TRANSPORTATION IMPACT STUDY

2184 & 2194 ONEIDA CRESCENT

CITY OF MISSISSAUGA
REGION OF PEEL

PREPARED FOR:

DAVID SCHROEDER

PREPARED BY:

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MAY 2026

CFCA FILE NO. 2958-7552

CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev.0	May 2026	Issued for 1st Submission

Executive Summary

Background

David Schroeder retained C.F. Crozier & Associates Inc. to complete a Transportation Impact Study to support the proposed residential development located at 2184 & 2194 Oneida Crescent, City of Mississauga (City), Region of Peel (Region).

The subject lands cover an area of approximately 1.97 ha and currently consist of two (2) existing residential dwellings. The site is in a residential neighborhood and bounded by Oneida Crescent to the north, existing residential properties to the east and west, and an existing Golf course to the south.

Per the Concept Plan prepared by Glen Schnarr & Associates Inc. (GSAI), dated March 16, 2026, the elements envisioned for this development include:

- Eight (8) new lots as part of the plan
    - Lots 1—4 will be future freehold detached dwelling units as part of the Draft Plan of Subdivision.
    - Lots 5—8 will be future condo detached dwelling units as part of the Common Element Condominium (CEC).
    - The structures within 2184 Oneida Crescent are proposed to remain as existing and will be re-established as a POTL within the proposed CEC.
    - The structures within 2194 Oneida Crescent are proposed to be demolished.

As confirmed in the Terms of Reference, the Transportation Impact Study analyzes the Queensway West and Oneida Crescent/Damein Way intersection, as well as the Oneida Crescent site access.

Existing Conditions

Transportation data was obtained and used to support the analysis in this study. Turning movement counts were collected on September 10, 2025, at the intersection of Queensway West and Oneida Crescent by Spectrum Traffic Inc.

Under existing conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS “B” and “A” during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 10.2 seconds during the AM peak hour, and 8.3 seconds during the PM peak hour, indicating minimal delays at all approaches. A maximum degree utilization ratio of 0.42 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under existing conditions.

Future Background Conditions

Through consultation with the City of Mississauga, one background development at 900 & 904 Mississauga Heights Drive was identified within the study area. This development consists of an 18-unit low-rise residential condominium, assumed to be completed prior to the first horizon year of 2026.

Under 2031 future background conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at a LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 11.1 seconds during the AM peak hour, and 8.6 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.49 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2031 future background conditions.

Site Generated Traffic

The trip generation of the proposed residential dwelling was forecasted using published data from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition. The applicable equations for Land Use Category (LUC) 210 "Single Family Detached Housing" were applied to the proposed residential dwelling units.

The trip generation analysis was undertaken using an earlier concept plan which had higher unit yields and thus resulted in a more conservative analysis. Based on this, the proposed development is expected to generate a total of 12 and 11 two-way trips during the weekday a.m. and p.m. peak hours, respectively. The trip distribution expects the site generated trips to enter and exit the study road network through Queensway West. The site generated trips were assigned accordingly.

Future Total Conditions

Under 2031 future total conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 11.3 seconds during the AM peak hour, and 8.6 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.50 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2031 future total conditions.

The expected intersection operations in the future total scenarios are similar to those in the future background scenarios in their respective horizon years. This indicates that the study road network is expected to operate efficiently while accommodating the additional site generated volumes.

Site Access Safety Review

The proposed development is supportable from a sight distance perspective as the minimum sight distance requirements are justified.

Furthermore, the site access of the proposed development was compared against the Transportation Association of Canada Geometric Design Guide for Canadian Roads for intersection spacing, driveway spacing, corner clearance, and throat length. It was found that the site access is supportable from a safety perspective as the manual's minimum design requirements are met.

Parking Review

The City of Mississauga Zoning By-Law No. 0225-2007 requirements were reviewed to confirm the adequacy of the development's proposed parking supply. The Zoning By-Law requires the development to provide a total of 17 parking spaces, including one (1) visitor space. Based on the Concept Plan, the proposed development is expected to provide 16 parking spaces, resulting in a deficiency of one (1) visitor parking space.

Transportation Demand Management

The site's TDM opportunities are typical for suburban Mississauga, with a continued reliance on personal vehicles, though some active transportation facilities support trips to nearby schools and commercial areas, and transit options are available to major trip generators such as Square One, Dixie Outlet Mall, and the Cooksville GO Station.

The modal split for the area surrounding the proposed development was analyzed for 2016 and 2022. It was found that Auto-Driver trips decreased from 78% in 2016 to 66% in 2022. This change highlights the potential to implement and strengthen Transportation Demand Management measures in the area, as a reduction in single-occupancy vehicle (SOV) trips has been observed.

To encourage active transportation or public transit as viable and attractive alternative to automobile use, the following measures are available:

- Bicycle Repair Facilities
- Pre-Loaded PRESTO Cards
- Transit Marketing
- Real Time Transit Information

These measures should encourage residents to consider active transportation or public transit for regular travel needs, reducing reliance on SOV trips and supporting the City's climate and sustainability goals.

Conclusion

The analysis contained within this report was prepared using the most recent Concept Plan. Any minor change to the Concept Plan is not expected to materially affect the findings and recommendations contained within this report.

To conclude, the proposed development at 2184 & 2194 Oneida Crescent can be supported from a transportation engineering perspective.

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1.0 Introduction

David Schroeder retained C.F. Crozier & Associates Inc. (Crozier) to complete a Transportation Impact Study to support the proposed residential development located at 2184 & 2194 Oneida Crescent, City of Mississauga (City), Region of Peel (Region).

1.1 Developments Lands

The subject lands cover an area of approximately 1.97 ha and currently consist of two (2) existing residential dwellings. The site is in a residential neighborhood and bounded by Oneida Crescent to the north, existing residential properties to the east and west, and an existing Golf course to the south.

Figure 1 includes the Site Location.

Figure 1: Site Location

1.2 Development Proposal

Per the Concept Plan prepared by Glen Schnarr & Associates Inc. (GSAI), dated March 16, 2026, the elements envisioned for this development include:

- Eight (8) new lots as part of the plan
    - Lots 1—4 will be future freehold detached dwelling units as part of the Draft Plan of Subdivision.
    - Lots 5—8 will be future condo detached dwelling units as part of the Common Element Condominium (CEC).
- The structures within 2184 Oneida Crescent are proposed to remain as existing and will be re-established as a POTL within the proposed CEC.
- The structures within 2194 Oneida Crescent are proposed to be demolished.
- A condo road with a cul-de-sac will be built to service the individual lots to Oneida Crescent.
- Access to the site is proposed through one full-moves access off Oneida Crescent.

The transportation analysis presented herein is based on the previous concept plan dated June 23, 2025, which assumed a more conservative total unit count of nine (9) dwelling units, compared to eight (8) dwellings shown on the updated concept plan. Given that the revised plan reflects a minor reduction in unit yield, the change is not expected to significantly affect the findings or conclusions of the analysis presented in this report.

Figure 2 outlines the most recent Concept Plan (dated March 16, 2026).

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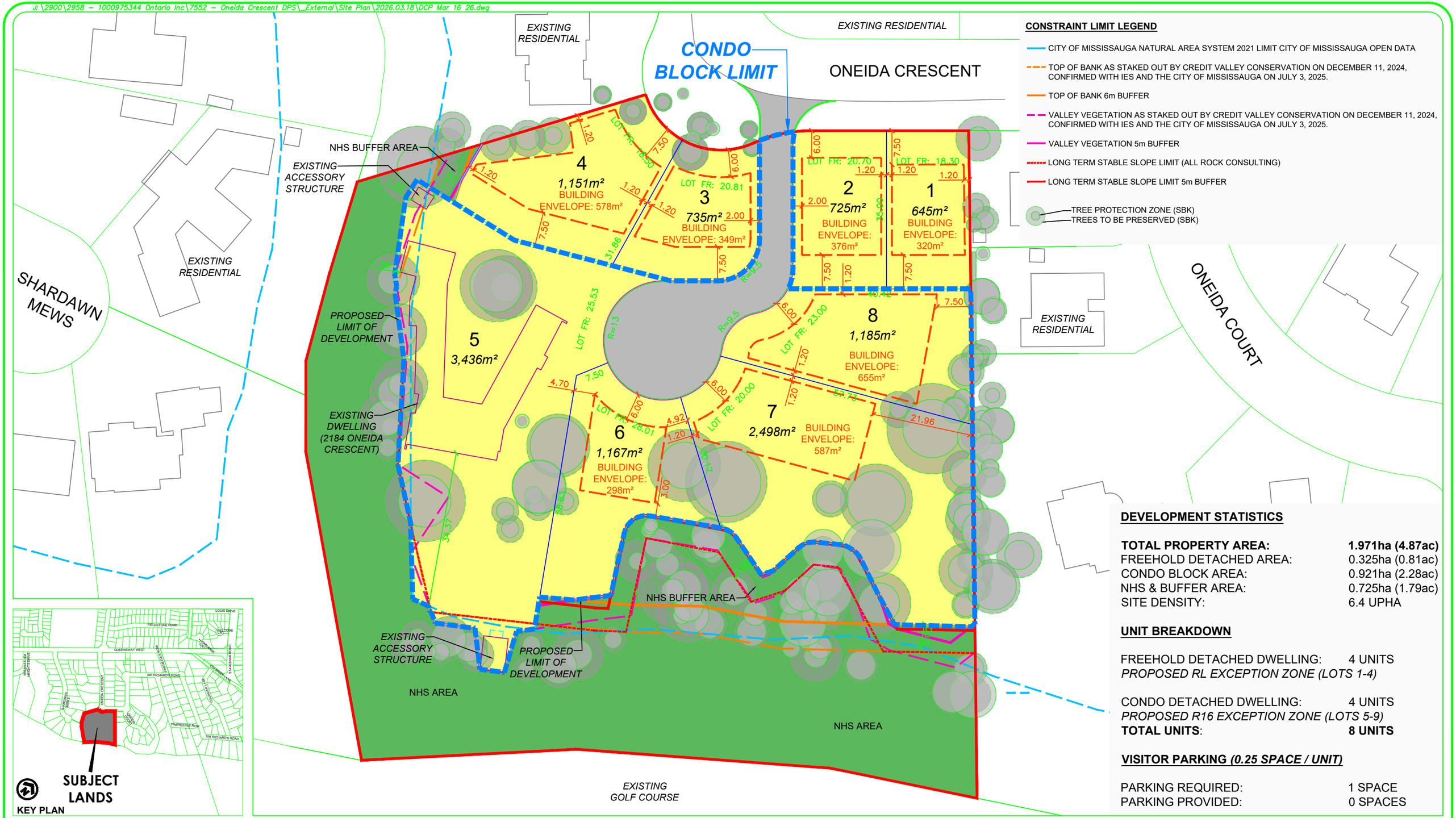


CONSTRAINT LIMIT LEGEND

- CITY OF MISSISSAUGA NATURAL AREA SYSTEM 2021 LIMIT CITY OF MISSISSAUGA OPEN DATA
- TOP OF BANK AS STAKED OUT BY CREDIT VALLEY CONSERVATION ON DECEMBER 11, 2024, CONFIRMED WITH IES AND THE CITY OF MISSISSAUGA ON JULY 3, 2025.
- TOP OF BANK 6m BUFFER
- VALLEY VEGETATION AS STAKED OUT BY CREDIT VALLEY CONSERVATION ON DECEMBER 11, 2024, CONFIRMED WITH IES AND THE CITY OF MISSISSAUGA ON JULY 3, 2025.
- VALLEY VEGETATION 5m BUFFER
- LONG TERM STABLE SLOPE LIMIT (ALL ROCK CONSULTING)
- LONG TERM STABLE SLOPE LIMIT 5m BUFFER
- TREE PROTECTION ZONE (SBK)
- TREES TO BE PRESERVED (SBK)

DEVELOPMENT STATISTICS

TOTAL PROPERTY AREA:	**1.971ha (4.87ac)**
FREEHOLD DETACHED AREA:	0.325ha (0.81ac)
CONDO BLOCK AREA:	0.921ha (2.28ac)
NHS & BUFFER AREA:	0.725ha (1.79ac)
SITE DENSITY:	6.4 UPHA

UNIT BREAKDOWN

FREEHOLD DETACHED DWELLING:	4 UNITS
PROPOSED RL EXCEPTION ZONE (LOTS 1-4)	
CONDO DETACHED DWELLING:	4 UNITS
PROPOSED R16 EXCEPTION ZONE (LOTS 5-9)	
TOTAL UNITS:	**8 UNITS**

VISITOR PARKING *(0.25 SPACE / UNIT)*

PARKING REQUIRED:	1 SPACE
PARKING PROVIDED:	0 SPACES

DEVELOPMENT CONCEPT PLAN
FREEHOLD & CONDOMINIUM DETACHED DWELLINGS

2184 & 2194 ONEIDA CRESCENT,
PART OF LOTS C & D, RANGE 3, CREDIT INDIAN RESERVE,
CITY OF MISSISSAUGA, REGIONAL MUNICIPALITY OF PEEL

SCALE 1:750
MARCH 16, 2026

GSAI
Glen Schnarr & Associates Inc.

1.3 Study Purpose and Scope

The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the study road network and to recommend or confirm any required mitigation measures, if warranted. This TIS is in support of a Draft Plan of Subdivision (DPS) and a Zoning By-law Amendment (ZBA) application.

The study reviews the following main aspects of the proposed development from a transportation engineering perspective:

- Impacts of development traffic on the study road network through analyzing existing, future background, and future total traffic operations;
- Potential external roadway improvements to mitigate traffic impacts;
- Adequacy of the Concept Plan to allow for anticipated vehicle servicing internally;
- Safety requirements of the proposed site accesses;
- Conformance with the City of Mississauga Zoning By-Law 0225-2007 and;
- Existing, future, and site-specific Transportation Demand Management opportunities.

The study has been completed in accordance with the City of Mississauga's (City) Transportation Impact Study Guidelines (December 2022) and the Region of Peel (Region) Traffic Impact Study General Terms of Reference.

Appendix A includes the Terms of Reference for the study, which was confirmed with City of Mississauga and Region of Peel staff.

As confirmed in the Terms of Reference, this Transportation Impact Study considers the following study intersections:

- Queensway West and Oneida Crescent/Damien Way
- Oneida Crescent site access

For the purposes of this study, it has been assumed that the entirety of 2184 Oneida Crescent will be built out by 2026. The City's guidelines require analysis of the full build-out horizon and a five-year horizon from the estimated year of full build-out. Therefore, the 2025 (current), 2026 and 2031 horizon years were analyzed. These horizon years were confirmed through the Terms of Reference.

2.0 Existing Conditions

This section outlines the current conditions of the transportation network in the vicinity of the site. Details of the study road network, including traffic controls, lane configurations, speed limits, transit routes and stops, active transportation infrastructure and other relevant transportation elements are identified. The existing traffic operations are also summarized.

2.1 Study Road Network

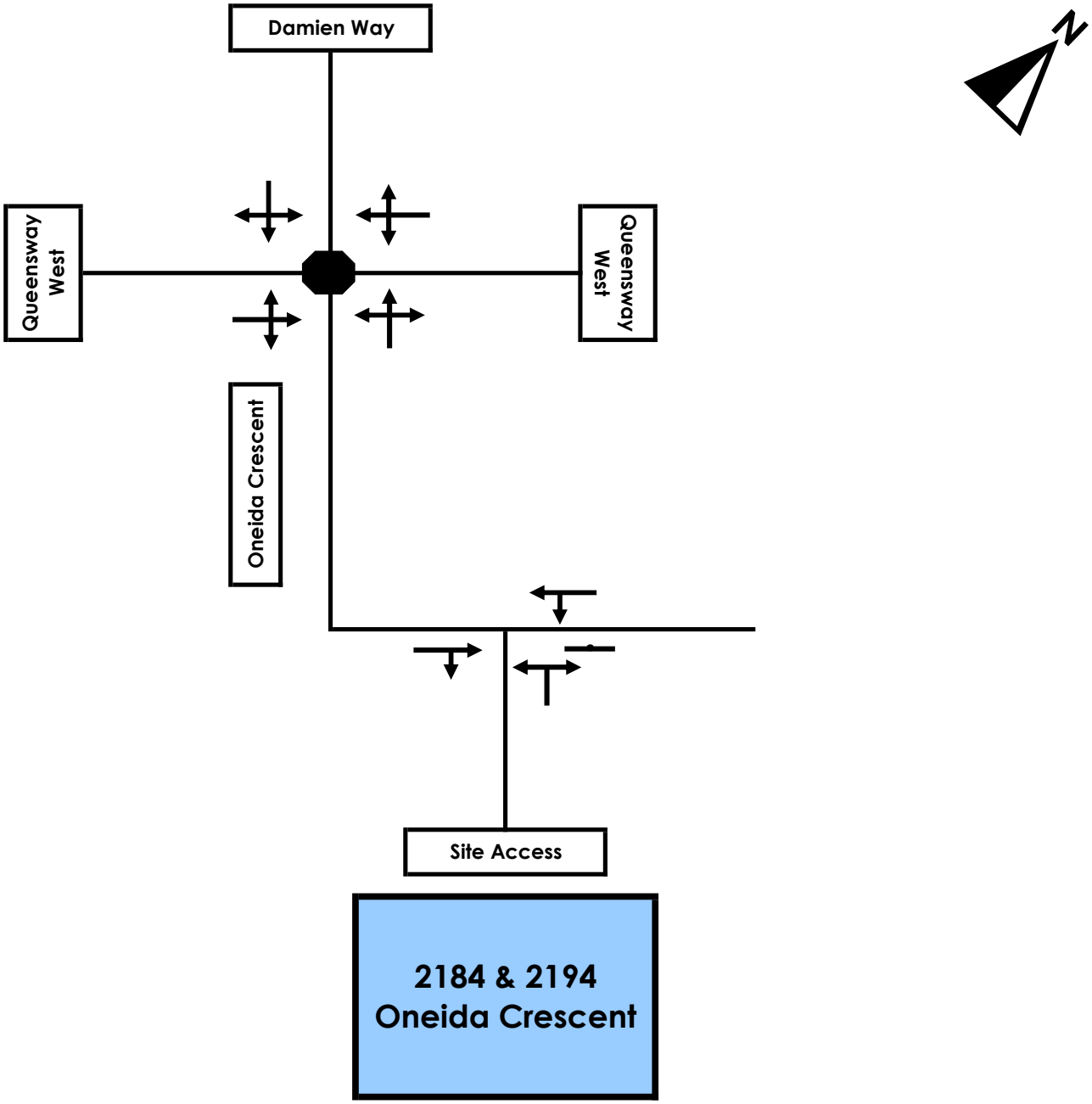
The study road network consists of the existing road network near the site, which includes the study intersections and the adjoining roadway segments. **Table 1** outlined the details of the study road network.

Table 1: Study Roadways

Feature	Roadways		
	Queensway West	**Oneida Crescent**	**Damien Way**
Direction	Two-way (East-West)	Two-way (North-South)	Two-way (Crescent)
Span	Old Carriage Road to Hurontario Street	Queensway West to Sir Richards Road	Morrison Avenue to Queensway West
Classification	Minor Collector	Local	Local
Jurisdiction	City of Mississauga (Glengarry Road to Mavis Road)[1]	City of Mississauga	City of Mississauga
Speed Limit	40 km/h (posted)	40 km/h (assumed)	40 km/h (assumed)
Number of travel lanes	Two	Two	Two
Median type	None	None	None
Active Transportation	4.0 m Multi-Use Path (South Side)	None	Sidewalk on both sides

Note 1: The segment of Queensway West under analysis is not a part of the regional roads section as noted in the Region of Peel Regional Road Map.

Figure 3 illustrates the study road network, including the lane configurations and intersection control at the study intersections.



Legend

All-Way Stop

Stop Sign

2184 & 2194 Oneida Crescent, City of Mississauga

Study Road Network

CROZIER CONSULTING ENGINEERS

Figure 3

Project No. 2958-7552

Date. 2026-04-02

Analyst: Ramy Kamal

2.2 Public Transit Services

The Subject Site is situated in an area with relatively limited access to the existing MiWay transit network operated by the City of Mississauga. The closest transit service is available at the Huron Park Access, located near the intersection of Queensway West and Huron Park, which is within a seven (7) minute walking distance. From this connection point, riders can access MiWay routes linking to TTC bus service at Sherway Gardens, other MiWay services, and regional connections via GO Transit at Cooksville GO Station.

Table 2 outlines the details of nearby existing transit routes.

Table 2: Existing Transit Services

Route	Start and End Points	Times of Operation	Peak Hour Headways (min)	Transit Stops
4 North Service Road	Sherway Gardens and Cooksville GO Station	Weekdays 5am – 1am Weekends 6am – 9pm	40	Mavis Road at Paisley Boulevard West (17-minute walk, 1.2km)
			Limited Service	Huron Park Access at Queensway (7-minute walk, 500m)
Go Transit				
Milton Line	Milton GO Station – Union Station	Weekdays 5:00 am to 9:00 am & 5:00 pm to 8:00 pm	30	Cooksville Go Station (14-minute bike, 4.2km)

2.3 Active Transportation

2.3.1 Cycling Network

The Subject Site has access to a multi-use trail along Queensway West within a three-minute walk. This facility connects directly to on-street bike lanes in Huron Park as well as signed cycling routes along Stavebank Road, offering links to the wider cycling network and nearby transit hubs such as Cooksville GO Station. The Queensway West multi-use trail extends between Glengarry Road and Dixie Road, enhancing east–west cycling connectivity across the area.

2.3.2 Pedestrian Network

Pedestrian infrastructure in the vicinity of the Subject Site is limited. Sidewalks are not provided along Oneida Crescent, requiring pedestrians to travel approximately three minutes north to Queensway West, where sidewalks are available on the north side of the roadway. A multi-use trail on the south side of Queensway West also supports both pedestrian and cycling travel.

Crossing facilities are also limited. A stop-controlled crossing is provided at the intersection of Queensway West and Oneida Crescent, allowing pedestrians to cross east–west safely. To access the sidewalks on the north side of Queensway West, pedestrians must use the intersection at Queensway West and Oneida Crescent, located approximately three minutes north of the Subject Site.

2.4 Transportation Data

Transportation data was obtained and used to support the analysis in this study. Turning movement counts (TMCs) were collected on September 10, 2025, at the intersection of Queensway West and Oneida Crescent by Spectrum Traffic Inc., covering the morning (6:00 a.m. to 10:00 a.m.) and afternoon (3:00 p.m. to 7:00 p.m.) peak periods. As the Queensway West and Oneida Crescent/Damien Way intersection is unsignalized, no signal timing data was required.

Appendix B contains the transportation data used in the study.

