
Service Time	2.463	2.164	2.177
HCM Lane V/C Ratio	0.106	0.129	0.172
HCM Control Delay	8	7.8	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.4	0.6

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Future Vol, veh/h	0	5	5	35	1	4	0	7	22	13	21	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	6	2	2	2	2	9	2	2	2
Mvmt Flow	0	6	6	41	1	5	0	8	26	15	24	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.9	7.5	6.8	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	88%	38%
Vol Thru, %	24%	50%	3%	62%
Vol Right, %	76%	50%	10%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	10	40	34
LT Vol	0	0	35	13
Through Vol	7	5	1	21
RT Vol	22	5	4	0
Lane Flow Rate	34	12	47	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.034	0.012	0.055	0.045
Departure Headway (Hd)	3.608	3.796	4.253	4.136
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	987	939	841	864
Service Time	1.648	1.835	2.282	2.171
HCM Lane V/C Ratio	0.034	0.013	0.056	0.046
HCM Control Delay	6.8	6.9	7.5	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.2	0.1

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	0	29	28	0	61
Future Vol, veh/h	32	0	29	28	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	0	32	31	0	68

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	116	48	0	0	63	0
Stage 1	48	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	880	1021	-	-	1540	-
Stage 1	974	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	880	1021	-	-	1540	-
Mov Cap-2 Maneuver	880	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	880	1540	-
HCM Lane V/C Ratio	-	-	0.04	-	-
HCM Control Delay (s)	-	-	9.3	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	0	6	40	0	29
Future Vol, veh/h	58	0	6	40	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	0	7	44	0	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	122	64
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	58	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1538	-	873	1000
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1538	-	869	1000
Mov Cap-2 Maneuver	-	-	-	-	869	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	960	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1000	-	-	1538	-
HCM Lane V/C Ratio	0.032	-	-	0.004	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	838	151	257	1175	355	234	901	222	452	1020	246
Future Volume (vph)	196	838	151	257	1175	355	234	901	222	452	1020	246
Satd. Flow (prot)	1716	3328	0	1750	3305	0	1750	4805	0	3395	5029	1536
Flt Permitted	0.077			0.073			0.149			0.950		
Satd. Flow (perm)	139	3328	0	134	3305	0	274	4805	0	3378	5029	1503
Satd. Flow (RTOR)		14			28			37				225
Lane Group Flow (vph)	200	1009	0	262	1561	0	239	1146	0	461	1041	251
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Detector Phase	3	8		7	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0		8.0	10.0		8.0	10.0	10.0
Minimum Split (s)	9.5	46.0		9.5	46.0		15.0	42.0		15.0	42.0	42.0
Total Split (s)	18.0	59.0		23.0	64.0		24.0	51.0		27.0	54.0	54.0
Total Split (%)	11.3%	36.9%		14.4%	40.0%		15.0%	31.9%		16.9%	33.8%	33.8%
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	0.0	3.0		0.0	3.0		2.0	3.0		2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	71.0	52.0		79.0	57.0		64.0	44.0		22.0	48.0	48.0
Actuated g/C Ratio	0.44	0.32		0.49	0.36		0.40	0.28		0.14	0.30	0.30
v/c Ratio	0.96	0.92		0.98	1.31		0.87	0.85		0.99	0.69	0.41
Control Delay	85.7	71.9		95.2	184.2		62.6	60.2		106.7	52.5	9.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	85.7	71.9		95.2	184.2		62.6	60.2		106.7	52.5	9.4
LOS	F	E		F	F		E	E		F	D	A
Approach Delay		74.2			171.4			60.6			60.6	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	54.6	176.3		67.6	~332.4		48.1	123.7		76.6	108.6	6.0
Queue Length 95th (m)	#96.3	#207.0		#125.6	#374.9		#92.8	142.2		#112.9	125.3	29.3
Internal Link Dist (m)		312.2			181.0			207.1			198.2	
Turn Bay Length (m)	95.0			197.5			96.0			107.5		148.0
Base Capacity (vph)	209	1091		268	1195		286	1348		466	1508	608
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.96	0.92		0.98	1.31		0.84	0.85		0.99	0.69	0.41