2.5 Intersection Modelling

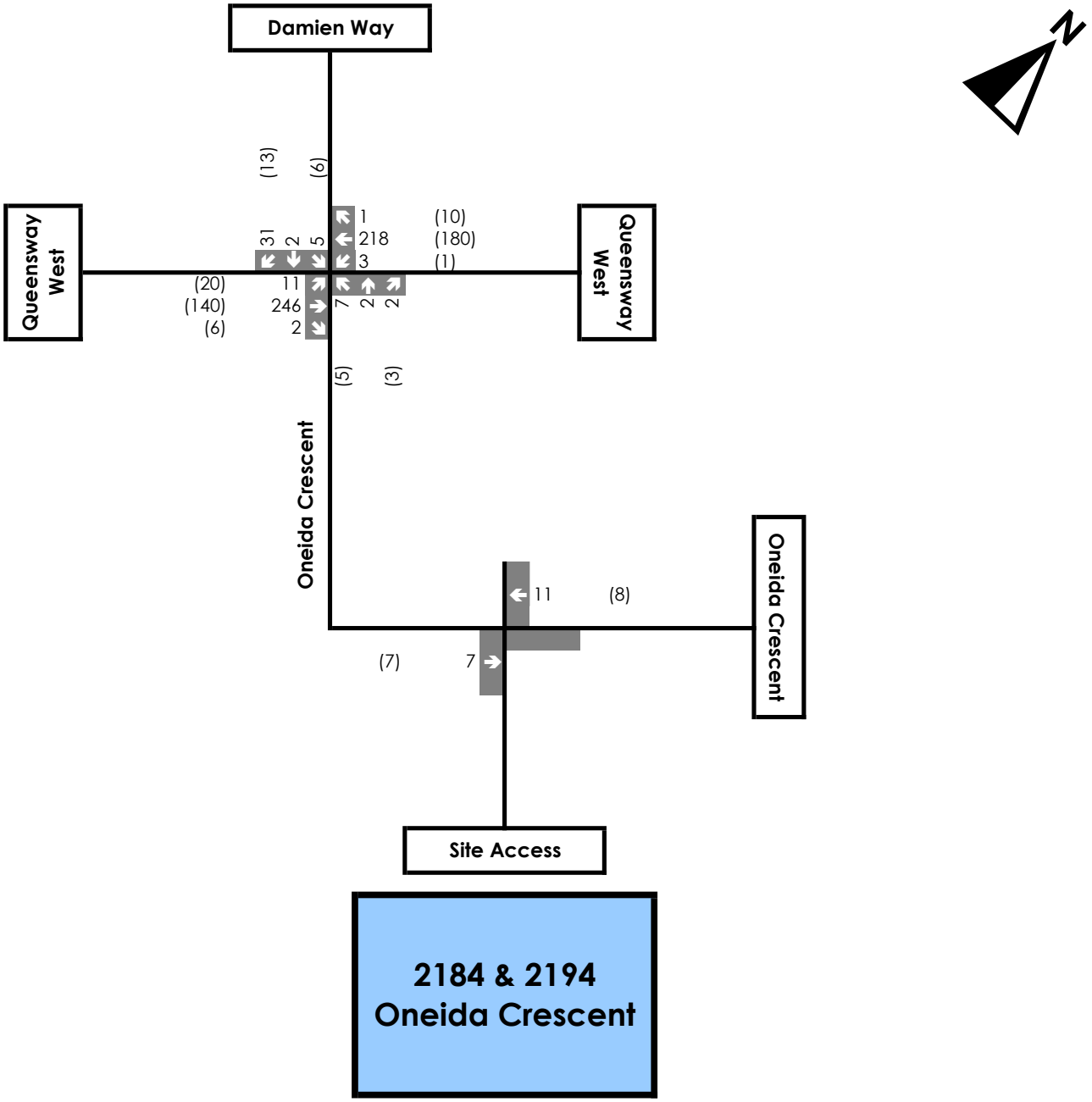
As there are no specific modelling guidelines outlined by the City of Mississauga's Transportation Impact Study Guidelines, default synchro parameters were used, with the exception of peak hour factors (PHFs), heavy vehicle percentages, and pedestrian crossing volumes, which were derived from the existing TMCs. While there is posted signage restricting heavy vehicles on Oneida Crescent, heavy vehicles were modelled according to the TMCs, for a conservative analysis and to best capture realistic travel patterns.

The assessment of intersections is based on the "Highway Capacity Manual (HCM)" methodology. Intersections are assessed using a Level of Service LOS metric with ranges of delay assigned a letter from "A" to "F"; "A" representing low delays and "F" representing heavy delays. **Appendix C** contains Level of Service Definitions.

2.6 Intersection Operations

Table 3 outlines the 2025 existing traffic operations at the study intersection. Synchro 12 was used to model study road network. **Figure 4** illustrates the 2025 existing conditions traffic volumes used in the operational analysis.

Detailed capacity analysis worksheets can be found in **Appendix D**.



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 4
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2025 Existing Traffic Volumes	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal

Table 3: 2025 Existing Conditions Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS		Delay (s)		v/c ratio[1]	
		AM	PM	AM	PM	AM	PM
Queensway West and Oneida Crescent/Damien Way (AWSC)	**Overall**	**B**	**A**	**10.2**	**8.3**	**0.42**	**0.23**
	EBLTR	B	A	10.6	8.4	0.42	0.21
	WBLTR	B	A	10.0	8.3	0.36	0.23
	NBLTR	A	A	8.7	7.7	0.02	0.01
	SBLTR	A	A	8.4	7.5	0.07	0.02

Note 1: The v/c ratio column for an all-way stop-controlled (AWSC) intersection displays degree utilization ratios, not v/c ratios. Degree utilization is the ratio between the projected traffic volumes and the number of opportunities for departures based on the average departure headway per the Highway Capacity Manual, Chapter 17.

Under existing conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 10.2 seconds during the AM peak hour, and 8.3 seconds during the PM peak hour, indicating minimal delays at all approaches. A maximum degree utilization ratio of 0.42 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under existing conditions.

3.0 Future Background Conditions

This section summarizes the future background conditions of the study road network and provides details relating to growth rates, future transportation network improvements, and background developments within the study area. As established in **Section 1.3** (per the Terms of Reference), this study considers the 2026 and 2031 horizon years in the future background traffic analysis, the results of which are summarized in **Section 3.4**.

3.1 Growth Rates

As the portion of Queensway West within the study road network is under the jurisdiction of the City of Mississauga, Corridor growth rates were requested from the City. However, since Queensway West is not a major collector or arterial roadway, growth rates could not be provided. Nonetheless, for a conservative analysis, and to be consistent with recent studies for similar developments nearby, a 2% growth rate was applied along Queensway West, and a 1% growth rate was applied along the local roads.

Correspondence is included in **Appendix A.**

3.2 Planned Roadway Improvements

The City of Mississauga has also identified localized improvements on Queensway West as part of its Traffic Calming Program. Based on the City's Traffic Calming Policy review and consultation with residents and Ward Councillors, Queensway West (Ward 7) has been prioritized for the installation of physical traffic calming measures. Speed studies conducted along the corridor indicated elevated operating speeds, with the 85th percentile speed measured at 57 km/h against a posted speed limit of 40 km/h, confirming the need for intervention.

To address these concerns, the City has recommended the installation of five (5) speed cushions along Queensway West. These measures are intended to reduce travel speeds, improve compliance with posted speed limits, and enhance overall roadway safety for all users. As part of the City's broader 2025 Traffic Calming Program, Queensway West was included among the corridors endorsed for implementation. Staff confirmed that the proposed measures were reviewed with emergency services and MiWay, with no concerns raised.

Appendix E contains excerpts on the planned roadway improvements from the Queensway West Traffic Calming Plan.

3.3 Background Developments

Through consultation with the City of Mississauga, one background development at 900 & 904 Mississauga Heights Drive was identified within the study area. This development consists of an 18-unit low-rise residential condominium, assumed to be completed prior to the first horizon year of 2026. Trip generation for this development, as prepared by LEA Consulting Inc., are summarized in **Table 4**.

Table 4: Summary of Background Development Trips

Land Use	Description	A.M.			P.M.		
		In	Out	Total	In	Out	Total
LUC 220: Multifamily Housing (Low-Rise) – 18 Units	Total New Site Auto Trips	1	3	**4**	4	3	**7**

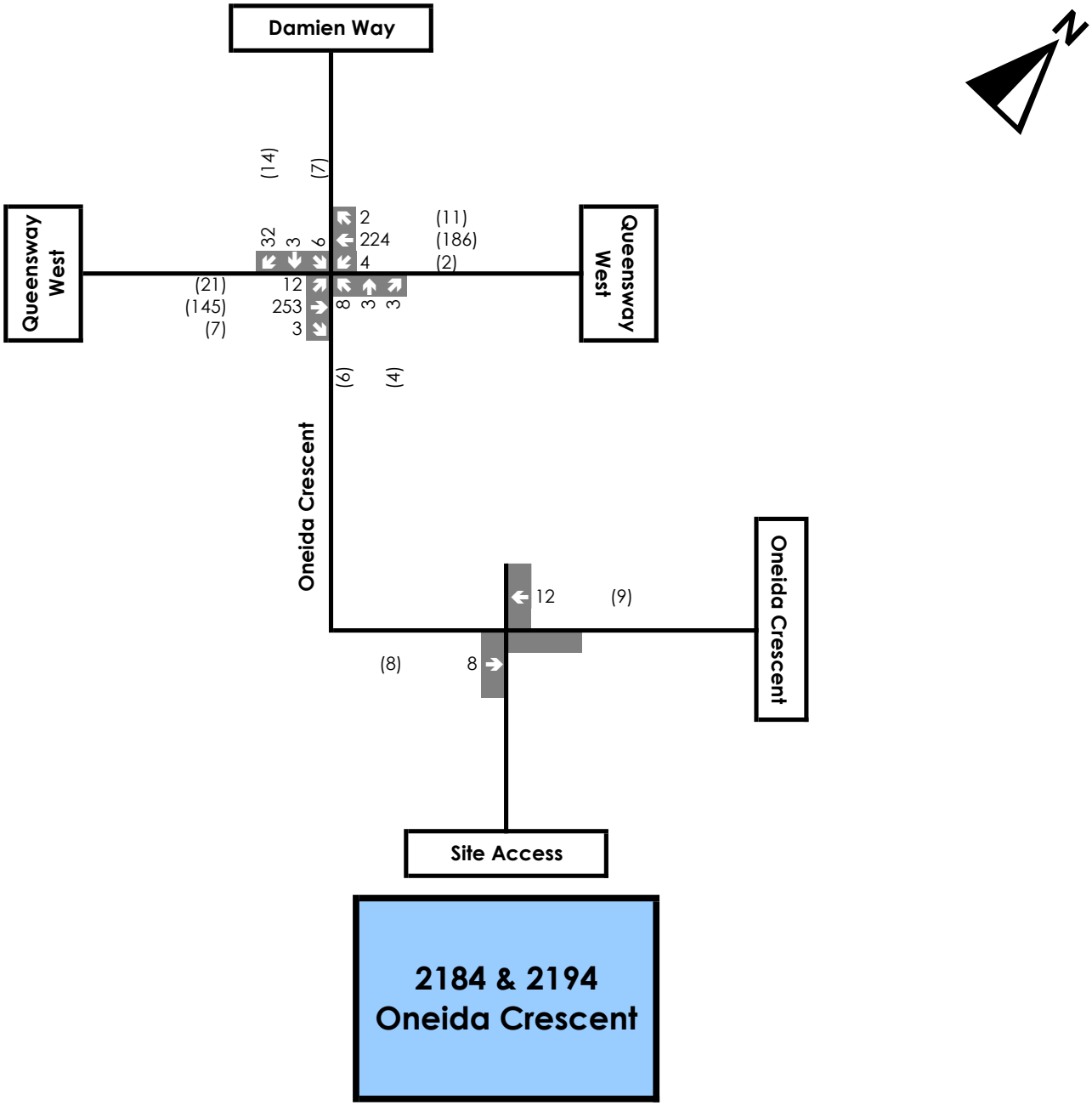
The trips generated from the 900 & 904 Mississauga Heights Drive have been assigned to the study road network based on Figure 4-1 of the LEA TIS.

Excerpts from the LEA TIS can be found in **Appendix F.**

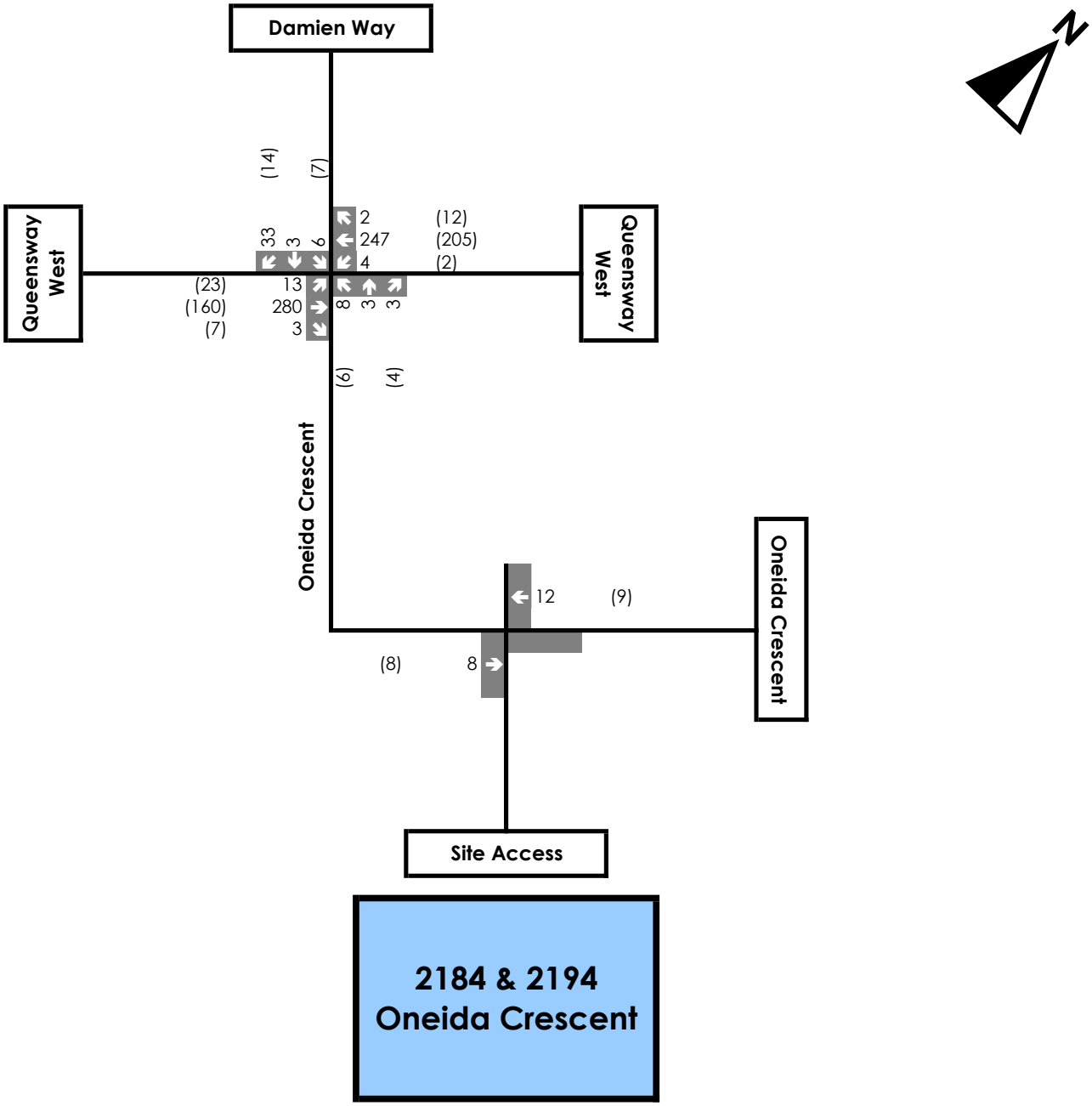
3.4 Intersection Operations

Table 5 and **Table 6** outline the 2026 and 2031 future background traffic operations for the study intersections, respectively. Synchro 12 was used to model the future background study road network. **Figure 5** and **Figure 6** illustrate the 2026 and 2031 future background traffic operations, respectively.

Appendix D contains the detailed capacity analysis worksheets.



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 5
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2026 Future Background Traffic Volumes	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 6
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2031 Future Background Traffic Volumes	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal

Table 5: 2026 Future Background Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS		Delay (s)		v/c ratio[1]	
		AM	PM	AM	PM	AM	PM
Queensway West at Oneida Crescent/Damien Way (AWSC)	**Overall**	**B**	**A**	**10.4**	**8.4**	**0.44**	**0.24**
	EBLTR	B	A	10.9	8.4	0.44	0.24
	WBLTR	B	A	10.3	8.5	0.38	0.21
	NBLTR	A	A	8.8	8.5	0.03	0.01
	SBLTR	A	A	8.5	7.7	0.08	0.03

Note 1: The v/c ratio column for an all-way stop-controlled (AWSC) intersection displays degree utilization ratios, not v/c ratios. Degree utilization is the ratio between the projected traffic volumes and the number of opportunities for departures based on the average departure headway per the Highway Capacity Manual, Chapter 17.

Under 2026 future background conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at a LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 10.4 seconds during the AM peak hour, and 8.4 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.44 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2026 future background conditions.

Table 6: 2031 Future Background Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS		Delay (s)		v/c ratio[1]	
		AM	PM	AM	PM	AM	PM
Queensway West at Oneida Crescent/Damien Way (AWSC)	**Overall**	**B**	**A**	**11.1**	**8.6**	**0.49**	**0.27**
	EBLTR	B	A	11.8	8.5	0.49	0.24
	WBLTR	B	A	10.9	8.7	0.42	0.27
	NBLTR	A	A	9.0	7.8	0.03	0.01
	SBLTR	A	A	8.7	7.6	0.08	0.03

Note 2: The v/c ratio column for an all-way stop-controlled (AWSC) intersection displays degree utilization ratios, not v/c ratios. Degree utilization is the ratio between the projected traffic volumes and the number of opportunities for departures based on the average departure headway per the Highway Capacity Manual, Chapter 17.

Under 2031 future background conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at a LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 11.1 seconds during the AM peak hour, and 8.6 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.49 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2031 future background conditions.

4.0 Site Generated Traffic

The proposed development will result in additional turning movements at the study intersections. Therefore, this section describes the trip forecasting methodology and results of this forecast for the development proposal.

The site generated traffic forecasting methodology for this study consists of two steps. The first step, Trip Generation, projects the number of trips that originate or are destined for the proposed development, while the second step, Trip Distribution and Assignment, assigns trips to the study road network based on the expected distribution of trips to catchment areas and expected shortest paths for trips destined for particular locations.

4.1 Trip Generation

As noted in **Section 0**, the analysis is based on the previously prepared concept plan, which comprises the proposed development phases outlined below:

- Nine (9) Single-detached Units

The trip generation of the proposed residential dwelling was forecasted using published data from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition.

The applicable fitted curve equations for Land Use Category (LUC) 210 "Single Family Detached Housing" was applied to the proposed residential dwelling units.

Relevant excerpts from the ITE Trip Generation Manual, 12th Edition have been included in **Appendix G**. The forecasted trip generation of the proposed residential development is summarized in **Table 7**.

Table 7: Trip Generation

Land Use (Units/GFA)	AM			PM		
	Equation	Trips Generated		Equation	Trips Generated	
		Inbound	Outbound		Inbound	Outbound
LUC 210: Single-Family Detached Housing (9 Units)	T = 0.67(X) + 5.59	3	9	Ln(T) = 0.92 Ln(X) + 0.33	7	4
	Total	**12**		**Total**	**11**	

The proposed development is expected to generate a total of 12 and 11 two-way trips during the weekday a.m. and p.m. peak hours, respectively.

4.2 Trip Distribution

The trips generated by the proposed development were distributed to the study road network using 2016 Transportation Tomorrow Survey (TTS) data. Excerpts from the TTS query have been included in **Appendix H.**

The inbound and outbound trip distributions were derived by filtering TTS data with a trip purpose of "Home", destined to and originating from the subject GTA Zone 3652. The AM and PM distributions were determined by filtering for trips starting during the periods of 6:30 AM – 9:30 PM and 3:30 PM – 6:30 PM, respectively.

Table 8 summarizes the trip distribution summary.

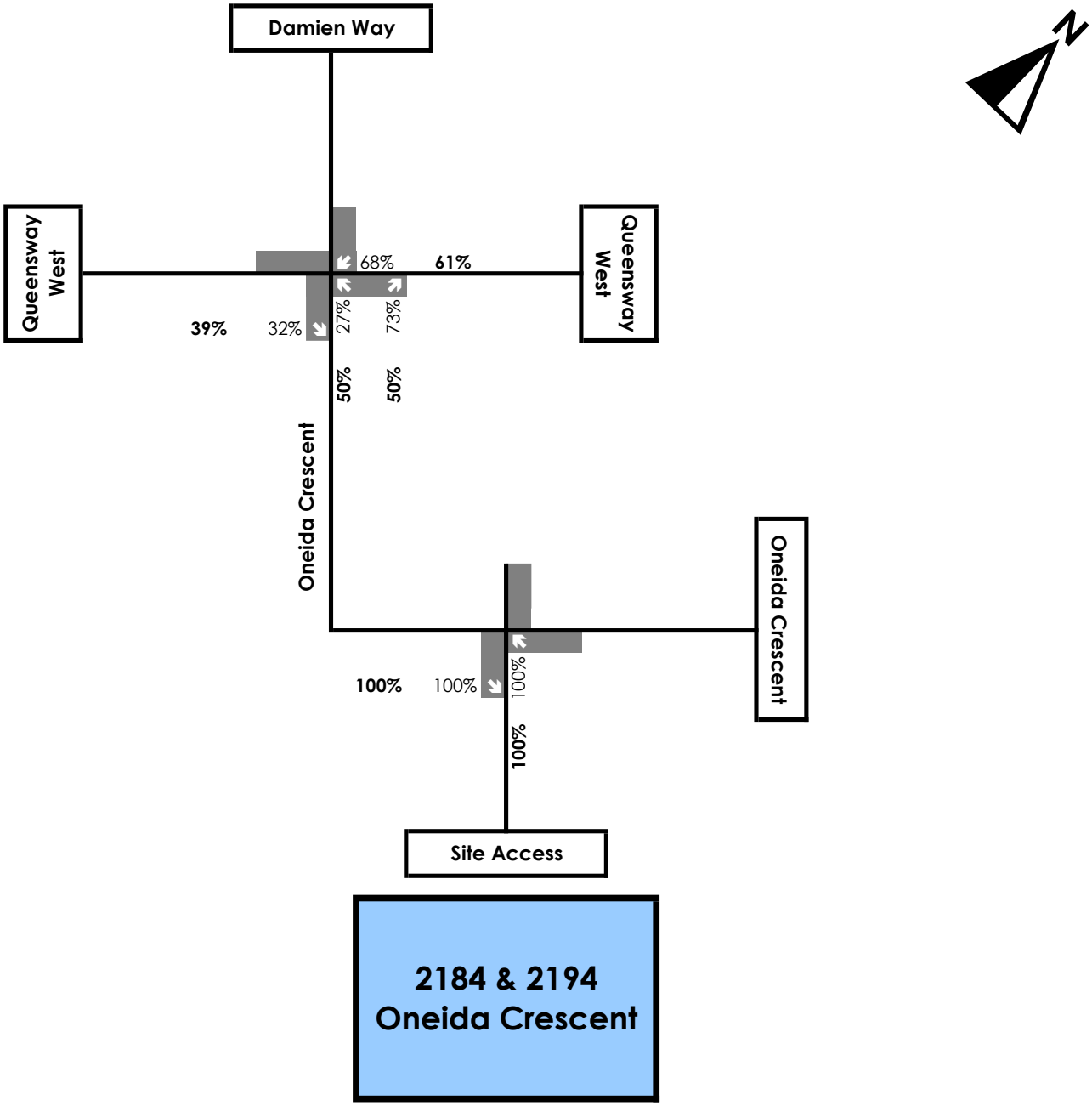
Table 8: Trip Distribution for Passenger Vehicles

Gateway Number	Location	AM (IN)	AM (OUT)	PM (IN)	PM (OUT)
1	**West via Queensway**	32.1%	27%	39%	50%
2	**East via Queensway**	67.9%	73%	61%	50%

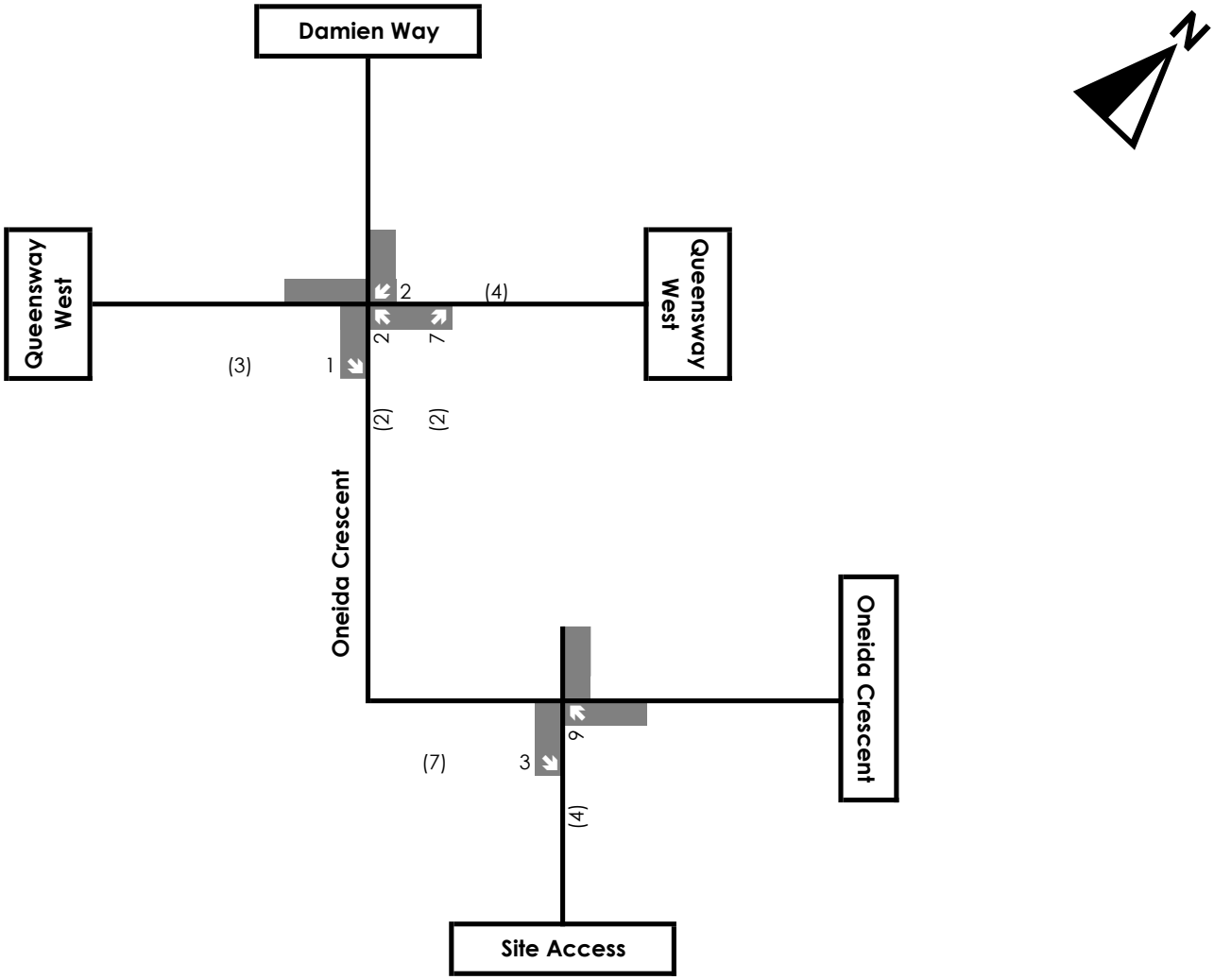
The trip distribution is illustrated in **Figure 7.**

4.3 Trip Assignment

As outlined in **Table 8,** the trip distribution expects the site generated trips to enter and exit the study road network through Queensway West. The site generated trips were assigned accordingly, as outlined in **Figure 8**.



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 7
xx A.M. Peak Hour Traffic Volumes **xx** P.M. Peak Hour Traffic Volumes	Trip Distribution	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 8
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	Trip Assignment	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal

5.0 Future Total Conditions

This section summarizes the future total conditions of the study road network. The future total traffic volumes for the horizon years consist of the following components:

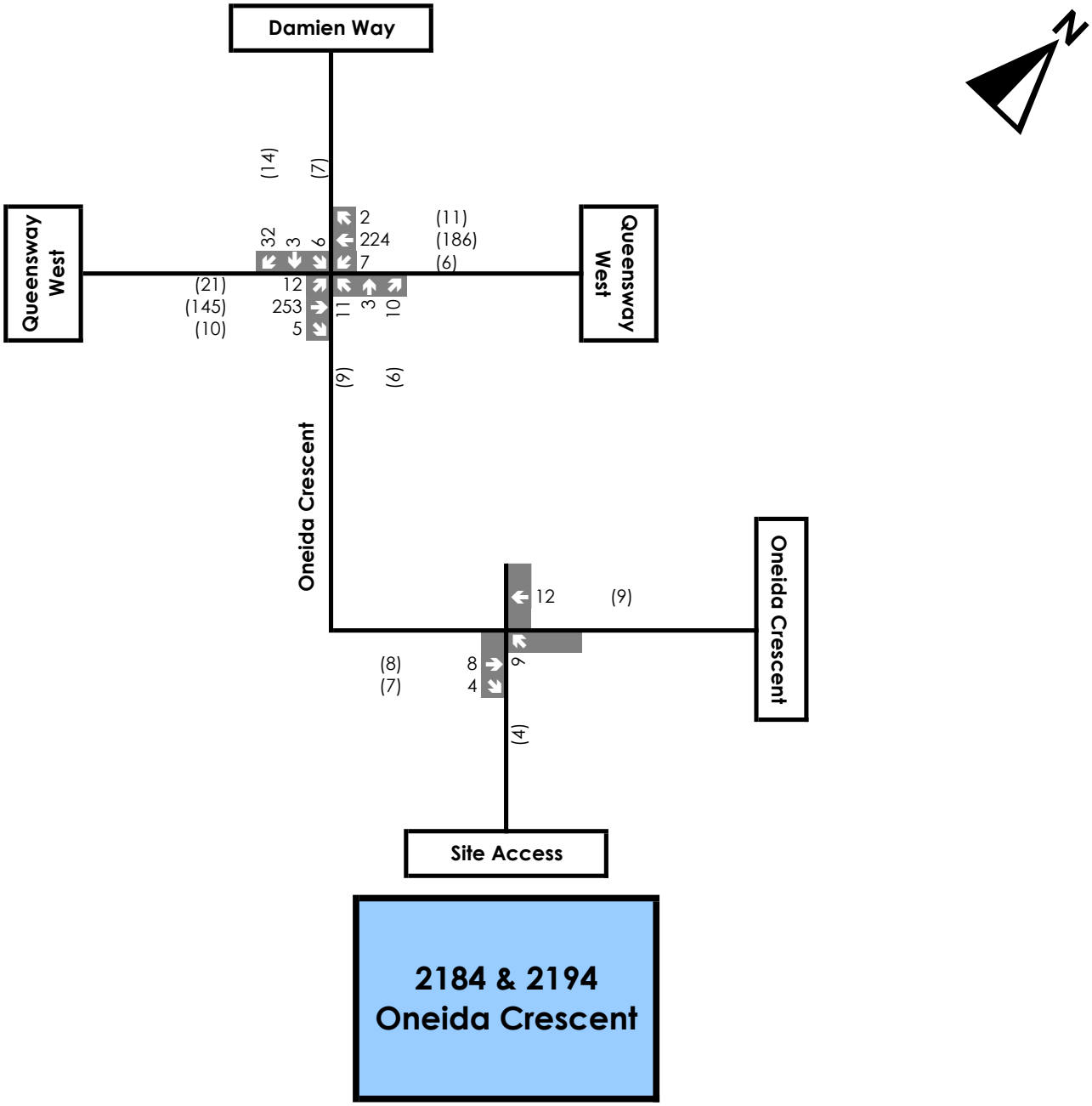
- Future background traffic volumes from the corresponding horizon year.
- The site generated traffic volumes of the proposed development.

The resulting future total volumes in the horizon years 2026 and 2031 are presented in **Figure 9** and **Figure 10**, respectively.

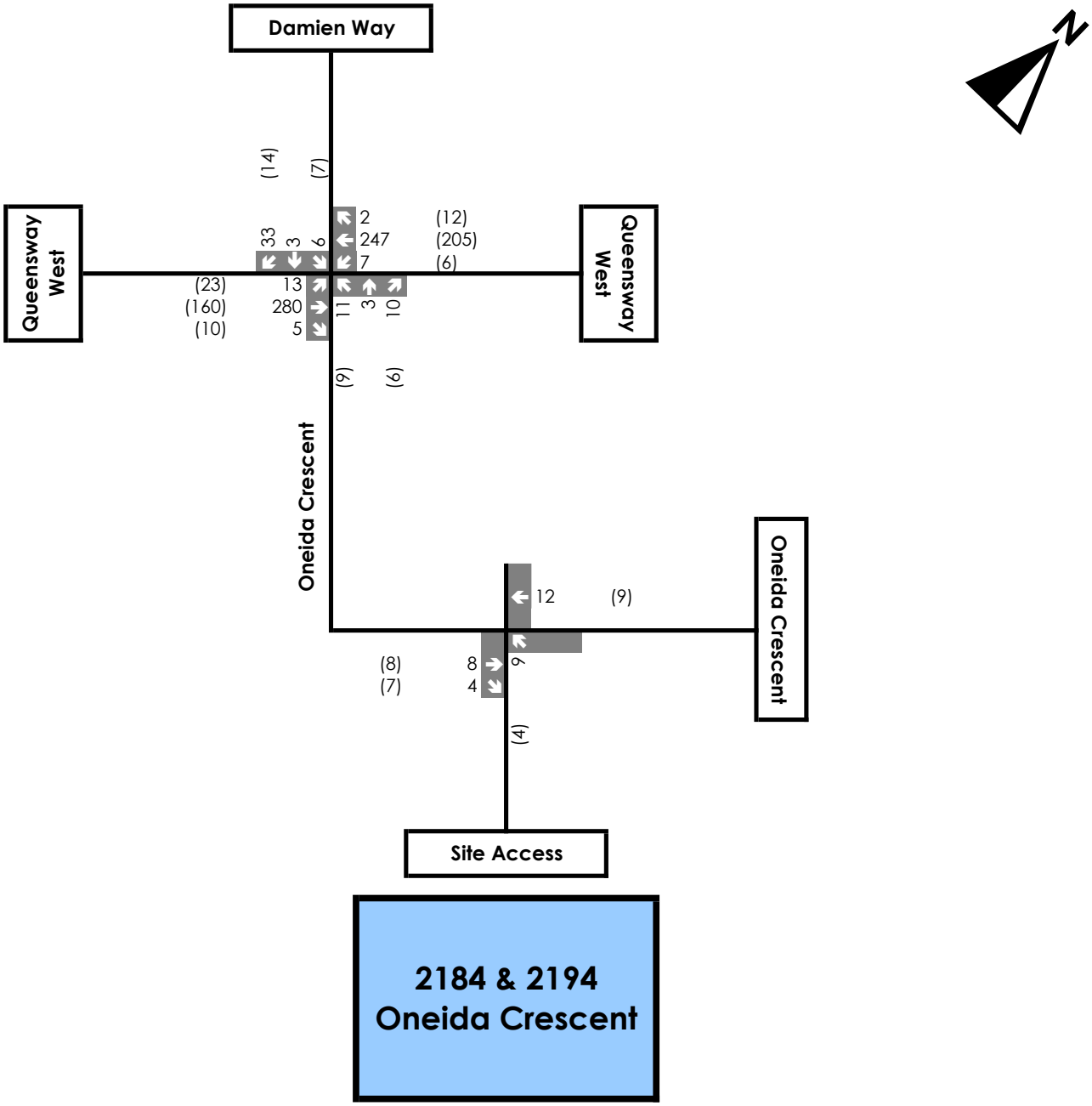
5.1 Intersection Operations

Table 9 and **Table 10** outline the study intersections 2026 and 2031 future total traffic operations, respectively. Synchro 12 was used to model the future total study road network.

Appendix D contains the detailed capacity analysis worksheets.



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 9
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2026 Future Total Traffic	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal



Legend	2184 & 2194 Oneida Crescent, City of Mississauga		Figure 10
xx A.M. Peak Hour Traffic Volumes (xx) P.M. Peak Hour Traffic Volumes	2031 Future Total Traffic	CROZIER CONSULTING ENGINEERS	Project No. 2958-7552 Date. 2026-04-02 Analyst: Ramy Kamal

Table 9: 2026 Future Total Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio[2]	
		AM	PM	AM	PM	AM	PM
Queensway West and Oneida Crescent/Damien Way (AWSC)	**Overall**	**B**	**A**	**10.6**	**8.4**	**0.45**	**0.25**
	EBLTR	B	A	11.1	8.4	0.45	0.22
	WBLTR	B	A	10.5	8.6	0.39	0.25
	NBLTR	A	A	8.7	7.8	0.05	0.02
	SBLTR	A	A	8.6	7.6	0.08	0.03
Oneida Crescent Site Access (TWSC)	**Overall[1]**	**A**	**A**	**8.7**	**8.6**	**0.01**	**0.00**
	EBTR	A	A	0.0	0.0	0.00	0.00
	WBLT	A	A	0.0	0.0	0.00	0.00
	NBLR	A	A	8.7	8.6	0.01	0.00

Note 1: The overall Level of Service of a two-way stop-controlled (TWSC) intersection is based on the delay associated with the critical minor road approach (HCM 2010). The overall Level of Service of an all-way stop-controlled (AWSC) intersection is based on the overall delay for the intersection (HCM 2010).

Note 2: The v/c ratio column for AWSC intersection displays degree utilization ratios, not v/c ratios. Degree utilization is the ratio between the projected traffic volumes and the number of opportunities for departures based on the average departure headway per the Highway Capacity Manual, Chapter 17.

Under 2026 future total conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 10.6 seconds during the AM peak hour, and 8.4 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.45 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2026 future total conditions.

Table 10: 2031 Future Total Traffic Operations

Intersection (Control)	Performance Metrics						
	Movement	LOS[1]		Delay (s)		v/c ratio[2]	
		AM	PM	AM	PM	AM	PM
Queensway West and Oneida Crescent/Damien Way (AWSC)	**Overall**	**B**	**A**	**11.3**	**8.6**	**0.50**	**0.28**
	EBLTR	B	A	12.0	8.6	0.50	0.24
	WBLTR	B	A	11.1	8.8	0.43	0.28
	NBLTR	A	A	8.9	7.9	0.05	0.02
	SBLTR	A	A	8.8	7.7	0.08	0.03
Oneida Crescent Site Access (TWSC)	**Overall[1]**	**A**	**A**	**8.7**	**8.6**	**0.01**	**0.00**
	EBTR	A	A	0.0	0.0	0.00	0.00
	WBLT	A	A	0.0	0.0	0.00	0.00
	NBLR	A	A	8.7	0.0	0.01	0.00

Note 1: The overall Level of Service of a two-way stop-controlled (TWSC) intersection is based on the delay associated with the critical minor road approach (HCM 2010). The overall Level of Service of an all-way stop-controlled (AWSC) intersection is based on the overall delay for the intersection (HCM 2010).

Note 2: The v/c ratio column for AWSC intersection displays degree utilization ratios, not v/c ratios. Degree utilization is the ratio between the projected traffic volumes and the number of opportunities for departures based on the average departure headway per the Highway Capacity Manual, Chapter 17.

Under 2031 future total conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 11.3 seconds during the AM peak hour, and 8.6 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.50 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2031 future total conditions.

The expected intersection operations in the future total scenarios are similar to those in the future background scenarios in their respective horizon years. This indicates that the study road network is expected to operate efficiently while accommodating the additional site generated volumes.

6.0 Site Access Safety Review

The development proposal includes a site access at Oneida Crescent that will provide transportation servicing to and from the site. This section evaluates the suitability of the site accesses from a transportation safety perspective and recommends mitigation measures, if required. The safety review of the accesses includes intersection sight distance analysis, intersection spacing, access spacing, and clear throat length.

6.1 Intersection Sight Distance

The available sightlines at the Oneida Crescent site access were measured and compared to the standard set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Sight distances were measured from the site access using the following assumptions:

- A standard drive eye height of 1.08 meters for a passenger car, and
- A 4.4-5.4 meter setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

Intersection sight distance is calculated using equation 9.9.1 from the GDGCR as outlined below:

$$ISD = 0.278 * V_{major} * t_g$$

Where:

ISD = Intersection Sight Distance
V_{major} = design speed of roadway (km/h)
t_g = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of a roadway in a suburban environment is typically 10 km/h greater than the speed limit. The assumed speed limit on Oneida Crescent 40 km/h, therefore, a design speed of 50 km/h was assumed for the sight distance analysis.

Table 11 outlines the sight distance analysis for the Oneida Crescent site access.

Table 11: Intersection Sight Distance Assessment

Parameter	Oneida Site Access
Access Type	Full Moves
Intersection Control	Case B: Stop Control on Minor Road
Speed Limit	40 km/h (Assumed)
Assumed Design Speed	50 km/h
Base Time Gap	Left Turn: 7.5 seconds Right Turn: 6.5 seconds
Grade of Roadway	Less than 3%
Additional Time Gap	Left Turn: 0.0 seconds Right Turn: 0.0 seconds
Horizontal Alignment of Roadway	Curved
Intersection Sight Distance Required (TAC GDGCR Eqn. 9.9.1)	Left Turn: 105 m Right Turn: 95 m
Intersection Sight Distance Available	Left Turn: 85 m Right Turn: 80 m

Note 1: To calculate Time Gap, base time gap is required. This default parameter is based on particular turning cases (such as Case B1 and Case B2/B3) and particular design vehicles. Roadways with more than one lane per direction require additions of 0.5s and 0.7s per addition lane for passenger car and truck design vehicles, respectively. For minor street approach upgrades that exceed 3%, additions of 0.2s and 0.1s for Case B1 and Case B2/B3, respectively, are required per percent grade. Refer to Section 9.9 of TAC-GDGCR for additional details.

Note 2: The sight distance looking north is slightly covered by the opposing residential bushes, however the cars coming from the north will still be visible from the site access.

As typically seen in suburban environments, egressing vehicles are expected to conduct a two-stage egress maneuver. From this perspective, egressing vehicles can observe pedestrians and cyclists without expected sight distance issues while stopped at 4.4 m to 5.4 m from the edge of roadway. Once moved closer to the edge of roadway, drivers are expected to have a clear visual of the roadway.

Although Oneida Crescent is curved in proximity to the subject property, adequate sight distance is expected to be achieved. Based on observed conditions, drivers egressing the site access can look north along Oneida Crescent further than 95 m from the site access. While there are existing trees along Oneida Crescent, the spacing sufficiently allows adequate sight lines along the roadway.

Vehicles making a left-turn to exit the site will be able to see 85m east of the site, to the 3-legged intersection of Oneida Crescent and Oneida Court. Since there will be no through traffic, vehicles approaching the site from the east will be travelling along a curve, where they are expected to travel at speeds below the assumed design speed of 50 km/h. With vehicles approaching from the east at lower speeds, the existing site distance is adequate.

Due to the 90-degree bend along Oneida Crescent near the site access, vehicles driving towards the site are not expected to reach the design speed. Vehicles are expected to slow down around the road elbow, and egressing vehicles have a clear visual of the road elbow. Accordingly, no sight distance issues are expected for vehicles exiting the site access.

The proposed development is supportable from a sight distance perspective as the minimum sight distance requirements are justified. All relevant TAC excerpts are included in **Appendix I.**

6.2 Intersection Spacing and Corner Clearance

Furthermore, access spacing along a local road was checked against TAC-GDGCR requirements. Per Figure 8.8.2 of the manual, a minimum separation distance of 15 m is suggested and met. **Table 12** outlines the intersection spacing assessment of the proposed site accesses.

Table 12: Intersection Spacing Assessment

Site Access	Nearest Intersecting Streets	Available Spacing	Required Separation Distance	Satisfied?
Oneida Crescent Site Access	Queensway West at Oneida Crescent/Damien Way	>250 m	15 m	Yes

6.3 Driveway Spacing

TAC-GDGCR was used to review driveway spacing for the proposed site access. As identified in Figure 8.9.2, a minimum of 1.0m spacing between driveways is required for residential uses. As shown on the Concept Plan, there is no adjacent access within 1.0m of the proposed site access, satisfying the spacing requirement. While the locations of the individual driveways along the condo road are not confirmed, based on the lot sizes, a minimum one (1) meter spacing between driveways is expected to be achieved.

6.4 Clear Throat Length

While no specific clear throat length standards are listed for a site access to detached dwelling units, the most comparable land use type referenced. Table 8.9.3 of the TAC-GDGCR provides clear throat length requirements for residential apartment buildings. For an apartment building with fewer than 100 units accessing a collector roadway, the guideline specifies a minimum clear throat length of 8.0m.

Given the small unit count, and that Oneida Crescent is a local road, an 8.0m clear throat length requirement can be considerate conservative. Based on the Concept Plan, the 8.0m requirement is met, and the throat length is therefore satisfactory.

6.5 Vehicle Circulation Review

Vehicle Turning Analysis was conducted using an MSU-Truck, WB-20 truck, aerial fire truck, front-load garbage truck and passenger cars.

The Vehicle Turning Diagrams demonstrate that the design vehicles can successfully enter and circulate the proposed development without conflicts. These vehicles can traverse throughout the subject site and can safely enter and exit all necessary proposed roadways.

Appendix K illustrate the passenger car, pumper fire truck, MSU-Truck, HSU-Truck, and Region of Peel Garbage Truck entering and circulating the site, respectively.

7.0 Parking Review

The following section reviews the adequacy of the parking supply of the proposed development. The parking review includes an assessment of the proposed parking supply of the development against the requirements outlined in the City of Mississauga Zoning By-Law No. 0225-2007 (ZBL) requirements.

Appendix J contains relevant City of Mississauga Zoning By-Law No. 0225-2007 excerpts.

7.1 Vehicle Parking Assessment

The proposed parking supply was assessed against the City of Mississauga ZBL. The vehicle parking requirements are per the ZBL are outlined in **Table 13**.

Table 13: Vehicle Parking Requirements

Land Use	Size	Vehicle Parking Requirements	Parking Spaces Required
Freehold Detached Dwelling	4 units	2.0 spaces per unit	8
Condo Detached Dwelling	4 units	2.0 spaces per unit	8
		0.25 visitor spaces per unit	1
Total Parking Required			**17**
Total Parking Supplied (Surplus/Deficit)			**16 (-1)**

As outlined in **Table 13**, the City of Mississauga ZBL requires the proposed development to provide a minimum parking supply of 16 regular vehicle parking spaces plus one additional visitor parking space, for a total of 17 parking spaces. As each unit is expected to have a driveway and garage, the Subject Site currently proposes 16 parking spaces, resulting in a deficiency of one (1) visitor parking space.

7.2 Bicycle Parking Assessment

According to the City of Mississauga ZBL, there are no minimum bicycle parking requirements for detached residential dwelling units. Homeowners will be able to park bicycles in their garage.

8.0 Transportation Demand Management

Transportation Demand Management (TDM) is the practice of influencing or maximizing the travel choices for users through infrastructure improvements, strategic services and programs, or public outreach, with the purpose of shifting travel demands away from single occupancy vehicle (SOV) trips to make more efficient use of the transportation system.

For the City of Mississauga, TDM initiatives play a key role in advancing a balanced multi-modal system and supporting the long-term sustainability objectives identified in the City's Climate Change Action Plan, which targets net-zero greenhouse gas emissions by 2050. As this development is anticipated to generate less than 50 new trips per day, a comprehensive TDM Plan was not required under the City's TDM Strategy and Implementation Plan (2018). Nonetheless, a number of site-specific measures are recommended to promote sustainable travel choices.

8.1 Assessment of TDM Environment

The existing and future non-auto transportation network described in **Sections 2.2** and **2.3** consists of a standard suburban pedestrian system supported by some local transit service with connections to regional routes. The site's TDM opportunities are typical for suburban Mississauga, with a continued reliance on personal vehicles, though some active transportation facilities support trips to nearby schools and commercial areas, and transit options are available to major trip generators such as Square One, Dixie Outlet Mall, and the Cooksville GO Station.

Using data from the Transportation Tomorrow Survey (TTS), the modal split for the area surrounding the proposed development was analyzed for 2016 and 2022. The analysis focused on home-based trips within the 2006 GTA Zone 3652 on a typical weekday. It was found that Auto-Driver trips decreased from 78% in 2016 to 66% in 2022. This change highlights the potential to implement and strengthen Transportation Demand Management (TDM) measures in the area, as a reduction in single-occupancy vehicle (SOV) trips has been observed. Table 14 presents the existing modal split in the study area. **Table 14** outlines the existing modal split in the study area. **Appendix H** contains TTS Data.