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

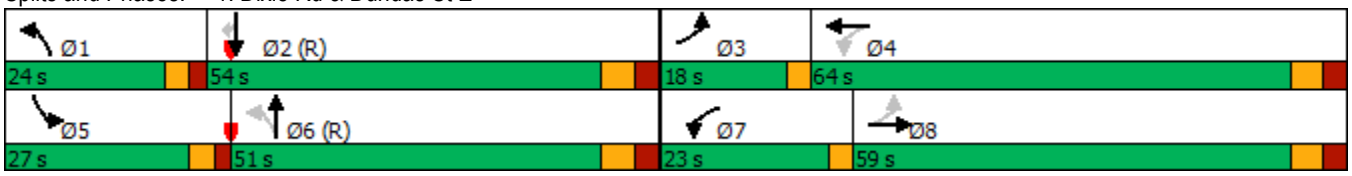
Maximum v/c Ratio: 1.31

Intersection Signal Delay: 96.0	Intersection LOS: F
Intersection Capacity Utilization 116.9%	ICU Level of Service H
Analysis Period (min) 15	

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

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

Splits and Phases: 1: Dixie Rd & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	838	151	257	1175	355	234	901	222	452	1020	246
Future Volume (vph)	196	838	151	257	1175	355	234	901	222	452	1020	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	7.0	7.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1716	3328		1750	3306		1750	4806		3395	5029	1503
Flt Permitted	0.08	1.00		0.07	1.00		0.15	1.00		0.95	1.00	1.00
Satd. Flow (perm)	139	3328		134	3306		274	4806		3395	5029	1503
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	200	855	154	262	1199	362	239	919	227	461	1041	251
RTOR Reduction (vph)	0	9	0	0	18	0	0	27	0	0	0	158
Lane Group Flow (vph)	200	1000	0	262	1543	0	239	1119	0	461	1041	94
Confl. Peds. (#/hr)	51		40	40		51	7		11	11		7
Heavy Vehicles (%)	4%	4%	3%	2%	2%	4%	2%	3%	3%	2%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4			6					2
Actuated Green, G (s)	67.0	52.0		75.0	57.0		62.0	44.0		22.0	48.0	48.0
Effective Green, g (s)	67.0	52.0		75.0	57.0		62.0	44.0		22.0	48.0	48.0
Actuated g/C Ratio	0.42	0.32		0.47	0.36		0.39	0.28		0.14	0.30	0.30
Clearance Time (s)	3.0	7.0		3.0	7.0		5.0	7.0		5.0	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
Lane Grp Cap (vph)	206	1081		264	1177		272	1321		466	1508	450
v/s Ratio Prot	0.09	0.30		c0.12	c0.47		0.10	0.23		c0.14	c0.21	
v/s Ratio Perm	0.32			0.34			c0.24					0.06
v/c Ratio	0.97	0.92		0.99	1.31		0.88	0.85		0.99	0.69	0.21
Uniform Delay, d1	49.1	52.1		52.0	51.5		37.0	54.8		68.9	49.4	41.8
Progression Factor	0.94	1.17		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	47.3	10.6		53.1	146.1		25.8	6.9		38.5	2.6	1.0
Delay (s)	93.6	71.9		105.0	197.6		62.8	61.7		107.3	52.1	42.9
Level of Service	F	E		F	F		E	E		F	D	D