Table 14: Existing Modal Split

Transportation Mode	Modal Split (2016)	Modal Split (2022)
Auto Driver	78%	66%
Auto Passenger	14%	15%
Transit	6%	8%
Cycling	1%	1%
Walking	1%	10%
Total	**100%**	**100%**

8.2 Active Transportation Measures

To encourage walking and cycling as viable and attractive alternatives to automobile use, the following active transportation measure is available:

- **Bicycle Repair Facilities:** The inclusion of on-site bicycle repair stations equipped with basic hand tools, tire pumps, and gauges will support cycling use and reduce barriers to choosing cycling for daily trips. Such facilities provide convenience and help foster a cycling culture within the community.

8.3 Transit Measures

To encourage the use of public transit and support a shift away from auto dependency, the following measures are available:

- **Pre-Loaded PRESTO Cards:** Each new household may be provided with a pre-loaded PRESTO card upon occupancy. This incentive helps reduce the initial cost barrier to trying transit and promotes early adoption of transit as a travel choice.
- **Transit Marketing:** Residents should receive a welcome package with relevant transit information, including MiWay route maps and schedules, TTC and GO Transit connections, and promotional materials highlighting the convenience of transit options available from the Subject Site. Digital communication channels (e.g., development website, resident portal, or QR codes on-site) can supplement the printed materials, ensuring that residents remain informed about transit updates.
- **Real Time Transit Information:** It is recommended that residents be encouraged to download the Transit app. The Transit app provides users with trip planning and real-time transit information including passenger volume counts on buses. The app also allows buses to be tracked along their route and allows for live arrival countdowns that help minimize wait times and notify users if an approaching bus is delayed, and if it is not busy to very busy. This provides residents information on transit schedules and real time service delays, increasing the reliability of potential transit options.

These measures will encourage residents to consider public transit for regular travel needs, reducing reliance on SOV trips and supporting the City's climate and sustainability goals.

9.0 Conclusion

Existing Conditions

Transportation data was obtained and used to support the analysis in this study. Turning movement counts were collected on September 10, 2025, at the intersection of Queensway West and Oneida Crescent by Spectrum Traffic Inc.

Under existing conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 10.2 seconds during the AM peak hour, and 8.3 seconds during the PM peak hour, indicating minimal delays at all approaches. A maximum degree utilization ratio of 0.42 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under existing conditions.

Future Background Conditions

Through consultation with the City of Mississauga, one background development at 900 & 904 Mississauga Heights Drive was identified within the study area. This development consists of an 18-unit low-rise residential condominium, assumed to be completed prior to the first horizon year of 2026.

Under 2031 future background conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at a LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 11.1 seconds during the AM peak hour, and 8.6 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.49 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2031 future background conditions.

Site Generated Traffic

The trip generation of the proposed residential dwelling was forecasted using published data from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition. The applicable equations for Land Use Category (LUC) 210 "Single Family Detached Housing" were applied to the proposed residential dwelling units.

The trip generation analysis was undertaken using an earlier concept plan which had higher unit yields and thus resulted in a more conservative analysis. Based on this, the proposed development is expected to generate a total of 12 and 11 two-way trips during the weekday a.m. and p.m. peak hours, respectively. The trip distribution expects the site generated trips to enter and exit the study road network through Queensway West. The site generated trips were assigned accordingly.

Future Total Conditions

Under 2031 future total conditions, the all-way stop-controlled intersection of Queensway West at Oneida Crescent/Damien Way is operating efficiently, at an LOS "B" and "A" during the AM and PM peak hour, respectively. The intersection operates with an overall control delay of 11.3 seconds during the AM peak hour, and 8.6 seconds during the PM peak hour, indicating minimal delays at the intersection. A maximum degree utilization ratio of 0.50 was observed, demonstrating that the intersection has capacity to accommodate future traffic increases.

There are no queuing issues experienced at the intersection of Queensway West and Oneida Crescent/Damien Way under 2031 future total conditions.

The expected intersection operations in the future total scenarios are similar to those in the future background scenarios in their respective horizon years. This indicates that the study road network is expected to operate efficiently while accommodating the additional site generated volumes.

Site Access Safety Review

The proposed development is supportable from a sight distance perspective as the minimum sight distance requirements are justified.

Furthermore, the site access of the proposed development was compared against the Transportation Association of Canada Geometric Design Guide for Canadian Roads for intersection spacing, driveway spacing, corner clearance, and throat length. It was found that the site access is supportable from a safety perspective as the manual's minimum design requirements are met.

Parking Review

The City of Mississauga Zoning By-Law No. 0225-2007 requirements were reviewed to confirm the adequacy of the development's proposed parking supply. The Zoning By-Law requires the development to provide a total of 17 parking spaces, including one (1) visitor space. Based on the Concept Plan, the proposed development is expected to provide 16 parking spaces, resulting in a deficiency of one (1) visitor parking space.

Transportation Demand Management

The site's TDM opportunities are typical for suburban Mississauga, with a continued reliance on personal vehicles, though some active transportation facilities support trips to nearby schools and commercial areas, and transit options are available to major trip generators such as Square One, Dixie Outlet Mall, and the Cooksville GO Station.
The modal split for the area surrounding the proposed development was analyzed for 2016 and 2022. It was found that Auto-Driver trips decreased from 78% in 2016 to 66% in 2022. This change highlights the potential to implement and strengthen Transportation Demand Management measures in the area, as a reduction in single-occupancy vehicle (SOV) trips has been observed.

To encourage active transportation or public transit as viable and attractive alternative to automobile use, the following measures are available:

- Bicycle Repair Facilities
- Pre-Loaded PRESTO Cards
- Transit Marketing
- Real Time Transit Information

These measures should encourage residents to consider active transportation or public transit for regular travel needs, reducing reliance on SOV trips and supporting the City's climate and sustainability goals.

Conclusion

The analysis contained within this report was prepared using the most recent Concept Plan. Any minor change to the Concept Plan is not expected to materially affect the findings and recommendations contained within this report.

To conclude, the proposed development at 2184 & 2194 Oneida Crescent can be supported from a transportation engineering perspective.

Respectfully submitted by,

C.F. CROZIER & ASSOCIATES INC.

Ramy Kamal
Engineering Intern, Transportation

C.F. CROZIER & ASSOCIATES INC.

Ian Lindley, MASc., P.Eng
Project Engineer, Transportation

RK/AB

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APPENDIX A

Terms of Reference and Correspondence

Appendix B

APPROVED
By James Emerson at 10:27 am, Jul 25, 2025

Pre-Study Consultation Checklist

Description	Information	Section Reference
Development Information		
Development Description (land use, size, and number of phases of development)	• The subject lands cover an area of approximately 1.97 ha. Includes 9 new lots as part of the plan. Lots 1-4 will be future freehold lots as part of the Draft Plan of Subdivision. Lots 5-9 will be future POTLs as part of the Common Element Condominium (CEC). • The structures within 2184 Oneida Crescent are proposed to remain as existing and will be re-established as a POTL within the proposed CEC. The structures within 2194 Oneida Crescent are proposed to be demolished. • Proposed full moves site access off Oneida Crescent. On-street parking plan.	2.3.6
Transportation Impact Assessment		
Step 1 – Screening		
Type of Application (attach a drawing)	☐ Official Plan Amendment ☑ Zoning Amendment ☐ Site Plan Control Application ☑ Plan of Subdivision ☐ Other_____	2.3.5
Screening Criteria	☐ Trip Generation Trigger Satisfied ☐ Location Trigger Satisfied ☑ Operational/Safety Trigger Satisfied	2.2.1
Type of Study	☐ Transportation Impact Study ☑ Access Review ☐ No Additional Study Required	2.2.1
Step 2 – Scoping		
Study Area (intersections to be analyzed) Note: The Transportation Consultant is responsible to identify any further intersections impacted as the study progresses.	• Oneida Crescent and Queensway West •	2.3.8

Description	Information	Section Reference
Horizon Years	☑ 5 years from date of TIS ☐ Interim years_____ ☐ Other_____	2.3.9
Analysis Periods	☑ AM weekday peak hour of adjacent roadway ☑ PM weekday peak hour of adjacent roadway ☐ Saturday peak hour of adjacent roadway ☐ AM weekday peak hour of development ☐ PM weekday peak hour of development ☐ Saturday peak hour of development ☐ Other _____	2.3.10
Input Parameters and Assumptions (potential deviations)	• • • •	2.3.13
Existing Transportation Conditions	☐ City data sources ☑ New data collection_____ ☐ Other _____	2.3.14
Planned Network Improvements (with timing)	• Queensway West Traffic Calming: https://www.mississauga.ca/publication/queensway-west-traffic-calming-plan/ • •	2.3.16
Other Planned Developments (per City's Website)	• 900 Mississauga Heights Drive • 904 Mississauga Heights Drive • • • •	2.3.17
Identification of Mitigation Improvement Measures	☐ Neighbourhood Traffic Management Plan ☐ Other_____	2.3.23
Safety Analysis (any special issues)	• • • •	2.3.25
Site Access and Circulation (design vehicles)	☑ Passenger Car (P) ☐ Light Single Unit Truck (LSU) ☐ Medium Single Unit Truck (MSU) ☑ Heavy Single Unit Truck (HSU) ☒ Pumper Fire Truck ☐ WB-20 Tractor Semi-Trailer Truck ☒ Other__eel Waste Collection__ehicle_____	2.3.26
Impacts During Construction (any special issues)	• • • •	2.3.27

Description	Information	Section Reference
Step 3 – Forecasting		
Growth Rate	☑ Obtained from City ☐ Historical traffic counts ☐ Travel demand forecasts ☐ Proposed Growth Rate: _____	2.3.15
Site Trip Generation	☑ ITE Trip Generation Manual ☐ "First Principles" ☐ Observed rates for similar developments in area ☐ Other _____	2.3.19
Trip Reductions	☐ Internal capture reductions for mixed-use developments ☐ Pass-by reductions ☐ Other _____	2.3.19
Trip Distribution	☑ Local traffic patterns ☑ TTS ☐ Travel demand model ☐ Population and employment distribution ☐ Market analysis of catchment area ☐ Other _____	2.3.20
Trip Assignment	☑ Local traffic patterns ☑ Shortest distance ☑ Site layout, access design and logical routing ☑ Existing turning movements ☐ Other _____	2.3.21
Transportation Demand Management Plan		
Format	☑ Within a TIA Report ☐ Standalone	3.2.1
Type of Transportation Demand Management Plan	☐ TDM Statement ☑ TDM Scheme	3.2.2
Pedestrian Circulation Plan		
Format	☑ Within a TIA Report ☐ Standalone	4.2.1
Additional Comments		
- Community Impacts: Any transportation related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in the report. - Access Review: Ensure that the proposed site accesses conform to all TAC standards (e.g. corner clearances, clear throat lengths, veh & ped sight line distances for ingress/egress, proximity/ alignment to other driveways/roads, etc.); Provide confirmation and technical justification of whether the site access locations and designs are safe for all roadway users and why. - Recommendations: Detailed Recommendations regarding on-site/off-site roadway improvements, site access, site circulation, and TDM measures shall be made.		

Andrew Bader

From: Roy, Shuvangkor Shusmoy <shuvangkorshusmoy.roy@peelregion.ca>
Sent: Tuesday, July 29, 2025 10:42 AM
To: Ramy Kamal
Cc: Ian Lindley; ZZG-Transportation Planning Data
Subject: RE: Growth Rate Request - 2184/2194 Oneida Crescent

Hello Ramy,

Thank you for reaching out. Please note that Queensway at Oneida Crescent and Oneida Crescent are not regional roads. Feel free to contact the City of Mississauga for traffic information on these roads. For your reference, only the section of Queensway from Mavis Road to The West Mall / Etobicoke border falls under the jurisdiction of the Region of Peel. You can refer to the Regional Road map here: https://peelregion.ca/sites/default/files/2024-06/regional-roads-map.pdf.

Best,

Peel Region

Shuvangkor Shusmoy Roy
Transportation Data & Modelling Advisor,
Transportation Policy & Modelling
Transportation Division
Public Works

shuvangkorshusmoy.roy@peelregion.ca
905-791-7800 e. 3821

From: Ramy Kamal <rkamal@cfcrozier.ca>
Sent: July 28, 2025 1:51 PM
To: ZZG-Transportation Planning Data <transportationplanningdata@peelregion.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>
Subject: Growth Rate Request - 2184/2194 Oneida Crescent

Hi,

I am reaching out to confirm growth rates and/or obtain any relevant traffic data for the project located at 2184/2194 Oneida Crescent, in the City of Mississauga, Region of Peel.

The study road network is Queensway West and Oneida Crescent.

Thanks,

Ramy Kamal
Engineering Intern, Transportation
Office: 289.204.8358
Collingwood | Milton | Toronto | Bradford | Guelph

Learn how we've strengthened our position as a total build partner.

CROZIER

From: Barnes, Catherine <catherine.barnes@peelregion.ca>
Sent: July 28, 2025 1:37 PM
To: Ramy Kamal <rkamal@cfcrozier.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>; Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>
Subject: RE: 2184/2194 Oneida Crescent, City of Mississauga - Terms of Reference

Hi Ramy,

I am not the correct person for growth rates. Please contact Transportation Planning transportationplanningdata@peelregion.ca to confirm growth rates along the subject Regional road(s). if the site fronts the Queensway, please send the terms of reference to Hashim Hamdani for review, cc'd on this email.

Thank you,

Catherine Barnes - **Vacation Alert: August 13th – Aug 30th 2025**
Region of Peel
Specialist, Transportation Development
Transportation Division, Public Works.
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON , L6T 4B9
Please contact me via email as I am out of the office working remotely.

Region of Peel
working with you

Please consider the environment before printing this email.

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

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

From: Ramy Kamal <rkamal@cfcrozier.ca>
Sent: July 28, 2025 1:27 PM
To: Barnes, Catherine <catherine.barnes@peelregion.ca>
Cc: Ian Lindley <ilindley@cfcrozier.ca>
Subject: FW: 2184/2194 Oneida Crescent, City of Mississauga - Terms of Reference

Hi Catherine,

Please let us know if you are the correct person to contact, if not we would appreciate your help in providing this to the correct person.

I am reaching out to confirm growth rates and/or obtain any relevant traffic data for the project located at 2184/2194 Oneida Crescent, in the City of Mississauga, Region of Peel.

The study road network is Queensway West and Oneida Crescent.

Please refer to the city correspondence below for more details.

Thanks,

Ramy Kamal
Engineering Intern, Transportation
Office: 289.204.8358
Collingwood | Milton | Toronto | Bradford | Guelph

APPENDIX B

Transportation Data

Spectrum

Turning Movement Count
Location Name: QUEENSWAY W & ONEIDA CRES
Date: Tue, Sep 23, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (1 . QUEENSWAY W & ONEIDA CRES)

Start Time	N Approach DAMIEN WAY						E Approach QUEENSWAY W						S Approach ONEIDA CRES						W Approach QUEENSWAY W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2025-09-23 06:00:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	0	7	7	
2025-09-23 06:15:00	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	2	0	0	13	1	0	0	14	19	
2025-09-23 06:30:00	1	0	2	0	1	3	0	7	1	0	0	8	2	0	0	0	2	2	0	17	0	0	0	17	30	
2025-09-23 06:45:00	2	0	0	0	2	2	0	9	0	0	0	9	0	0	0	0	3	0	2	23	0	0	0	25	36	92
2025-09-23 07:00:00	1	0	1	0	0	2	0	10	0	0	1	10	1	0	1	0	2	2	0	17	0	0	0	17	31	116
2025-09-23 07:15:00	1	0	2	0	0	3	1	11	0	0	0	12	1	0	1	0	4	2	1	17	1	0	0	19	36	133
2025-09-23 07:30:00	3	0	0	0	1	3	2	24	1	0	0	27	0	0	1	0	2	1	1	30	0	0	0	31	62	165
2025-09-23 07:45:00	4	0	2	0	3	6	2	45	0	0	0	47	1	0	0	0	6	1	2	37	2	0	3	41	95	224
2025-09-23 08:00:00	16	0	2	0	1	18	0	83	1	0	1	84	1	0	0	0	5	1	1	66	4	0	0	71	174	367
2025-09-23 08:15:00	8	0	1	0	1	9	0	67	0	0	0	67	0	0	0	0	12	0	0	93	4	0	0	97	173	504
2025-09-23 08:30:00	3	0	2	0	3	5	0	29	1	0	1	30	1	1	0	0	9	2	0	44	2	0	0	46	83	525
2025-09-23 08:45:00	4	2	0	0	1	6	1	39	1	0	1	41	0	1	7	0	6	8	1	43	1	0	0	45	100	530
2025-09-23 09:00:00	6	0	3	0	1	9	2	29	0	0	2	31	0	0	1	0	2	1	1	29	3	0	0	33	74	430
2025-09-23 09:15:00	2	0	1	0	3	3	2	11	1	0	2	14	1	0	1	0	3	2	0	39	4	0	2	43	62	319
2025-09-23 09:30:00	3	1	0	0	1	4	0	28	0	0	0	28	0	0	1	0	10	1	1	31	1	0	0	33	66	302
2025-09-23 09:45:00	3	0	2	0	3	5	0	31	3	0	1	34	3	1	2	0	3	6	2	30	2	0	0	34	79	281
BREAK																										
2025-09-23 15:00:00	4	1	1	0	0	6	1	43	0	0	2	44	1	0	2	0	3	3	1	26	1	0	0	28	81	
2025-09-23 15:15:00	7	0	1	0	1	8	2	49	0	0	2	51	0	0	1	0	2	1	1	46	4	0	0	51	111	
2025-09-23 15:30:00	6	0	0	0	0	6	2	36	0	0	0	38	0	0	1	0	8	1	1	51	5	0	1	57	102	
2025-09-23 15:45:00	4	0	0	0	1	4	1	40	0	0	2	41	0	0	1	0	10	1	2	38	1	0	0	41	87	381
2025-09-23 16:00:00	3	1	0	0	0	4	2	43	0	0	0	45	1	0	1	0	5	2	1	23	4	0	0	28	79	379
2025-09-23 16:15:00	6	0	0	0	0	6	2	54	0	0	3	56	0	0	1	0	8	1	0	37	2	0	0	39	102	370
2025-09-23 16:30:00	1	0	2	0	4	3	4	38	0	0	1	42	2	0	0	0	3	2	4	35	8	0	0	47	94	362
2025-09-23 16:45:00	4	0	2	0	1	6	1	44	1	0	0	46	0	0	3	0	4	3	0	33	7	0	0	40	95	370
2025-09-23 17:00:00	2	0	2	0	0	4	3	44	0	0	1	47	1	0	1	0	1	2	2	35	3	0	0	40	93	384
2025-09-23 17:15:00	4	1	2	0	0	7	2	38	0	0	1	40	1	0	3	0	7	4	1	26	3	0	0	30	81	363
2025-09-23 17:30:00	0	1	2	0	1	3	0	46	2	0	0	48	1	0	0	0	11	1	4	21	5	0	4	30	82	351
2025-09-23 17:45:00	2	1	0	0	1	3	2	32	1	0	2	35	0	1	2	0	7	3	3	30	2	0	0	35	76	332
2025-09-23 18:00:00	1	2	0	0	2	3	2	36	5	0	1	43	0	0	0	0	12	0	2	23	2	0	1	27	73	312
2025-09-23 18:15:00	2	1	0	0	2	3	5	28	0	0	1	33	3	0	2	0	9	5	4	35	4	0	0	43	84	315
2025-09-23 18:30:00	3	0	1	0	2	4	1	21	0	0	0	22	0	0	0	0	6	0	0	30	3	0	2	33	59	292
2025-09-23 18:45:00	4	1	2	0	2	7	3	37	0	0	4	40	1	0	0	0	23	1	1	21	4	0	5	26	74	290
Grand Total	110	12	33	0	39	155	43	1057	18	0	29	1118	22	4	33	0	190	59	40	1045	83	0	18	1168	**2500**	-
Approach%	71%	7.7%	21.3%	0%		-	3.8%	94.5%	1.6%	0%		-	37.3%	6.8%	55.9%	0%		-	3.4%	89.5%	7.1%	0%		-	-	-
Totals %	4.4%	0.5%	1.3%	0%		6.2%	1.7%	42.3%	0.7%	0%		44.7%	0.9%	0.2%	1.3%	0%		2.4%	1.6%	41.8%	3.3%	0%		46.7%	-	-
Heavy	8	0	2	0		-	2	17	0	0		-	0	2	0	0		-	0	16	3	0		-	-	-
Heavy %	7.3%	0%	6.1%	0%		-	4.7%	1.6%	0%	0%		-	0%	50%	0%	0%		-	0%	1.5%	3.6%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (19 °C)

Start Time	N Approach DAMIEN WAY						E Approach QUEENSWAY W						S Approach ONEIDA CRES						W Approach QUEENSWAY W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-23 08:00:00	16	0	2	0	1	18	0	83	1	0	1	84	1	0	0	0	5	1	1	66	4	0	0	71	174
2025-09-23 08:15:00	8	0	1	0	1	9	0	67	0	0	0	67	0	0	0	0	12	0	0	93	4	0	0	97	173
2025-09-23 08:30:00	3	0	2	0	3	5	0	29	1	0	1	30	1	1	0	0	9	2	0	44	2	0	0	46	83
2025-09-23 08:45:00	4	2	0	0	1	6	1	39	1	0	1	41	0	1	7	0	6	8	1	43	1	0	0	45	100
Grand Total	31	2	5	0	6	38	1	218	3	0	3	222	2	2	7	0	32	11	2	246	11	0	0	259	**530**
Approach%	81.6%	5.3%	13.2%	0%		-	0.5%	98.2%	1.4%	0%		-	18.2%	18.2%	63.6%	0%		-	0.8%	95%	4.2%	0%		-	**-**
Totals %	5.8%	0.4%	0.9%	0%		7.2%	0.2%	41.1%	0.6%	0%		41.9%	0.4%	0.4%	1.3%	0%		2.1%	0.4%	46.4%	2.1%	0%		48.9%	**-**
PHF	0.48	0.25	0.63	0		0.53	0.25	0.66	0.75	0		0.66	0.5	0.5	0.25	0		0.34	0.5	0.66	0.69	0		0.67	0.76
Heavy	3	0	0	0		3	0	5	0	0		5	0	1	0	0		1	0	3	1	0		4	13
Heavy %	9.7%	0%	0%	0%		7.9%	0%	2.3%	0%	0%		2.3%	0%	50%	0%	0%		9.1%	0%	1.2%	9.1%	0%		1.5%	2.5%
Lights	28	0	5	0		33	1	213	3	0		217	2	1	7	0		10	2	243	10	0		255	515
Lights %	90.3%	0%	100%	0%		86.8%	100%	97.7%	100%	0%		97.7%	100%	50%	100%	0%		90.9%	100%	98.8%	90.9%	0%		98.5%	97.2%
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Buses	3	0	0	0		3	0	5	0	0		5	0	1	0	0		1	0	3	1	0		4	13
Buses %	9.7%	0%	0%	0%		7.9%	0%	2.3%	0%	0%		2.3%	0%	50%	0%	0%		9.1%	0%	1.2%	9.1%	0%		1.5%	2.5%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	2
Bicycles on Road %	0%	100%	0%	0%		5.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.4%
Pedestrians	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	20	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	14.6%		-	-	-	-	7.3%		-	-	-	-	48.8%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	29.3%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (25 °C)

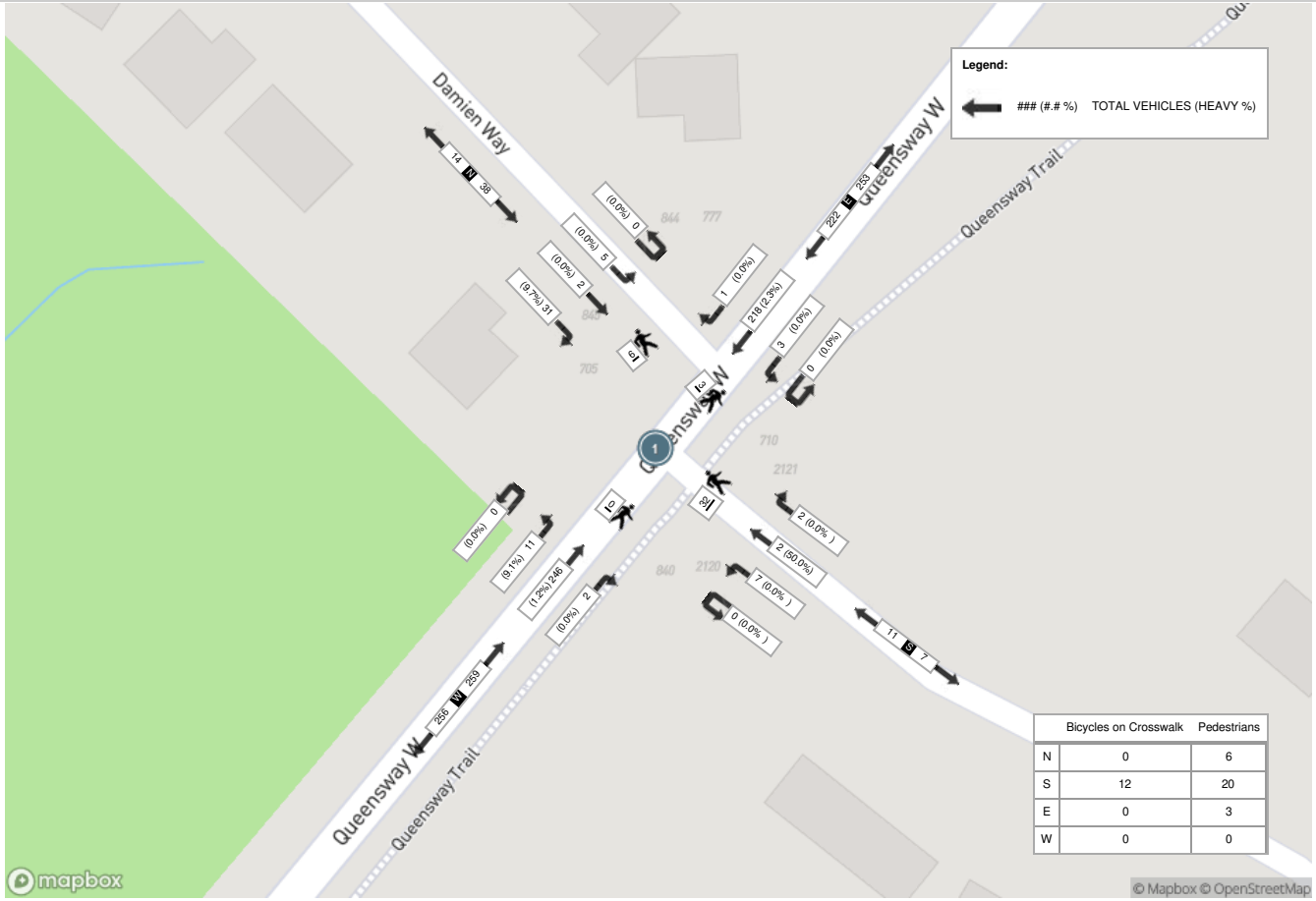
Start Time	N Approach DAMIEN WAY						E Approach QUEENSWAY W						S Approach ONEIDA CRES						W Approach QUEENSWAY W						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2025-09-23 16:15:00	6	0	0	0	0	6	2	54	0	0	3	56	0	0	1	0	8	1	0	37	2	0	0	39	102
2025-09-23 16:30:00	1	0	2	0	4	3	4	38	0	0	1	42	2	0	0	0	3	2	4	35	8	0	0	47	94
2025-09-23 16:45:00	4	0	2	0	1	6	1	44	1	0	0	46	0	0	3	0	4	3	0	33	7	0	0	40	95
2025-09-23 17:00:00	2	0	2	0	0	4	3	44	0	0	1	47	1	0	1	0	1	2	2	35	3	0	0	40	93
Grand Total	13	0	6	0	5	19	10	180	1	0	5	191	3	0	5	0	16	8	6	140	20	0	0	166	**384**
Approach%	68.4%	0%	31.6%	0%		-	5.2%	94.2%	0.5%	0%		-	37.5%	0%	62.5%	0%		-	3.6%	84.3%	12%	0%		-	**-**
Totals %	3.4%	0%	1.6%	0%		4.9%	2.6%	46.9%	0.3%	0%		49.7%	0.8%	0%	1.3%	0%		2.1%	1.6%	36.5%	5.2%	0%		43.2%	**-**
PHF	0.54	0	0.75	0		0.79	0.63	0.83	0.25	0		0.85	0.38	0	0.42	0		0.67	0.38	0.95	0.63	0		0.88	0.94
Heavy	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	5
Heavy %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.6%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.2%	1.3%
Lights	13	0	6	0		19	10	177	1	0		188	3	0	5	0		8	3	138	20	0		161	376
Lights %	100%	0%	100%	0%		100%	100%	98.3%	100%	0%		98.4%	100%	0%	100%	0%		100%	50%	98.6%	100%	0%		97%	97.9%
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Buses	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	5
Buses %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.6%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.2%	1.3%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	3	0	0	0		3	3
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	50%	0%	0%	0%		1.8%	0.8%
Pedestrians	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	11.5%		-	-	-	-	15.4%		-	-	-	-	7.7%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	14	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	7.7%		-	-	-	-	3.8%		-	-	-	-	53.8%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: QUEENSWAY W & ONEIDA CRES
Date: Tue, Sep 23, 2025 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

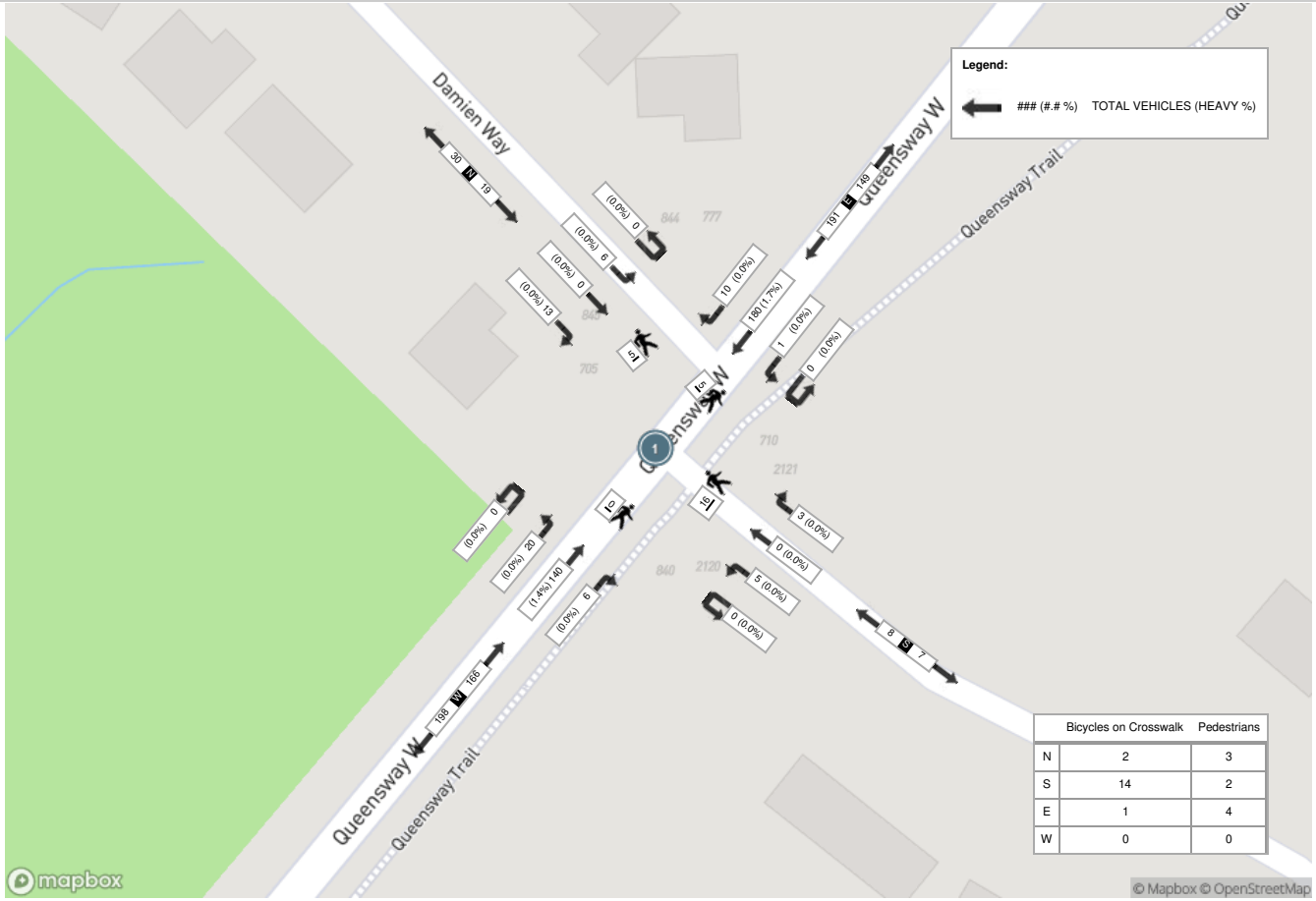
Peak Hour: 08:00 AM - 09:00 AM **Weather: Broken Clouds (19 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	6
S	12	20
E	0	3
W	0	0

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:15 PM - 05:15 PM **Weather: Broken Clouds (25 °C)**



	Bicycles on Crosswalk	Pedestrians
N	2	3
S	14	2
E	1	4
W	0	0

APPENDIX C

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Transit

Level of Service	Access to Transit Stops	Transit Headways
A	90% within ≤ 200 m	≤ 5 minutes
B	90% within ≤ 500 m and 70% within ≤ 200 m	> 5-10 minutes
C	90% within ≤ 500 m and 50% within ≤ 200 m	> 10-15 minutes
D	100% within ≤ 600 m	> 15-20 minutes
E	100% within ≤ 800 m	> 20-30 minutes
F	100% > 800 m	> 30 minutes

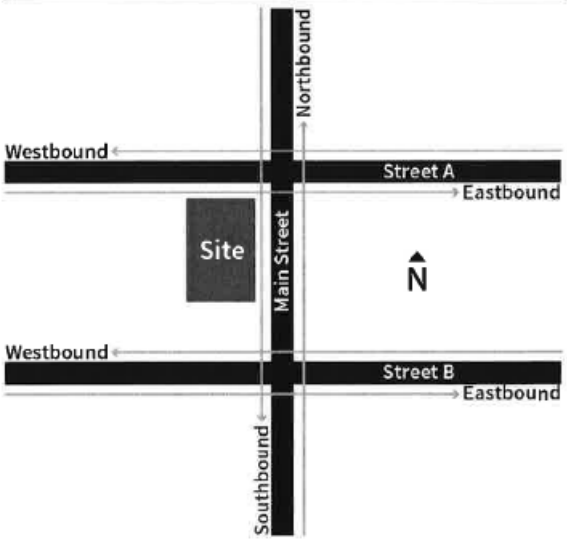
Adapted from Transportation Mobility Plan Guidelines, November 2016, York Region

Pedestrian

Level of Service	Segment	Intersection
A	≥ 2.0 m sidewalk with minimum 3.5 m buffer including planting and edge zone; or ≥ 3.0 m multi-use path	▪ ≥2.0 m sidewalk with minimum 3.5 m buffer including planting and edge zone; or ≥3.0 m multi-use path ▪ Pedestrian signal head with sufficient pedestrian clearance time ▪ Clearly delineated cross-walk
B	≥1.5 m sidewalk with minimum 1.0 m buffer including edge zone; or < 3.0 m multi-use path	▪ ≥1.5 m sidewalk with minimum 1.0 m buffer including edge zone; or < 3.0 m multi-use path ▪ Pedestrian signal head with sufficient pedestrian clearance time ▪ Clearly delineated cross-walk
C	≥1.5 m curb-faced sidewalk (no buffer)	▪ ≥1.5 m curb-faced sidewalk (no buffer) ▪ Pedestrian signal head sufficient pedestrian clearance time ▪ No clearly delineated cross-walk
D	< 1.5 m sidewalk	▪ < 1.5 m sidewalk ▪ Pedestrian signal head sufficient pedestrian clearance time ▪ No clearly delineated cross-walk
E	Paved shoulder or no sidewalk provision	▪ Paved shoulder or no sidewalk provision ▪ No pedestrian signal head ▪ No clearly delineated cross-walk
F	No sidewalk provision	▪ No sidewalk provision ▪ No pedestrian signal head ▪ No clearly delineated cross-walk

Adapted from Transportation Mobility Plan Guidelines, November 2016, York Region

Figure 4 - Example of Level of Service Assessment



Adapted from Transportation Mobility Plan Guidelines, November 2016, York Region

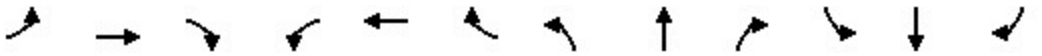
Bicycle Level

Level of Service	Segment	Intersection
A	Separated cycling facilities (e.g. cycle tracks, multi-use path)	▪ Separated cycling facilities ▪ Bicycle box or clearly delineated bicycle treatment or bicycle signal head
B	≥1.8 m dedicated cycling facilities (e.g. bicycle lanes with and without buffer)	▪ 1.8 m dedicated cycling facilities (e.g. bicycle lanes with and without buffer), ▪ Bicycle box, clearly delineated bicycle treatment or bicycle signal head
C	< 1.8 m dedicated cycling facilities with no buffer	▪ < 1.8 m dedicated cycling facilities with no buffer ▪ Bicycle box, clearly delineated bicycle treatment or bicycle signal head
D	≤1.5 m bicycle lane with no buffer	▪ ≤1.5 m bicycle lane and no buffer ▪ Bicycle treatment
E	Shared facilities (e.g. signed routes, sharrows or paved shoulder with minimum 1.2 m in constrained area)	▪ Shared facilities (e.g. signed routes, sharrows or paved shoulder with minimum 1.2 m in constrained area) ▪ No clearly delineated bicycle treatment
F	No bicycle provision	▪ No bicycle provision

Adapted from Transportation Mobility Plan Guidelines, November 2016, York Region

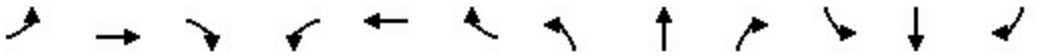
APPENDIX D

Detailed Capacity Analysis Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	246	2	3	218	1	7	2	2	5	2	31
Future Volume (vph)	11	246	2	3	218	1	7	2	2	5	2	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999						0.973			0.891	
Flt Protected		0.998			0.999			0.971			0.993	
Satd. Flow (prot)	0	1872	0	0	1864	0	0	1650	0	0	1573	0
Flt Permitted		0.998			0.999			0.971			0.993	
Satd. Flow (perm)	0	1872	0	0	1864	0	0	1650	0	0	1573	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	6		32	32		6			3	3		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	10%	2%	0%	0%	3%	0%	0%	50%	0%	0%	0%	10%
Adj. Flow (vph)	14	324	3	4	287	1	9	3	3	7	3	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	0	0	292	0	0	15	0	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	246	2	3	218	1	7	2	2	5	2	31
Future Volume (vph)	11	246	2	3	218	1	7	2	2	5	2	31
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	14	324	3	4	287	1	9	3	3	7	3	41

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	341	292	15	51
Volume Left (vph)	14	4	9	7
Volume Right (vph)	3	1	3	41
Hadj (s)	0.04	0.05	0.17	-0.32
Departure Headway (s)	4.4	4.5	5.6	5.0
Degree Utilization, x	0.42	0.36	0.02	0.07
Capacity (veh/h)	793	775	557	630
Control Delay (s/veh)	10.6	10.0	8.7	8.4
Approach Delay (s/veh)	10.6	10.0	8.7	8.4
Approach LOS	B	B	A	A

Intersection Summary				
Delay	10.2			
Level of Service	B			
Intersection Capacity Utilization	30.5%	ICU Level of Service	A	
Analysis Period (min)	15			

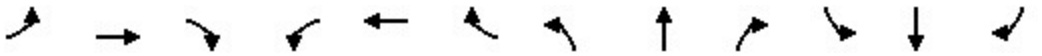
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	7	0	0	11	0	0
Future Volume (vph)	7	0	0	11	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	0	0	12	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	12	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	0	11	0	0
Future Volume (Veh/h)	7	0	0	11	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	12	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			8		20	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		20	8
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1612		997	1074

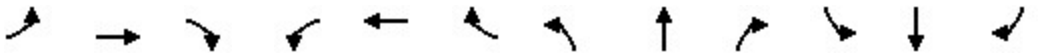
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	12	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1612	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	140	6	1	180	10	5	0	3	6	0	13
Future Volume (vph)	20	140	6	1	180	10	5	0	3	6	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.993			0.949			0.905	
Flt Protected		0.994						0.970			0.985	
Satd. Flow (prot)	0	1868	0	0	1872	0	0	1768	0	0	1713	0
Flt Permitted		0.994						0.970			0.985	
Satd. Flow (perm)	0	1868	0	0	1872	0	0	1768	0	0	1713	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	5		16	16		5			5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	21	149	6	1	191	11	5	0	3	6	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	0	0	203	0	0	8	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	140	6	1	180	10	5	0	3	6	0	13
Future Volume (vph)	20	140	6	1	180	10	5	0	3	6	0	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	21	149	6	1	191	11	5	0	3	6	0	14

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	176	203	8	20
Volume Left (vph)	21	1	5	6
Volume Right (vph)	6	11	3	14
Hadj (s)	0.03	0.00	-0.10	-0.36
Departure Headway (s)	4.2	4.1	4.6	4.4
Degree Utilization, x	0.21	0.23	0.01	0.02
Capacity (veh/h)	842	856	710	748
Control Delay (s/veh)	8.3	8.4	7.7	7.5
Approach Delay (s/veh)	8.3	8.4	7.7	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.3			
Level of Service	A			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			

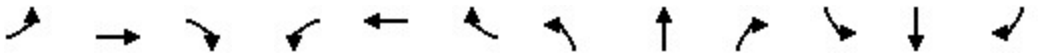
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	7	0	0	8	0	0
Future Volume (vph)	7	0	0	8	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	0	0	9	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	9	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	0	8	0	0
Future Volume (Veh/h)	7	0	0	8	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	0	0	9	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			8		17	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			8		17	8
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1612		1001	1074

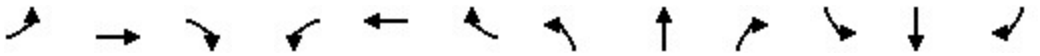
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	8	9	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1612	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service
Analysis Period (min)		15	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	253	3	4	224	2	8	3	3	6	3	32
Future Volume (vph)	12	253	3	4	224	2	8	3	3	6	3	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.999			0.972			0.895	
Flt Protected		0.998			0.999			0.972			0.993	
Satd. Flow (prot)	0	1870	0	0	1863	0	0	1642	0	0	1584	0
Flt Permitted		0.998			0.999			0.972			0.993	
Satd. Flow (perm)	0	1870	0	0	1863	0	0	1642	0	0	1584	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	6		32	32		6			3	3		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	10%	2%	0%	0%	3%	0%	0%	50%	0%	0%	0%	10%
Adj. Flow (vph)	16	333	4	5	295	3	11	4	4	8	4	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	0	0	303	0	0	19	0	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	253	3	4	224	2	8	3	3	6	3	32
Future Volume (vph)	12	253	3	4	224	2	8	3	3	6	3	32
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	16	333	4	5	295	3	11	4	4	8	4	42

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	353	303	19	54
Volume Left (vph)	16	5	11	8
Volume Right (vph)	4	3	4	42
Hadj (s)	0.04	0.05	0.17	-0.30
Departure Headway (s)	4.5	4.5	5.6	5.1
Degree Utilization, x	0.44	0.38	0.03	0.08
Capacity (veh/h)	786	769	549	619
Control Delay (s/veh)	10.9	10.3	8.8	8.5
Approach Delay (s/veh)	10.9	10.3	8.8	8.5
Approach LOS	B	B	A	A

Intersection Summary				
Delay	10.4			
Level of Service	B			
Intersection Capacity Utilization	31.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	12	0	0
Future Volume (vph)	8	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	0	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

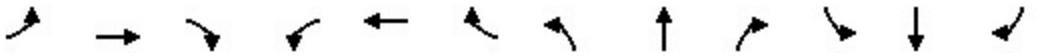
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	0	0	12	0	0
Future Volume (Veh/h)	8	0	0	12	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	0	13	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			9		22	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			9		22	9
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1611		995	1073

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	13	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1611	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	145	7	2	186	11	6	0	4	7	0	14
Future Volume (vph)	21	145	7	2	186	11	6	0	4	7	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.992			0.946			0.908	
Flt Protected		0.994						0.971			0.984	
Satd. Flow (prot)	0	1869	0	0	1871	0	0	1765	0	0	1716	0
Flt Permitted		0.994						0.971			0.984	
Satd. Flow (perm)	0	1869	0	0	1871	0	0	1765	0	0	1716	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	5		16	16		5			5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	22	154	7	2	198	12	6	0	4	7	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	0	0	212	0	0	10	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	145	7	2	186	11	6	0	4	7	0	14
Future Volume (vph)	21	145	7	2	186	11	6	0	4	7	0	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	154	7	2	198	12	6	0	4	7	0	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	183	212	10	22
Volume Left (vph)	22	2	6	7
Volume Right (vph)	7	12	4	15
Hadj (s)	0.03	0.00	-0.12	-0.35
Departure Headway (s)	4.2	4.2	4.7	4.4
Degree Utilization, x	0.21	0.24	0.01	0.03
Capacity (veh/h)	838	852	705	737
Control Delay (s/veh)	8.4	8.5	7.7	7.5
Approach Delay (s/veh)	8.4	8.5	7.7	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	33.7%	ICU Level of Service	A	
Analysis Period (min)	15			

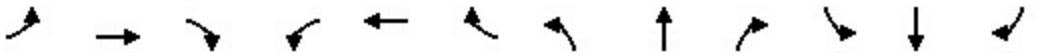
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	9	0	0
Future Volume (vph)	8	0	0	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	0	10	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	10	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	0	0	9	0	0
Future Volume (Veh/h)	8	0	0	9	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	0	10	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			9		19	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			9		19	9
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1611		998	1073

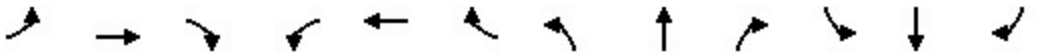
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	10	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1611	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	280	3	4	247	2	8	3	3	6	3	33
Future Volume (vph)	13	280	3	4	247	2	8	3	3	6	3	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.999			0.972			0.894	
Flt Protected		0.998			0.999			0.972			0.993	
Satd. Flow (prot)	0	1872	0	0	1863	0	0	1642	0	0	1582	0
Flt Permitted		0.998			0.999			0.972			0.993	
Satd. Flow (perm)	0	1872	0	0	1863	0	0	1642	0	0	1582	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	6		32	32		6			3	3		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	10%	2%	0%	0%	3%	0%	0%	50%	0%	0%	0%	10%
Adj. Flow (vph)	17	368	4	5	325	3	11	4	4	8	4	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	389	0	0	333	0	0	19	0	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	280	3	4	247	2	8	3	3	6	3	33
Future Volume (vph)	13	280	3	4	247	2	8	3	3	6	3	33
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	17	368	4	5	325	3	11	4	4	8	4	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	389	333	19	55
Volume Left (vph)	17	5	11	8
Volume Right (vph)	4	3	4	43
Hadj (s)	0.04	0.05	0.17	-0.31
Departure Headway (s)	4.5	4.6	5.8	5.3
Degree Utilization, x	0.49	0.42	0.03	0.08
Capacity (veh/h)	778	761	529	595
Control Delay (s/veh)	11.8	10.9	9.0	8.7
Approach Delay (s/veh)	11.8	10.9	9.0	8.7
Approach LOS	B	B	A	A

Intersection Summary				
Delay	11.1			
Level of Service	B			
Intersection Capacity Utilization	33.2%	ICU Level of Service	A	
Analysis Period (min)	15			

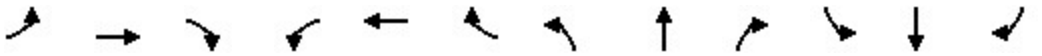
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	12	0	0
Future Volume (vph)	8	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	0	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	0	0	12	0	0
Future Volume (Veh/h)	8	0	0	12	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	0	13	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			9		22	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			9		22	9
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1611		995	1073