Approach Delay (s)		75.5			184.3			61.9			65.3	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	101.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	116.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1214	37	46	1669	159	76	0	25	130	9	19
Future Volume (vph)	44	1214	37	46	1669	159	76	0	25	130	9	19
Satd. Flow (prot)	1750	3447	0	1750	3443	0	1750	0	1566	1750	1636	0
Flt Permitted	0.087			0.137			0.738			0.950		
Satd. Flow (perm)	160	3447	0	252	3443	0	1349	0	1528	1728	1636	0
Satd. Flow (RTOR)		4			15				55		1	
Lane Group Flow (vph)	47	1345	0	49	1966	0	82	0	27	140	30	0
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		6	6		4		4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0		8.0	8.0	8.0	
Minimum Split (s)	34.0	34.0		34.0	34.0		44.0		44.0	44.0	44.0	
Total Split (s)	38.0	38.0		38.0	38.0		42.0		42.0	42.0	42.0	
Total Split (%)	47.5%	47.5%		47.5%	47.5%		52.5%		52.5%	52.5%	52.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0		3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		4.0		4.0	4.0	4.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None		None	None	None	
Act Effct Green (s)	46.0	46.0		46.0	46.0		20.0		20.0	20.0	20.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.25		0.25	0.25	0.25	
v/c Ratio	0.51	0.68		0.34	0.99		0.24		0.06	0.32	0.07	
Control Delay	47.1	23.1		18.9	32.8		21.5		1.7	23.4	17.1	
Queue Delay	0.0	0.0		0.0	22.5		0.0		0.0	0.0	0.0	
Total Delay	47.1	23.1		18.9	55.3		21.5		1.7	23.4	17.1	
LOS	D	C		B	E		C		A	C	B	
Approach Delay		23.9			54.4			16.6			22.3	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	6.4	110.1		3.0	260.2		11.5		0.0	20.0	3.9	
Queue Length 95th (m)	m#39.6	#216.4		m6.8	m#360.6		15.4		1.8	23.4	6.9	
Internal Link Dist (m)		184.5			312.2			88.0			88.9	
Turn Bay Length (m)	78.0			81.0								
Base Capacity (vph)	92	1985		144	1987		590		699	756	716	
Starvation Cap Reductn	0	0		0	0		0		0	0	0	
Spillback Cap Reductn	0	0		0	132		0		0	0	0	
Storage Cap Reductn	0	0		0	0		0		0	0	0	
Reduced v/c Ratio	0.51	0.68		0.34	1.06		0.14		0.04	0.19	0.04	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 28 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