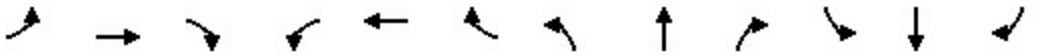
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	13	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1611	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	160	7	2	205	12	6	0	4	7	0	14
Future Volume (vph)	23	160	7	2	205	12	6	0	4	7	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.992			0.946			0.908	
Flt Protected		0.994						0.971			0.984	
Satd. Flow (prot)	0	1868	0	0	1871	0	0	1765	0	0	1716	0
Flt Permitted		0.994						0.971			0.984	
Satd. Flow (perm)	0	1868	0	0	1871	0	0	1765	0	0	1716	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	5		16	16		5			5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	24	170	7	2	218	13	6	0	4	7	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	0	0	233	0	0	10	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	160	7	2	205	12	6	0	4	7	0	14
Future Volume (vph)	23	160	7	2	205	12	6	0	4	7	0	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	24	170	7	2	218	13	6	0	4	7	0	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	201	233	10	22
Volume Left (vph)	24	2	6	7
Volume Right (vph)	7	13	4	15
Hadj (s)	0.03	0.00	-0.12	-0.35
Departure Headway (s)	4.2	4.2	4.7	4.5
Degree Utilization, x	0.24	0.27	0.01	0.03
Capacity (veh/h)	833	848	686	719
Control Delay (s/veh)	8.5	8.7	7.8	7.6
Approach Delay (s/veh)	8.5	8.7	7.8	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	36.1%	ICU Level of Service	A	
Analysis Period (min)	15			

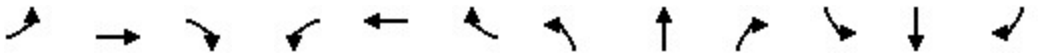
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	0	0	9	0	0
Future Volume (vph)	8	0	0	9	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	0	0	10	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	10	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	0	0	9	0	0
Future Volume (Veh/h)	8	0	0	9	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	0	10	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			9		19	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			9		19	9
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1611		998	1073

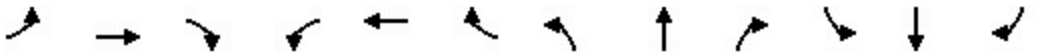
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	9	10	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1611	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	253	5	7	224	2	11	3	10	6	3	32
Future Volume (vph)	12	253	5	7	224	2	11	3	10	6	3	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.999			0.943			0.895	
Flt Protected		0.998			0.999			0.978			0.993	
Satd. Flow (prot)	0	1868	0	0	1864	0	0	1664	0	0	1584	0
Flt Permitted		0.998			0.999			0.978			0.993	
Satd. Flow (perm)	0	1868	0	0	1864	0	0	1664	0	0	1584	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	6		32	32		6			3	3		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	10%	2%	0%	0%	3%	0%	0%	50%	0%	0%	0%	10%
Adj. Flow (vph)	16	333	7	9	295	3	14	4	13	8	4	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	356	0	0	307	0	0	31	0	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	253	5	7	224	2	11	3	10	6	3	32
Future Volume (vph)	12	253	5	7	224	2	11	3	10	6	3	32
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	16	333	7	9	295	3	14	4	13	8	4	42

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	356	307	31	54
Volume Left (vph)	16	9	14	8
Volume Right (vph)	7	3	13	42
Hadj (s)	0.04	0.05	-0.05	-0.30
Departure Headway (s)	4.5	4.6	5.4	5.2
Degree Utilization, x	0.45	0.39	0.05	0.08
Capacity (veh/h)	778	760	568	610
Control Delay (s/veh)	11.1	10.5	8.7	8.6
Approach Delay (s/veh)	11.1	10.5	8.7	8.6
Approach LOS	B	B	A	A

Intersection Summary				
Delay	10.6			
Level of Service	B			
Intersection Capacity Utilization	30.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	4	0	12	9	0
Future Volume (vph)	8	4	0	12	9	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958					
Flt Protected					0.950	
Satd. Flow (prot)	1804	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1804	0	0	1883	1789	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	4	0	13	10	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

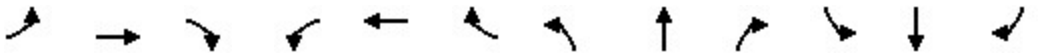
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	4	0	12	9	0
Future Volume (Veh/h)	8	4	0	12	9	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	4	0	13	10	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			13		24	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		24	11
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1606		992	1070

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	13	10
Volume Left	0	0	10
Volume Right	4	0	0
cSH	1700	1606	992
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s/veh)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	145	10	6	186	11	9	0	6	7	0	14
Future Volume (vph)	21	145	10	6	186	11	9	0	6	7	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.992			0.949			0.908	
Flt Protected		0.994			0.999			0.970			0.984	
Satd. Flow (prot)	0	1864	0	0	1870	0	0	1768	0	0	1716	0
Flt Permitted		0.994			0.999			0.970			0.984	
Satd. Flow (perm)	0	1864	0	0	1870	0	0	1768	0	0	1716	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	5		16	16		5			5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	22	154	11	6	198	12	10	0	6	7	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	187	0	0	216	0	0	16	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	21	145	10	6	186	11	9	0	6	7	0	14
Future Volume (vph)	21	145	10	6	186	11	9	0	6	7	0	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	154	11	6	198	12	10	0	6	7	0	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	187	216	16	22
Volume Left (vph)	22	6	10	7
Volume Right (vph)	11	12	6	15
Hadj (s)	0.02	0.00	-0.10	-0.35
Departure Headway (s)	4.2	4.2	4.7	4.4
Degree Utilization, x	0.22	0.25	0.02	0.03
Capacity (veh/h)	835	846	699	731
Control Delay (s/veh)	8.4	8.6	7.8	7.6
Approach Delay (s/veh)	8.4	8.6	7.8	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.4			
Level of Service	A			
Intersection Capacity Utilization	29.8%	ICU Level of Service	A	
Analysis Period (min)	15			

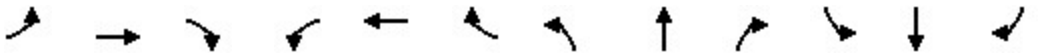
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	7	0	9	4	0
Future Volume (vph)	8	7	0	9	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936					
Flt Protected					0.950	
Satd. Flow (prot)	1763	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1763	0	0	1883	1789	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	8	0	10	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	10	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	7	0	9	4	0
Future Volume (Veh/h)	8	7	0	9	4	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	8	0	10	4	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			17		23	13
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			17		23	13
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1600		993	1067

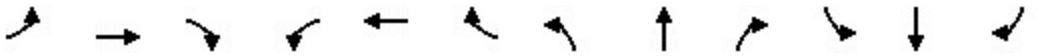
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	17	10	4
Volume Left	0	0	4
Volume Right	8	0	0
cSH	1700	1600	993
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s/veh)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	280	5	7	247	2	11	3	10	6	3	33
Future Volume (vph)	13	280	5	7	247	2	11	3	10	6	3	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.999			0.943			0.894	
Flt Protected		0.998			0.999			0.978			0.993	
Satd. Flow (prot)	0	1870	0	0	1863	0	0	1664	0	0	1582	0
Flt Permitted		0.998			0.999			0.978			0.993	
Satd. Flow (perm)	0	1870	0	0	1863	0	0	1664	0	0	1582	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	6		32	32		6			3	3		
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	10%	2%	0%	0%	3%	0%	0%	50%	0%	0%	0%	10%
Adj. Flow (vph)	17	368	7	9	325	3	14	4	13	8	4	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	392	0	0	337	0	0	31	0	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	13	280	5	7	247	2	11	3	10	6	3	33
Future Volume (vph)	13	280	5	7	247	2	11	3	10	6	3	33
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	17	368	7	9	325	3	14	4	13	8	4	43

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	392	337	31	55
Volume Left (vph)	17	9	14	8
Volume Right (vph)	7	3	13	43
Hadj (s)	0.04	0.05	-0.05	-0.31
Departure Headway (s)	4.6	4.6	5.6	5.3
Degree Utilization, x	0.50	0.43	0.05	0.08
Capacity (veh/h)	770	752	546	586
Control Delay (s/veh)	12.0	11.1	8.9	8.8
Approach Delay (s/veh)	12.0	11.1	8.9	8.8
Approach LOS	B	B	A	A

Intersection Summary				
Delay	11.3			
Level of Service	B			
Intersection Capacity Utilization	32.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	4	0	12	9	0
Future Volume (vph)	8	4	0	12	9	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958					
Flt Protected					0.950	
Satd. Flow (prot)	1804	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1804	0	0	1883	1789	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	4	0	13	10	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

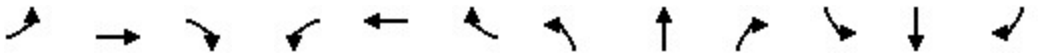
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	4	0	12	9	0
Future Volume (Veh/h)	8	4	0	12	9	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	4	0	13	10	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			13		24	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		24	11
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1606		992	1070

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	13	13	10
Volume Left	0	0	10
Volume Right	4	0	0
cSH	1700	1606	992
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s/veh)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	160	10	6	205	12	9	0	6	7	0	14
Future Volume (vph)	23	160	10	6	205	12	9	0	6	7	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.993			0.949			0.908	
Flt Protected		0.994			0.999			0.970			0.984	
Satd. Flow (prot)	0	1865	0	0	1871	0	0	1768	0	0	1716	0
Flt Permitted		0.994			0.999			0.970			0.984	
Satd. Flow (perm)	0	1865	0	0	1871	0	0	1768	0	0	1716	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		175.6			244.5			266.6			162.2	
Travel Time (s)		15.8			22.0			24.0			14.6	
Confl. Peds. (#/hr)	5		16	16		5			5	5		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	24	170	11	6	218	13	10	0	6	7	0	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	205	0	0	237	0	0	16	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			-13.0	
Crosswalk Width(m)		3.0			8.0			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	23	160	10	6	205	12	9	0	6	7	0	14
Future Volume (vph)	23	160	10	6	205	12	9	0	6	7	0	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	24	170	11	6	218	13	10	0	6	7	0	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	205	237	16	22
Volume Left (vph)	24	6	10	7
Volume Right (vph)	11	13	6	15
Hadj (s)	0.02	0.00	-0.10	-0.35
Departure Headway (s)	4.2	4.2	4.8	4.5
Degree Utilization, x	0.24	0.28	0.02	0.03
Capacity (veh/h)	830	832	680	712
Control Delay (s/veh)	8.6	8.8	7.9	7.7
Approach Delay (s/veh)	8.6	8.8	7.9	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.6		
Level of Service	A		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	7	0	9	4	0
Future Volume (vph)	8	7	0	9	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936					
Flt Protected					0.950	
Satd. Flow (prot)	1763	0	0	1883	1789	0
Flt Permitted					0.950	
Satd. Flow (perm)	1763	0	0	1883	1789	0
Link Speed (k/h)	40			40	40	
Link Distance (m)	266.6			160.7	118.6	
Travel Time (s)	24.0			14.5	10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	8	0	10	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	10	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.7	
Link Offset(m)	0.0			0.0	5.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	7	0	9	4	0
Future Volume (Veh/h)	8	7	0	9	4	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	8	0	10	4	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			17		23	13
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			17		23	13
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1600		993	1067

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	17	10	4
Volume Left	0	0	4
Volume Right	8	0	0
cSH	1700	1600	993
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s/veh)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	8.6
Approach LOS			A

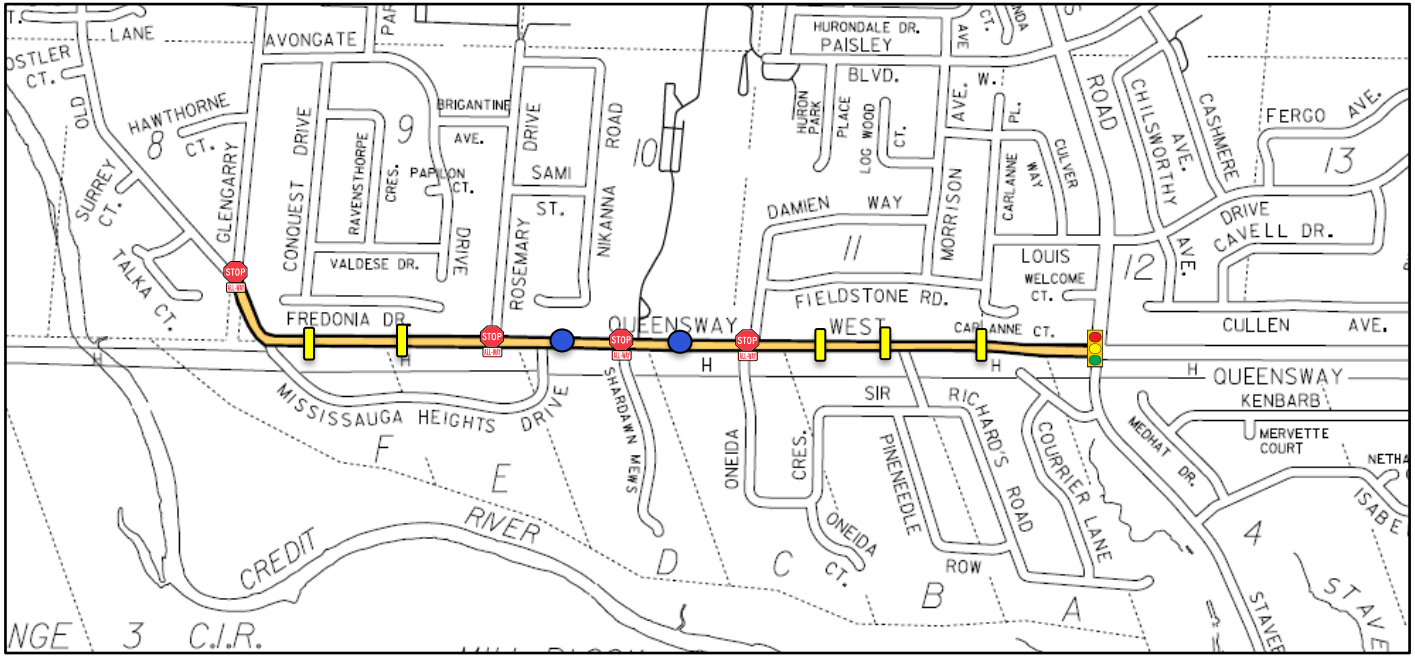
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX E

Roadway Improvement Excerpts

Queensway West

Between Mavis Road and Old Carriage Road



Existing Traffic Signal Location

Existing All-Way Stop Locations

Proposed Speed Cushion Locations

Proposed Flexible Bollard Locations

APPENDIX F

Background Development Excerpts

Diamond Developments Inc. &
Maria and Mario Polla

TRAFFIC OPERATION ASSESSMENT

900 & 904 Mississauga Heights Drive, City of Mississauga

Proposed Residential Development

June 2023

23382

4 TRIP GENERATION

The proposed development will consist of 18 single-family dwelling units. Access to the site is proposed via one (1) unsignalized full movement access along Mississauga Heights Drive. The sections below discuss the calculation, distribution, and assignment of site-generated vehicle trips.

4.1 TRIP GENERATION

Trip generation was estimated using baseline trip rates from the ITE Trip Generation Manual 11th Edition. For the proposed residential uses, conversion to person trips used average rates for ITE Land use code (LUC) 220 Multifamily Housing (Low-Rise) in General Urban/Suburban, Not Close to Rail Transit Setting.

Table 4-1 details the proposed residential auto trip generation, with residential trip generation by mode provided in **Table 4-2.**.

Table 4-1: Proposed Site Vehicle Trip Generation

Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Residential ITE LUC 220 – Multifamily Housing (Low-Rise) – 18 units	ITE Person Trip Rate (/unit)	0.08	0.30	0.38	0.34	0.20	0.54
	Total External Trips	2	5	7	6	4	10
	External Auto Trips (70%)	**1**	**3**	**4**	**4**	**3**	**7**
Total New Site Auto Trips		**1**	**3**	**4**	**4**	**3**	**7**

The proposed development is expected to generate a total of four (4) net two-way auto trips (one (1) inbound and three (3) outbound) during the weekday AM peak hour, and seven (7) new two-way auto trips (four (4) inbound and three (3) outbound) during the weekday PM peak hour.

Table 4-2: Subject Site Multi-Modal Trip Generation

Land Use	Description	Modal Split	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Residential	**External Person Trips**	**100%**	**2**	**5**	**7**	**6**	**4**	**10**
	Auto Driver Trips	70%	1	3	4	4	3	7
	Passenger Trip	9%	0	0	0	1	0	1
	Transit Trips	14%	1	2	3	1	1	2
	Pedestrian trips	6%	0	0	0	0	0	0
	Cycling Trips	1%	0	0	0	0	0	0

The full ITE survey data results for the proposed residential trip generation is provided in **Appendix B**.

4.2 LOCAL MODE SPLIT

The local mode split was based on 2016 Transportation Tomorrow Survey (TTS) data filtered for traffic analysis zones 3652 and 3655 and includes residential trips with trip purpose including home-based work and home-based school. The modal split for site residential trips during weekday AM/PM peak periods is provided below.

- Auto Driver Trips: 70%
- Passenger Trips: 9%
- Transit Trips: 14%
- Pedestrian Trips: 6%
- Cycling Trips: 1%

4.3 TRIP DISTRIBUTION AND ASSIGNMENT

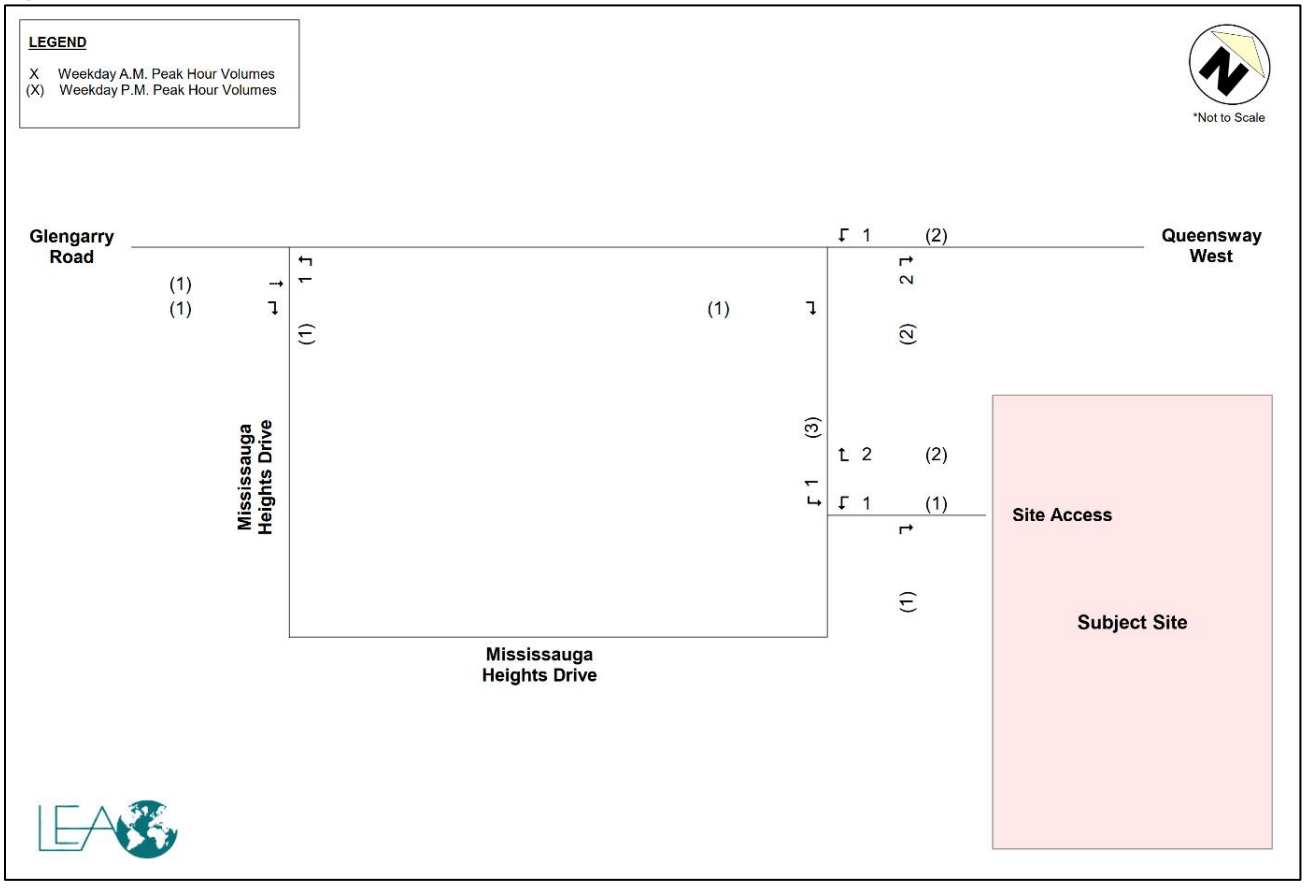
Trip distribution for the proposed development was based on existing traffic patterns observed. Inbound and outbound trips onto Mississauga Heights Drive from the 2016 TTS data was used to obtain the percentage of trips travelling east and west on Queensway West and Glengarry Road. Vehicle trip assignments were based on the local road network, turn restrictions, changes in future road network (assumed none), logical routing, and type of access. **Table 4-3** summarizes predicted site trip distribution by expected route.

Table 4-3: Residential Site Trip Distribution

Expected Route	Residential			
	Weekday AM		Weekday PM	
	In	Out	In	Out
Queensway West and NS Corridors	75%	67%	33%	54%
Glengarry Road and EW Corridors	25%	33%	67%	46%
Total	100%	100%	100%	100%

The proposed residential traffic volumes for the weekday AM and PM peak hours are illustrated in **Figure 4-1.**

Figure 4-1: Site Traffic Volumes



APPENDIX G

ITE Trip Generation Excerpts

Land Use: 210
Single-Family Detached Housing

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates, based on a small sample of sites, are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 215), and higher than those for senior adult housing—single-family (Land Use 251). (Source 1008)

Additional Data

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alabama, Arizona, British Columbia (CAN), California, Delaware, Illinois, Kentucky, Massachusetts, Minnesota, Montana, New Jersey, New York, North Carolina, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, and West Virginia.

Source Numbers

356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079, 1204, 1221, 1225, 1236, 1251, 1265, 1267

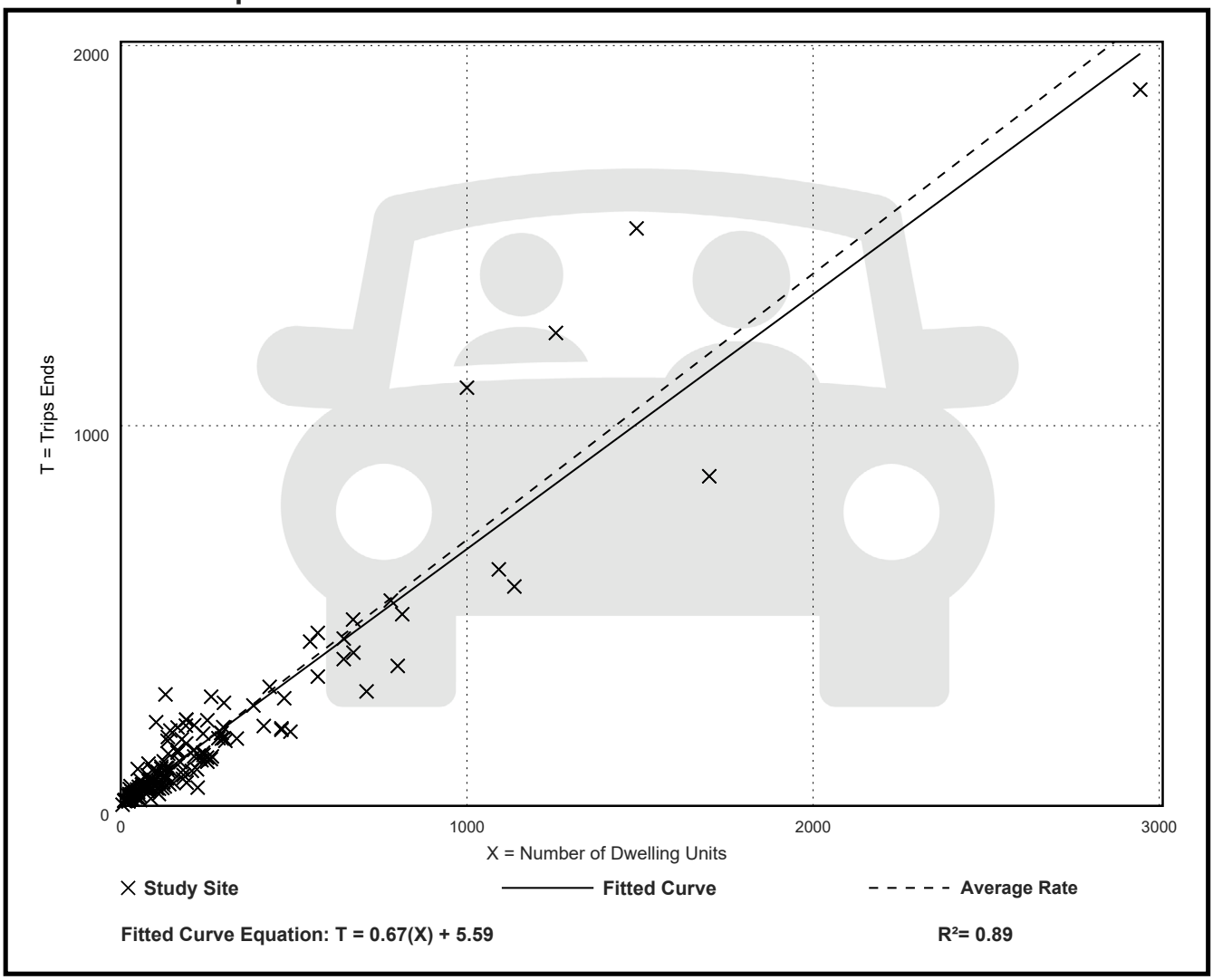
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	153
Avg. Num. of Dwelling Units:	239
Directional Distribution:	27% entering, 73% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.22 - 2.27	0.26

Data Plot and Equation



Fitted Curve Equation: T = 0.67(X) + 5.59

R^2= 0.89

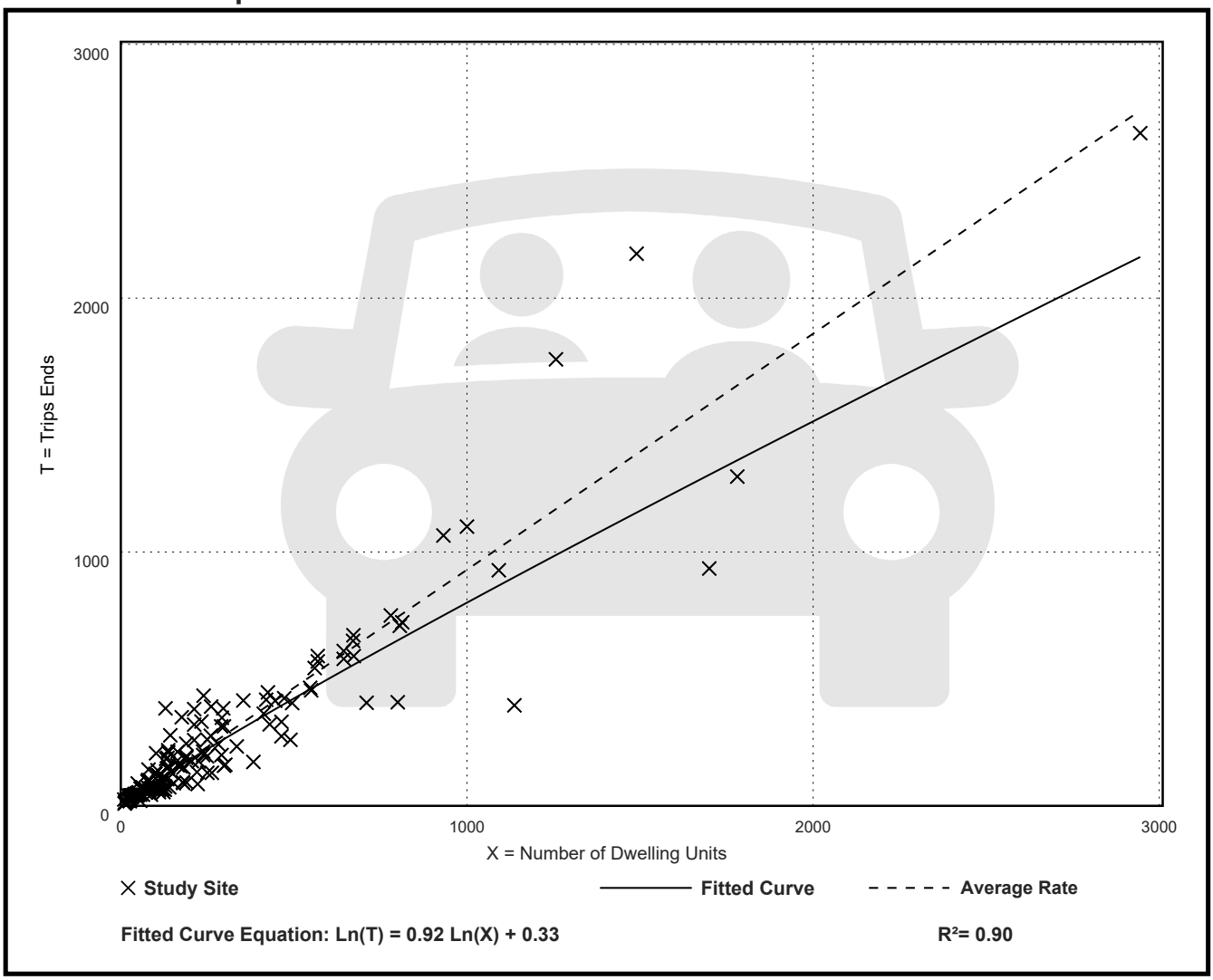
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	166
Avg. Num. of Dwelling Units:	266
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.35 - 2.98	0.33

Data Plot and Equation



APPENDIX H

Transportation Tomorrow Survey Queries

Tue Sep 16 2025 10:10:41 GMT-0400 (Eastern Daylight Time) - Run Time: 3267ms

Cross Tabulation Query Form - Trip - 2016

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and
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and
Trip purpose of destination - purp_dest In H,)

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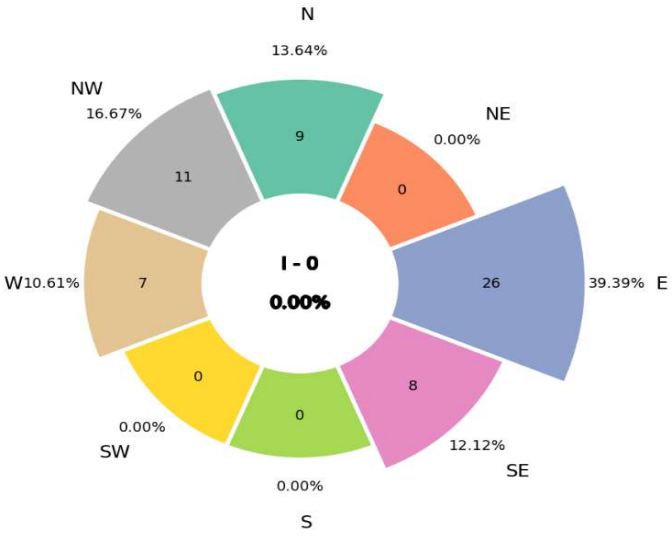

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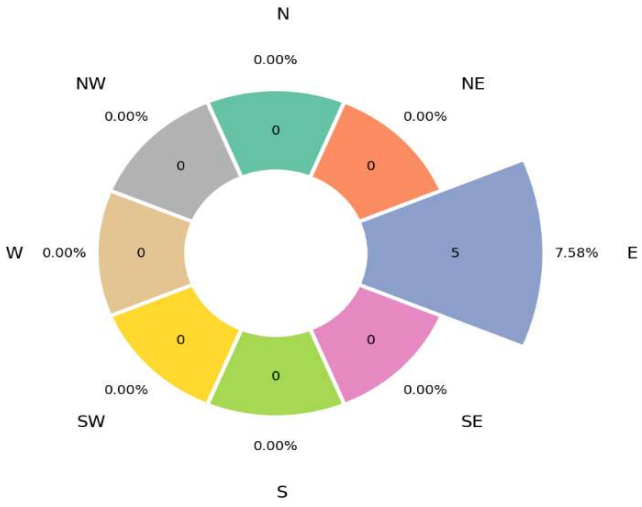

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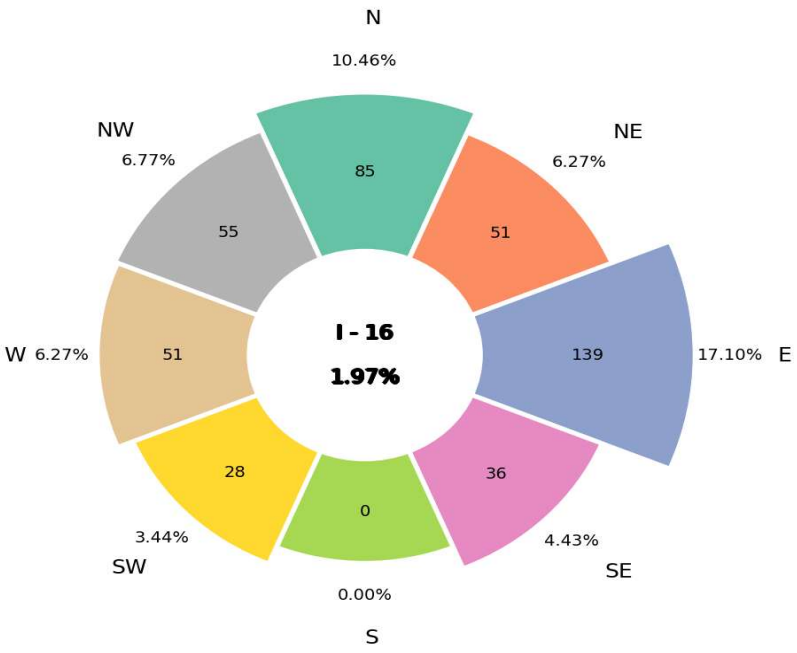

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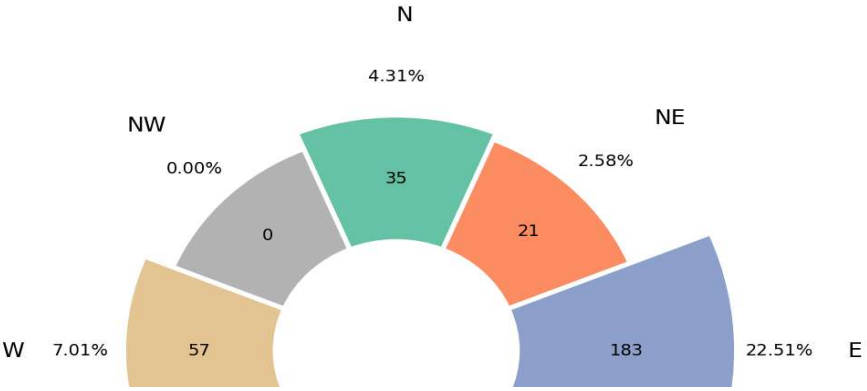

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Tue Sep 16 2025 10:15:05 GMT-0400 (Eastern Daylight Time) - Run Time: 2909ms

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and
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and
Trip purpose of destination - purp_dest In H,)

Trip 2016
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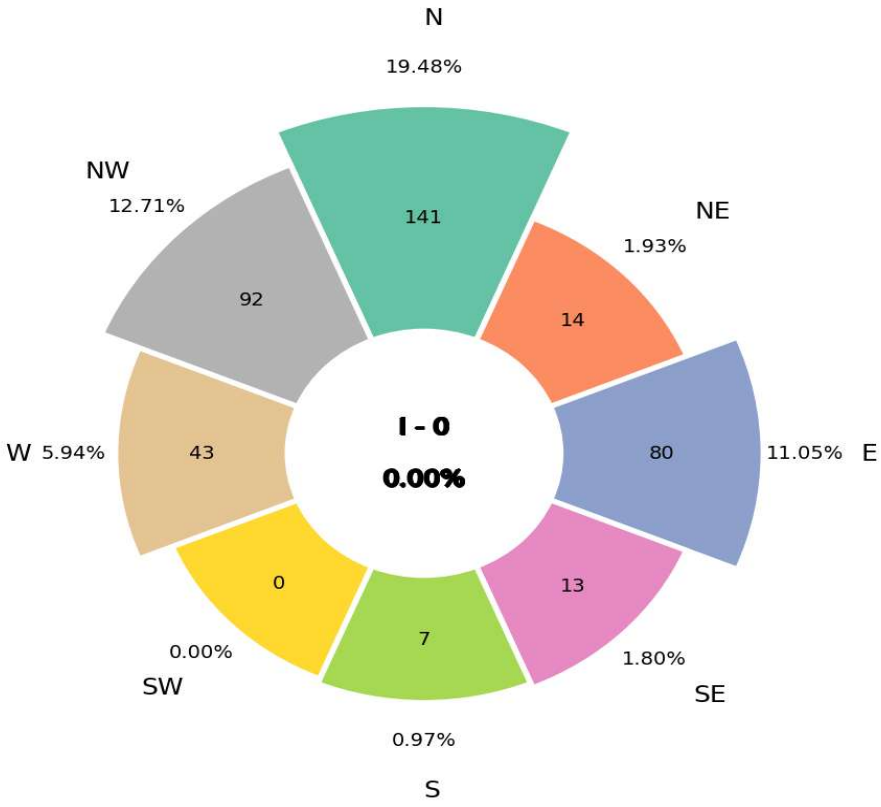
Internal Trip Distribution



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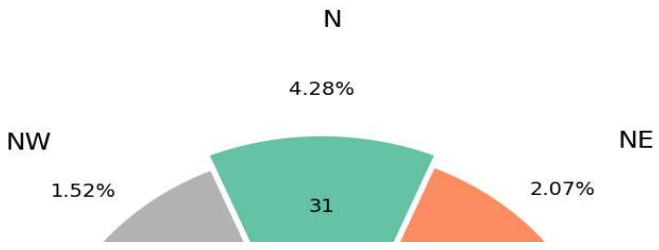

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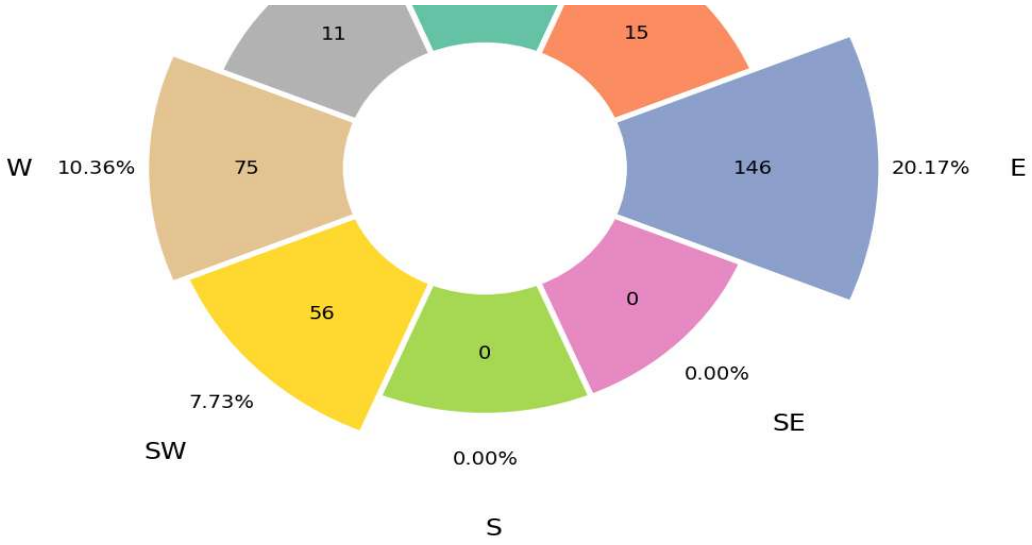

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Cross Tabulation Query Form - Trip - 2016

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and
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and
Trip purpose of origin - purp_orig In H,)

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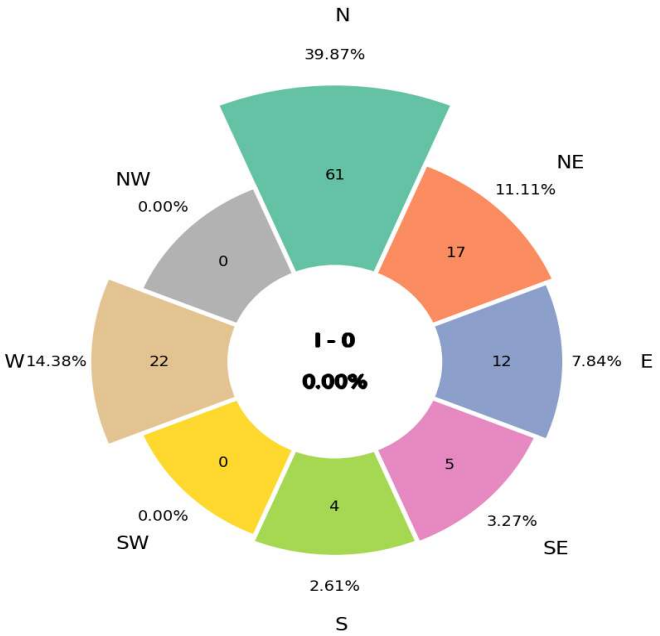

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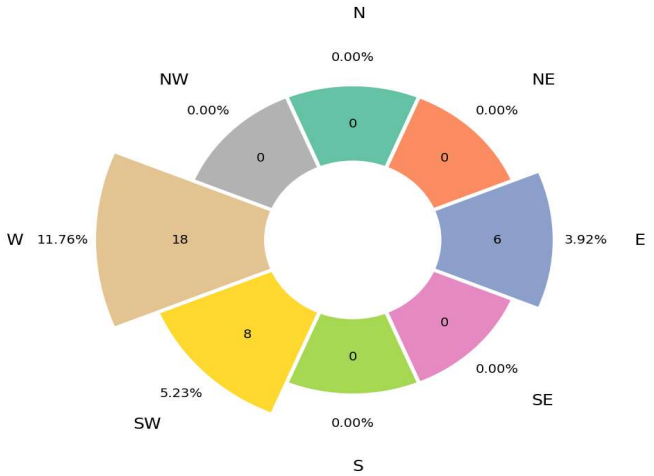
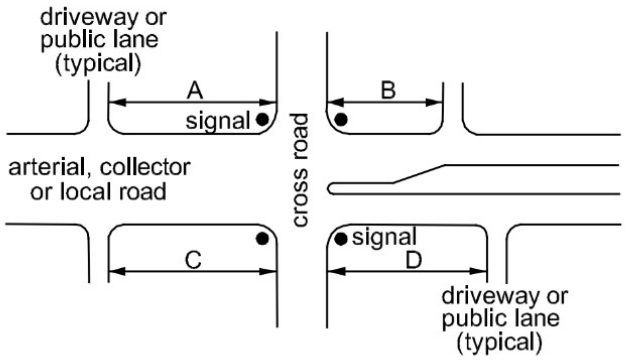


APPENDIX I

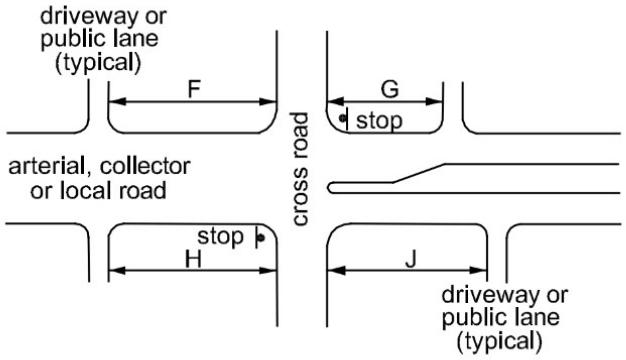
TAC GDGCR Excerpts



item	min. clearance, m		
	arterial	collector [b]	local [d]
A	70 [c]	55	15
B	# [a]	25	15
C	70	55	15
D	70 [c]	55	15

Notes: a. Distance (#) positions driveway or public lane in advance of the left turn storage length (min.) plus bay taper (des.).
b. Lesser values reflect lower volumes and reduces level of service on collectors and locals.
c. Reduced distances feasible if auxiliary lane implemented, see Section 8.5
d. Values based on operating speed of 50km/h, higher values desirable for higher speeds or may be warranted by traffic conditions.

signals at the cross road



item	min. clearance, m		
	arterial	collector [b]	local [b]
F	35	20	15
G	# [a]	25	15
H	25	25	15
J	35	20	15

Notes: a. Distance (#) positions driveway or public lane in advance of the left turn storage length (min.) plus bay taper (des.).
b. Lesser values reflect lower volumes and reduces level of service on collectors and locals.

stop control at the cross road

Figure 8.8.2: Suggested Minimum Corner Clearances to Accesses or Public Lanes at Major Intersections

Inadequate corner clearance between accesses and signalized intersections along a major road, such as a major arterial, can create serious operational problems including:

collector roadways, while a 3.0 m minimum is the suggested dimension for both commercial and industrial land uses. If there is a need to provide parallel parking between driveways along the roadway, a spacing of 6.0 to 7.5 m is suitable. If the spacing provided is in the range of 3.0 to 5.0 m, the space may appear inviting to a driver wishing to park, but if used, severely hampers the operation of the driveways by reducing sight lines and interfering with the turning paths of the vehicles.

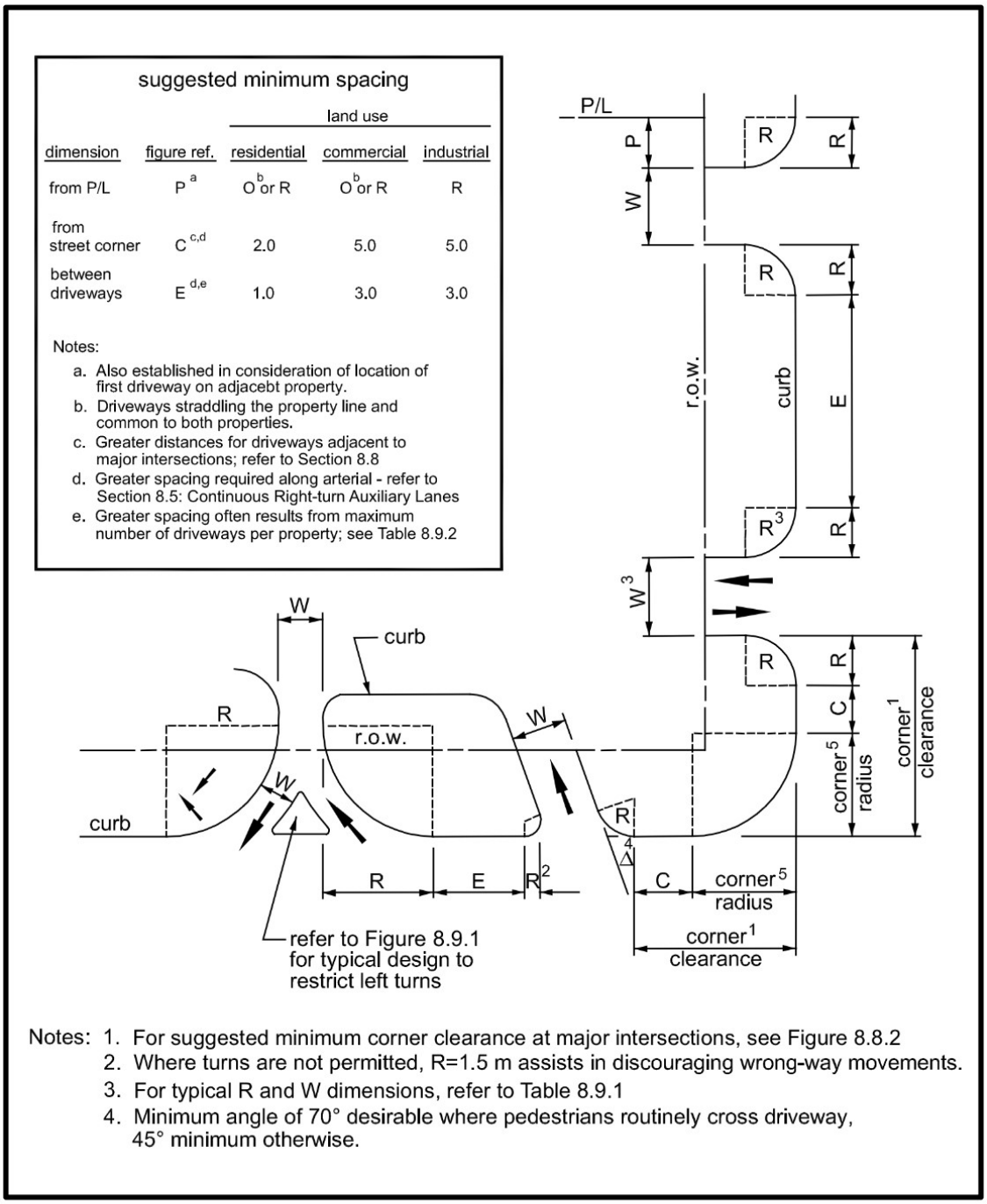


Figure 8.9.2: Driveway Spacing Guidelines – Locals and Collectors

Stopping sight distance is the sum of the distance travelled during the perception and reaction time and the braking distance.

$$SSD = 0.278Vt + 0.039 \frac{V^2}{a} \quad (2.5.2)$$

Where:

SSD = Stopping sight distance (m)
t = Brake reaction time, 2.5 s
V = Design speed (km/h)
a = Deceleration rate (m/s^2)

Table 2.5.2 gives the minimum stopping sight distances on level grade, on wet pavement, for a range of design speeds. These values are used for vertical curve design, intersection geometry and the placement of traffic control devices. The stopping sight distances quoted in **Table 2.5.2** may need to be increased for a variety of reasons related to grade and vehicle type as noted below.