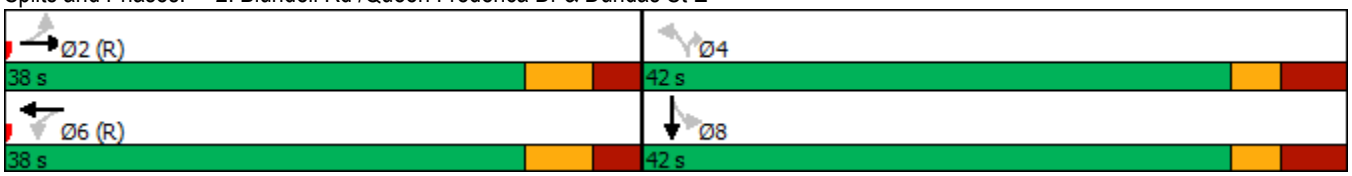
Maximum v/c Ratio: 0.99

Intersection Signal Delay: 40.3	Intersection LOS: D
Intersection Capacity Utilization 82.4%	ICU Level of Service E
Analysis Period (min) 15	

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

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

Splits and Phases: 2: Blundell Rd /Queen Frederica Dr & Dundas St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	1214	37	46	1669	159	76	0	25	130	9	19
Future Volume (vph)	44	1214	37	46	1669	159	76	0	25	130	9	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0		7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00		0.98	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99		1.00	0.99	1.00	
Frt	1.00	1.00		1.00	0.99		1.00		0.85	1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95	1.00	
Satd. Flow (prot)	1750	3446		1745	3443		1737		1528	1728	1636	
Flt Permitted	0.09	1.00		0.14	1.00		0.74		1.00	0.95	1.00	
Satd. Flow (perm)	160	3446		251	3443		1349		1528	1728	1636	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	47	1305	40	49	1795	171	82	0	27	140	10	20
RTOR Reduction (vph)	0	2	0	0	6	0	0	0	20	0	1	0
Lane Group Flow (vph)	47	1343	0	49	1960	0	82	0	7	140	29	0
Confl. Peds. (#/hr)	12		18	18		12	12		19	19		12
Heavy Vehicles (%)	2%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm		Perm	Perm	NA	
Protected Phases		2			6						8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	46.0	46.0		46.0	46.0		20.0		20.0	20.0	20.0	
Effective Green, g (s)	46.0	46.0		46.0	46.0		20.0		20.0	20.0	20.0	
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.25		0.25	0.25	0.25	
Clearance Time (s)	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	
Lane Grp Cap (vph)	92	1981		144	1979		337		382	432	409	
v/s Ratio Prot		0.39			c0.57						0.02	
v/s Ratio Perm	0.29			0.20			0.06		0.00	c0.08		
v/c Ratio	0.51	0.68		0.34	0.99		0.24		0.02	0.32	0.07	
Uniform Delay, d1	10.2	11.8		9.0	16.8		24.0		22.6	24.5	22.9	
Progression Factor	1.54	1.43		1.04	1.17		1.00		1.00	1.00	1.00	
Incremental Delay, d2	17.0	1.7		2.3	10.2		0.4		0.0	0.4	0.1	
Delay (s)	32.7	18.7		11.7	29.8		24.3		22.6	24.9	23.0	
Level of Service	C	B		B	C		C		C	C	C	
Approach Delay (s)		19.2			29.4			23.9			24.6	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	1203	19	88	1553	49	21	11	110	20	2	51
Future Volume (vph)	65	1203	19	88	1553	49	21	11	110	20	2	51
Satd. Flow (prot)	1733	3453	0	1750	3444	0	1700	1555	0	1750	1531	0
Flt Permitted	0.128			0.176			0.722			0.619		
Satd. Flow (perm)	233	3453	0	324	3444	0	1270	1555	0	1127	1531	0
Satd. Flow (RTOR)		2			4			111			38	
Lane Group Flow (vph)	66	1234	0	89	1618	0	21	122	0	20	54	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	35.5	35.5		9.5	35.5		46.5	46.5		46.5	46.5	
Total Split (s)	96.0	96.0		13.0	96.0		51.0	51.0		51.0	51.0	
Total Split (%)	60.0%	60.0%		8.1%	60.0%		31.9%	31.9%		31.9%	31.9%	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		0.0	2.5		4.5	4.5		4.5	4.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	109.4	109.4		123.7	120.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.68	0.68		0.77	0.75		0.16	0.16		0.16	0.16	
v/c Ratio	0.42	0.52		0.28	0.63		0.10	0.36		0.11	0.19	
Control Delay	26.8	16.2		10.6	17.9		50.6	12.9		50.8	21.0	
Queue Delay	0.0	0.0		0.0	1.8		0.0	0.0		0.0	0.0	
Total Delay	26.8	16.2		10.6	19.6		50.6	12.9		50.8	21.0	
LOS	C	B		B	B		D	B		D	C	
Approach Delay		16.7			19.2			18.4			29.0	
Approach LOS		B			B			B			C	
Queue Length 50th (m)	11.3	123.7		3.2	90.6		5.2	2.7		4.9	3.9	
Queue Length 95th (m)	29.3	148.8		m12.4	m275.0		12.9	19.4		12.7	15.7	
Internal Link Dist (m)		148.2			184.5			118.2			63.2	
Turn Bay Length (m)	46.0			60.0			48.5			35.0		
Base Capacity (vph)	159	2362		339	2587		345	503		306	443	
Starvation Cap Reductn	0	0		0	753		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.42	0.52		0.26	0.88		0.06	0.24		0.07	0.12	

Intersection Summary

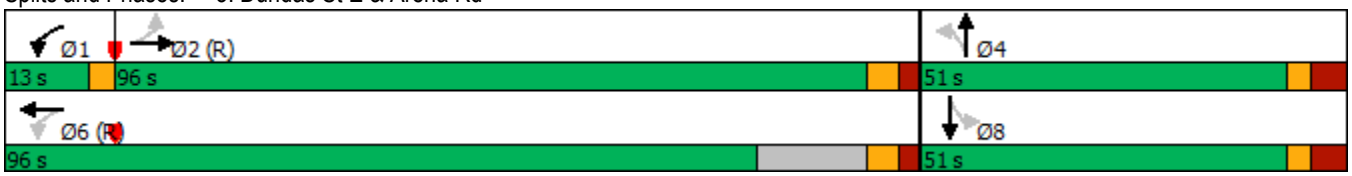
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 114 (71%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 3: Dundas St E & Arena Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	1203	19	88	1553	49	21	11	110	20	2	51
Future Volume (vph)	65	1203	19	88	1553	49	21	11	110	20	2	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1729	3452		1748	3446		1671	1554		1731	1530	
Flt Permitted	0.13	1.00		0.18	1.00		0.72	1.00		0.62	1.00	
Satd. Flow (perm)	232	3452		325	3446		1269	1554		1128	1530	
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)	66	1215	19	89	1569	49	21	11	111	20	2	52
RTOR Reduction (vph)	0	1	0	0	1	0	0	93	0	0	32	0
Lane Group Flow (vph)	66	1233	0	89	1617	0	21	29	0	20	22	0
Confl. Peds. (#/hr)	11		24	24		11	15		11	11		15
Heavy Vehicles (%)	3%	3%	5%	2%	3%	2%	5%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	109.5	109.5		120.2	120.2		25.8	25.8		25.8	25.8	
Effective Green, g (s)	109.5	109.5		120.2	120.2		25.8	25.8		25.8	25.8	
Actuated g/C Ratio	0.68	0.68		0.75	0.75		0.16	0.16		0.16	0.16	
Clearance Time (s)	6.5	6.5		3.0	6.5		7.5	7.5		7.5	7.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	158	2362		312	2588		204	250		181	246	
v/s Ratio Prot		0.36		0.01	c0.47			c0.02			0.01	
v/s Ratio Perm	0.28			0.20			0.02			0.02		
v/c Ratio	0.42	0.52		0.29	0.62		0.10	0.12		0.11	0.09	
Uniform Delay, d1	11.2	12.4		7.7	9.3		57.2	57.3		57.3	57.1	
Progression Factor	1.00	1.00		1.50	1.44		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.9	0.8		0.2	0.4		0.2	0.2		0.3	0.2	
Delay (s)	19.1	13.2		11.7	13.8		57.5	57.6		57.6	57.3	
Level of Service	B	B		B	B		E	E		E	E	
Approach Delay (s)		13.5			13.7			57.5			57.3	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	55	51	147	112	38
Future Vol, veh/h	24	55	51	147	112	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	59	54	156	119	40
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.8	8.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	26%	30%	0%
Vol Thru, %	74%	0%	75%
Vol Right, %	0%	70%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	198	79	150
LT Vol	51	24	0
Through Vol	147	0	112
RT Vol	0	55	38
Lane Flow Rate	211	84	160
Geometry Grp	1	1	1
Degree of Util (X)	0.249	0.102	0.186
Departure Headway (Hd)	4.256	4.384	4.192
Convergence, Y/N	Yes	Yes	Yes
Cap	830	821	860
Service Time	2.35	2.393	2.201
HCM Lane V/C Ratio	0.254	0.102	0.186
HCM Control Delay	8.8	7.9	8.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1	0.3	0.7

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Future Vol, veh/h	0	2	3	34	7	21	2	30	34	10	10	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles, %	2	2	2	6	2	2	2	2	3	2	2	2
Mvmt Flow	0	2	3	35	7	21	2	31	35	10	10	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.1	7.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	55%	50%
Vol Thru, %	45%	40%	11%	50%
Vol Right, %	52%	60%	34%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	5	62	20
LT Vol	2	0	34	10
Through Vol	30	2	7	10
RT Vol	34	3	21	0
Lane Flow Rate	67	5	63	20
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.005	0.071	0.024
Departure Headway (Hd)	3.765	3.774	4.065	4.205
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	948	943	880	849
Service Time	1.8	1.818	2.096	2.244
HCM Lane V/C Ratio	0.071	0.005	0.072	0.024
HCM Control Delay	7.1	6.8	7.4	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.2	0.1

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	0	66	56	0	47
Future Vol, veh/h	30	0	66	56	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	0	73	62	0	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	156	104	0	0	135	0
Stage 1	104	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	835	951	-	-	1449	-
Stage 1	920	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	835	951	-	-	1449	-
Mov Cap-2 Maneuver	835	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	835	1449	-
HCM Lane V/C Ratio	-	-	0.04	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	14	69	0	27
Future Vol, veh/h	49	0	14	69	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	0	16	77	0	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	54	0	163	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	109	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1551	-	828	1013
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1551	-	819	1013
Mov Cap-2 Maneuver	-	-	-	-	819	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	906	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1013	-	-	1551	-
HCM Lane V/C Ratio	0.03	-	-	0.01	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-