Table 2.5.2: Stopping Sight Distance on level roadways for Automobiles[54]

Design speed (km/h)	Brake reaction distance (m)	Braking distance on level (m)	Stopping sight distance	
			Calculated (m)	Design (m)
20	13.9	4.6	18.5	20
30	20.9	10.3	31.2	35
40	27.8	18.4	46.2	50
50	34.8	28.7	63.5	65
60	41.7	41.3	83.0	85
70	48.7	56.2	104.9	105
80	55.6	73.4	129.0	130
90	62.6	92.9	155.5	160
100	69.5	114.7	184.2	185
110	76.5	138.8	215.3	220
120	83.4	165.2	248.6	250
130	90.4	193.8	284.2	285

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s^2 used to determine calculated sight distance.

Table 9.9.3: Time Gap for Case B1, Left Turn from Stop

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	7.5
Single-unit truck	9.5
Combination truck (WB 19 and WB 20)	11.5
Longer truck	To be established by road authority

Notes: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.2 s for each percent grade for left turns.
- Some road authorities use higher values for certain specialized vehicles (e.g., Alberta uses 22 s for very long log trucks).

The intersection sight distance along the major road (distance b in **Figure 9.9.2**) is determined by:

$$ISD = 0.278\ V_{major}\ t_g \qquad (9.9.1)$$

Where:

ISD = intersection sight distance (length of the leg of sight triangle along the major road) (m)
V_{major} = design speed of the major road (km/h)
t_g = time gap for minor road vehicle to enter the major road (s)

For example, a passenger car turning left onto a two-lane major road should be provided sight distance equivalent to a time gap of 7.5 s in major-road traffic. If the design speed of the major road is 100 km/h, this corresponds to a sight distance of 0.278(100)(7.5) = 208.5 or 210 m, rounded for design.

A passenger car turning left onto a four-lane undivided roadway will need to cross two near lanes, rather than one. This increases the recommended gap in major-road traffic from 7.5 to 8.0 s. The corresponding value of sight distance for this example would be 223 m. If the minor-road approach to such an intersection is located on a 4% upgrade, then the time gap selected for intersection sight distance design for left turns should be increased from 8.0 to 8.8 s, equivalent to an increase of 0.2 s for each percent grade.

The design values for intersection sight distance for passenger cars are shown in **Table 9.9.4**. **Figure 9.9.4** includes design values, based on the time gaps for the design vehicles included in **Table 9.9.3**.

No adjustment of the recommended sight distance values for the major-road grade is generally needed because both the major- and minor-road vehicle will be on the same grade when departing from the intersection. However, if the minor-road design vehicle is a heavy truck and the intersection is located near a sag vertical curve with grades over 3%, then an adjustment to extend the recommended sight distance based on the major-road grade should be considered.

Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn From Stop

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of case B3.

The time gaps in **Table 9.9.3** can be decreased by 1.0 s for right-turn maneuvers without undue interference with major-road traffic. These adjusted time gaps for the right turn from the minor road are shown in **Table 9.9.5**. Design values based on these adjusted time gaps are shown in **Table 9.9.6** for passenger cars. **Figure 9.9.5** includes the design values for the design vehicles for each of the time gaps in **Table 9.9.5**.

Table 9.9.5: Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	6.5
Single-unit truck	8.5
Combination truck (WB 19 and WB 20)	10.5

Note: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and with grades of 3% or less. The table values should be adjusted as follows:

- For multi-lane highways: For left turns onto two-lane highways with more than two lanes, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.
- For minor approach grades: If the approach grade is an upgrade that exceeds 3%, add 0.1 s for each percent grade for left turns.

Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	36.1	40
30	35	54.2	55
40	50	72.3	75
50	65	90.4	95
60	85	108.4	110
70	105	126.5	130
80	130	144.6	145
90	160	162.6	165
100	185	180.7	185
110	220	198.8	200
120	250	216.8	220
130	285	234.9	235

Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or to cross a two-lane highway with no median and with grades of 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

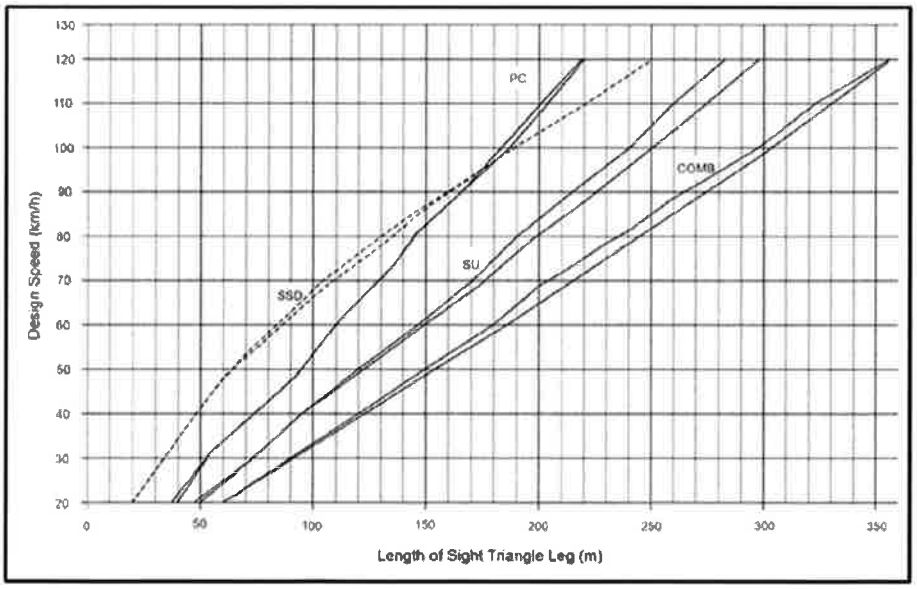


Figure 9.9.5: Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver (Calculated and Design Values Plotted)

Case F – Left Turns from the Major Road

All locations along a major highway from which vehicles are permitted to turn left across opposing traffic, including intersections and driveways, should have sufficient sight distance to accommodate the left-turn maneuver. Left-turning drivers need sufficient sight distance to decide when to turn left across the lane(s) used by opposing traffic. Sight distance design should be based on a left turn by a stopped vehicle, since a vehicle that turns left without stopping would need less sight distance. The sight distance along the major road to accommodate left turns is the distance traversed at the design speed of the major road in the travel time for the design vehicle given in **Table 9.9.11**.

Table 9.9.11: Time Gap for Case F, Left Turns from the Major Road

Design Vehicle	Time Gap (t_g)(s) at Design Speed of Major Road
Passenger car	5.5
Single-unit truck	6.5
Combination truck (WB 19 and WB 20)	7.5

Note: Adjustment for multi-lane highways: For turning vehicles that cross more than one opposing lane, add 0.5 s for passenger cars and 0.7 s for trucks for each additional lane to be crossed.

The table also contains appropriate adjustment factors for the number of major-road lanes to be crossed by the turning vehicle. The unadjusted time gap in **Table 9.9.11** for passenger cars was used to develop the sight distances in **Table 9.9.12** and is illustrated in **Figure 9.9.8.**

Table 9.9.12: Intersection Sight Distance – Case F, Left Turn from the Major Road

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance	
		Passenger Cars	
		Calculated (m)	Design (m)
20	20	30.6	35
30	35	45.9	50
40	50	61.2	65
50	65	76.5	80
60	85	91.7	95
70	105	107.0	110
80	130	122.3	125
90	160	137.6	140
100	185	152.9	155
110	220	168.2	170
120	250	183.5	185
130	285	198.8	200

Note: Intersection sight distance shown is for a passenger car making a left turn from an undivided highway. For other conditions and design vehicles, the time gap should be adjusted and the sight distance recalculated.

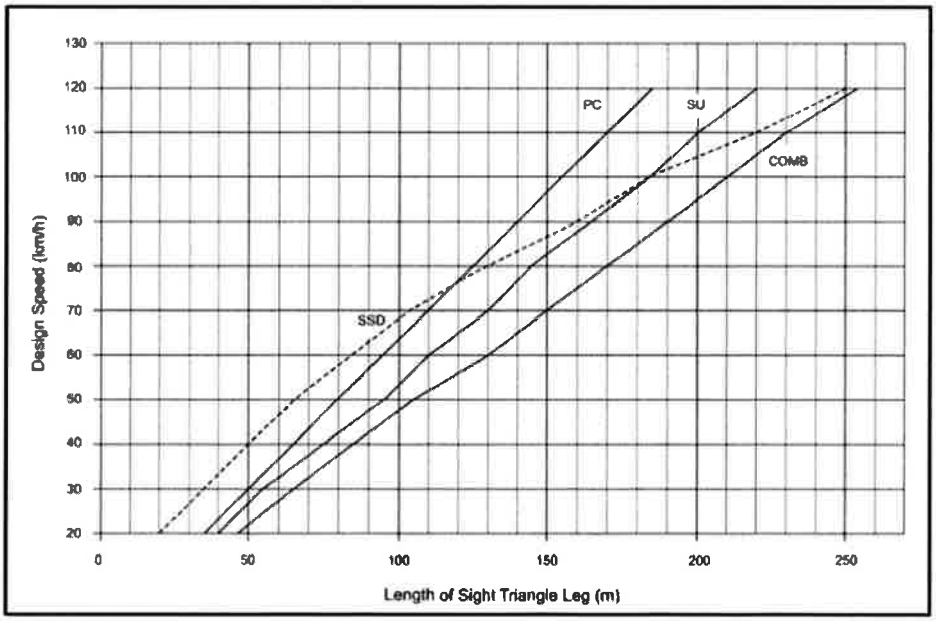


Figure 9.9.8: Intersection Sight Distance – Case F, Left Turn from the Major Road

8.9.10 CLEAR THROAT LENGTHS

In order for major driveways to operate efficiently, both from the road side and internally, it is desirable to provide a no conflict and storage zone within the driveway. This zone is commonly referred to as the clear throat length or set-back distance and is measured from the ends of the driveway curb return radii at the roadway and the point of first conflict on-site. **Figure 8.5.2** illustrates how a throat length is measured. Failure to provide sufficient throat distance results in frequent blocking of on-site circulation roads which can in turn create queues of entering vehicles. The provision of appropriate clear throat length or storage space is particularly important for drive-in service developments where the customers remain in their vehicles while waiting to be served. These types of developments include drive-in restaurants and banks, automatic car washes, and parking facilities with entry control. For large developments, the appropriate throat length is best determined by a detailed traffic analysis based on the traffic control provided at the road and the anticipated volumes and types of traffic. **Table 8.9.3** is a guideline for suggested minimum clear throat lengths for various types of developments.

Table 8.9.3: Suggested Minimum Clear Throat Lengths for Major Driveways[14]

Land Use	Development Size	Minimum Clear Throat Length (m)	
		Collector	Arterial
Light Industrial	<10,000 m^2	8	15
	10,000 – 45,000 m^2	15	30
	>45,000 m^2	15	60
Discount Store	>3,000 m^2	8	15-25
Shopping Centre	<25,000 m^2	8	15
	25,000 – 45,000 m^2	15	25
	45,001 – 70,000 m^2	25	60
	>70,000 m^2	40	75
Supermarket	<2,000 m^2	15	25
	>2,000 m^2	25	40
Apartments	<100 units	8	15
	100 – 200 units	15	25
	>200 units	25	40
Quality restaurant	<1,500 m^2	8	15
	>1,500 m^2	8	25
Fast food restaurant	<200 m^2	8	25
	>200 m^2	15	40
General office	<5,000 m^2	8	15
	5,000 – 10,000 m^2	8	25
	10,001 – 20,000 m^2	15	30
	20,001 – 45,000 m^2	30	45
	>40,000 m^2	40	75
Motel	<150 rooms	8	25
	>150 rooms	8	30

Notes
1. Refer to Figure 8.5.2 for method of measurement
2. For major developments, it is desirable to determine throat lengths and queue on the basis of a site-specific traffic study

APPENDIX J

Mississauga Zoning By-Law No. 0225-2007 Excerpts

3.1.1.4 Parking Space Dimensions

3.1.1.4.1 **Parking spaces** with a parking angle exceeding 15°, except those designated for persons with disabilities, shall have an unobstructed rectangular area with a minimum width of 2.6 m and a minimum length of 5.2 m, exclusive of any **aisle** or **driveway**.

See Illustration No. 8 - Section 1.3 - Illustrations

3.1.1.4.2 **Parallel parking spaces** with a parking angle not exceeding 15°, shall have an unobstructed rectangular area with a minimum width of 2.6 m and a minimum length of 6.7 m, exclusive of any **aisle** or **driveway**.

See Illustration No. 8 - Section 1.3 - Illustrations

3.1.1.4.3 The minimum width of a **parking space**, other than an **accessible parking space** or **parallel parking space**, shall be increased to 2.75 m where the length of one side of the **parking space** abuts a **building**, **structure** or part thereof, except for a **building**, **structure** or part thereof, that extends 1.0 m or less into the front and/or rear of the **parking space**.

See Illustration No. 13 - Section 1.3 - Illustrations

3.1.1.4.4 The minimum width of a **parking space**, other than an **accessible parking space** or **parallel parking space**, shall be increased to 2.9 m where the length of both sides of the **parking space** abuts a **building**, **structure** or part thereof, except for a **building**, **structure** or part thereof, that extends 1.0 m or less into the front and/or rear of the **parking space**.

See Illustration No. 13 - Section 1.3 - Illustrations

3.1.1.4.5 **Accessible parking spaces** are to be provided in two sizes and maintain a 1.5 m wide access **aisle** abutting the entire length of each **parking space**: *(0190-2014)*

(1) Type A shall have an unobstructed rectangular area with a minimum width of 3.4 m and a minimum length of 5.2 m.

(2) Type B shall have an unobstructed rectangular area with a minimum width of 2.4 m and a minimum length of 5.2 m.

(3) An access **aisle** is required to abut each **accessible parking space**. Where two or more **accessible parking spaces** are required in accordance with the regulations contained in Table 3.1.3.1 of this By-law, the access **aisle** may be shared between the **accessible parking spaces**.

See Illustration No. 15 - Section 1.3 Illustrations

3.1.1.4.6 Parallel **accessible parking spaces** with a parking angle not exceeding 15°, shall have an unobstructed rectangular area with a minimum width of 4.6 m and a minimum length of 5.75 m, and maintain a 1.5 m width access **aisle** abutting the entire width of each **accessible parking space**. *(0174-2017)*

See Illustration No. 15 - Section 1.3 Illustrations

3.1.1.5 Aisles

3.1.1.5.1 The minimum **aisle** width shall be 7.0 m.

3.1.1.5.2 Notwithstanding Sentence 3.1.1.5.1, where a one-way **aisle** is provided for access to and from **parking spaces** with a **parking angle** not exceeding 60°, the minimum **aisle** width may be 5.5 m.

See Illustration No. 8 - Section 1.3 - Illustrations

3.1.1.6 Driveways
(0182-2024)

The minimum width of a non-residential **driveway** shall be 2.6 m.

3.1.2 Required Number of Parking Spaces

3.1.2.1 Required Number of Parking Spaces for Residential Uses

3.1.2.1.1 Off-street **parking spaces** for residential **uses** shall be provided in accordance with Table 3.1.2.1 - Required Number of Off-Street Parking Spaces for Residential Uses. *(0117-2022)*

Table 3.1.2.1 - Required Number of Off-Street Parking Spaces for Residential Uses
(0207-2008), (0297-2013), (0174-2017), (0179-2018), (0181-2018/LPAT Order 2019 February 15), (0111-2019/LPAT Order 2021 March 09), (0018-2021), (0117-2022), (0213-2022), (0196-2023), (0199-2024)

Column	A	B	C	D	E	F
Line 1.0	**TYPE OF USE**	**UNIT OF MEASUREMENT**	**PRECINCT 1**	**PRECINCT 2**	**PRECINCT 3**	**PRECINCT 4**
2.0	Condominium **Apartment**	resident spaces per unit	0.0	0.9	1.0	1.1
		visitor spaces per unit	0.0	0.2	0.2	0.2
3.0	Rental **Apartment**	resident spaces per unit	0.0	0.8	0.9	1.0
		visitor spaces per unit	0.0	0.2	0.2	0.2
4.0	**Public authority dwelling unit** or **dwelling unit** provided by a **non-profit housing provider** in a rental **apartment**	resident spaces per unit	0.0	0.6	0.65	0.7
		visitor spaces per unit	0.0	0.2	0.2	0.2
5.0	*deleted by 0199-2024*					
6.0	**Detached Dwelling**, **Linked Dwelling**, **Semi-Detached**, **Street Townhouse**	spaces per unit	0.0	2.0	2.0	2.0
7.0	Condominium **Detached Dwelling**, Condominium **Semi-Detached**, Condominium **Townhouse**, **Detached Dwelling** on a **CEC** - **Road**, **Semi-Detached** on a **CEC** - **Road**, **Townhouse** on a **CEC** - **Road**	resident spaces per unit	0.0	2.0	2.0	2.0
		visitor spaces per unit	0.0	0.25	0.25	0.25
8.0	**Duplex**, **Triplex**	spaces per unit	0.0	1.25	1.25	1.25
8.1	**Fourplex**	spaces per unit	0.0	0.5	0.5	0.5
9.0	**Dwelling units** located above a commercial development with a maximum **height** of three **storeys**	spaces per unit	0.0	1.0	1.0	1.0
10.0	**Group Home**	spaces per unit	0.0	2.0	2.0	2.0
11.0	**Back to back** and **stacked townhouse** without exclusive use **garage** and **driveway**	resident spaces per unit	0.0	1.1	1.3	1.5
		visitor spaces per unit	0.0	0.25	0.25	0.25

Table 3.1.2.1 continued on next page

Column	A	B	C	D	E
Line 1.0	**TYPE OF USE**	**PERCENTAGE OF PEAK PERIOD (WEEKDAY)**			
Table 3.1.2.4 continued from previous page					
2.0	**TYPE OF USE**	**PERCENTAGE OF PEAK PERIOD (SATURDAY)**			
		Morning	**Noon**	**Afternoon**	**Evening**
2.1	**Office/Medical Office/ Financial Institution**	10	10	10	10
2.2	Retail Centre/**Retail Store/ Service Establishment**	80	100	100	70
2.3	**Restaurant/ Convenience Restaurant/ Take-out Restaurant**	20	100	50	100
2.4	**Overnight Accommodation**	70	70	70	100
2.5	Residential - Resident (1) Residential - Visitor	90 20	65 20	90 60	100 100

NOTES: (1) See Sentence 3.1.2.4.1 of this By-law.
(2) See Sentence 3.1.1.1.7 of this By-law.

3.1.2.4.1 For the purpose of Article 3.1.2.4 of this By-law, the calculation for residential **uses** shall exclude **retirement buildings** and **long-term care buildings**. *(0174-2017), (0111-2019/ LPAT Order 2021 March 09), (0117-2022)*

3.1.3 Accessible Parking Spaces

3.1.3.1 Required Number of Accessible Parking Spaces

3.1.3.1A **Accessible parking spaces** for non-residential **uses** shall be provided in compliance with Table 3.1.3.1 - Accessible Parking Regulations. *(0144-2016)*

3.1.3.1B **Accessible parking spaces** for residential **uses** shall only apply to the total number of visitor **parking spaces** required and shall be provided in compliance with Table 3.1.3.1 - Accessible Parking Regulations. *(0144-2016)*

Table 3.1.3.1 - Accessible Parking Regulations
(0190-2014), (0144-2016), (0018-2021)

Column	A	B	C
Line 1.0	**TOTAL NUMBER OF REQUIRED NON-RESIDENTIAL PARKING SPACES**	**TOTAL NUMBER OF REQUIRED VISITOR PARKING SPACES**	**MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES**
2.0	1-12	1-12	1.0 space (1)
3.0	13-100	13-100	4% of the total (1)(2)
4.0	101-200	101-200	1.0 space plus 3% of the total (2)
5.0	201-1 000	201-1 000	2.0 spaces plus 2% of the total (2)
6.0	1 001 and greater	1 001 and greater	11.0 spaces plus 1% of the total (2)

NOTES: (1) See Sentence 3.1.3.1.1 of this By-law.
(2) See Sentence 3.1.3.1.2 of this By-law.
(3) *deleted by 0018-2021.*

3.1.3.1.1 Where only one **accessible parking space** is required, a Type A **accessible parking space** shall be provided. *(0018-2021)*

3.1.6.5 Required Number of Bicycle Parking Spaces

3.1.6.5.1 Required Number of Bicycle Parking Spaces for Residential Uses

Off-**street bicycle parking spaces** for residential **uses** shall be provided in accordance with Table 3.1.6.5.1 - Required Number of Bicycle Parking Spaces for Residential Uses.

Table 3.1.6.5.1 - Required Number of Bicycle Parking Spaces for Residential Uses

Column	A	B	C
Line 1.0	**TYPE OF USE**	**BICYCLE PARKING - CLASS A**	**BICYCLE PARKING - CLASS B**
2.0	**Apartment** and **stacked townhouse** without exclusive **garages**	0.6 spaces per unit	The greater of 0.05 spaces per unit or 6.0 spaces
3.0	**Apartment** and **stacked townhouse** without exclusive **garages** (within CC1 to CC4 and CCO zones)	0.8 spaces per unit	The greater of 0.1 spaces per unit or 6.0 spaces
4.0	**Long-Term Care Building**	0.2 spaces per 100 m^2 **GFA - residential**	0.2 spaces per 100 m^2 **GFA - residential**
5.0	**Long-Term Care Building** (within CC1 to CC4 and CCO zones)	0.3 spaces per 100 m^2 **GFA - residential**	0.3 spaces per 100 m^2 **GFA - residential**
6.0	**Retirement Building**	0.3 spaces per unit	The greater of 0.03 spaces per unit or 6.0 spaces
7.0	**Retirement Building** (within CC1 to CC4 and CCO zones)	0.4 spaces per unit	The greater of 0.05 spaces per unit or 6.0 spaces

3.1.6.6 Required Number of Bicycle Parking Spaces for Non-Residential Uses

Off-street **bicycle parking spaces** for non-residential **uses** shall be provided in accordance with Table 3.1.6.6 - Required Number of Bicycle Parking Spaces for Non-Residential Uses.

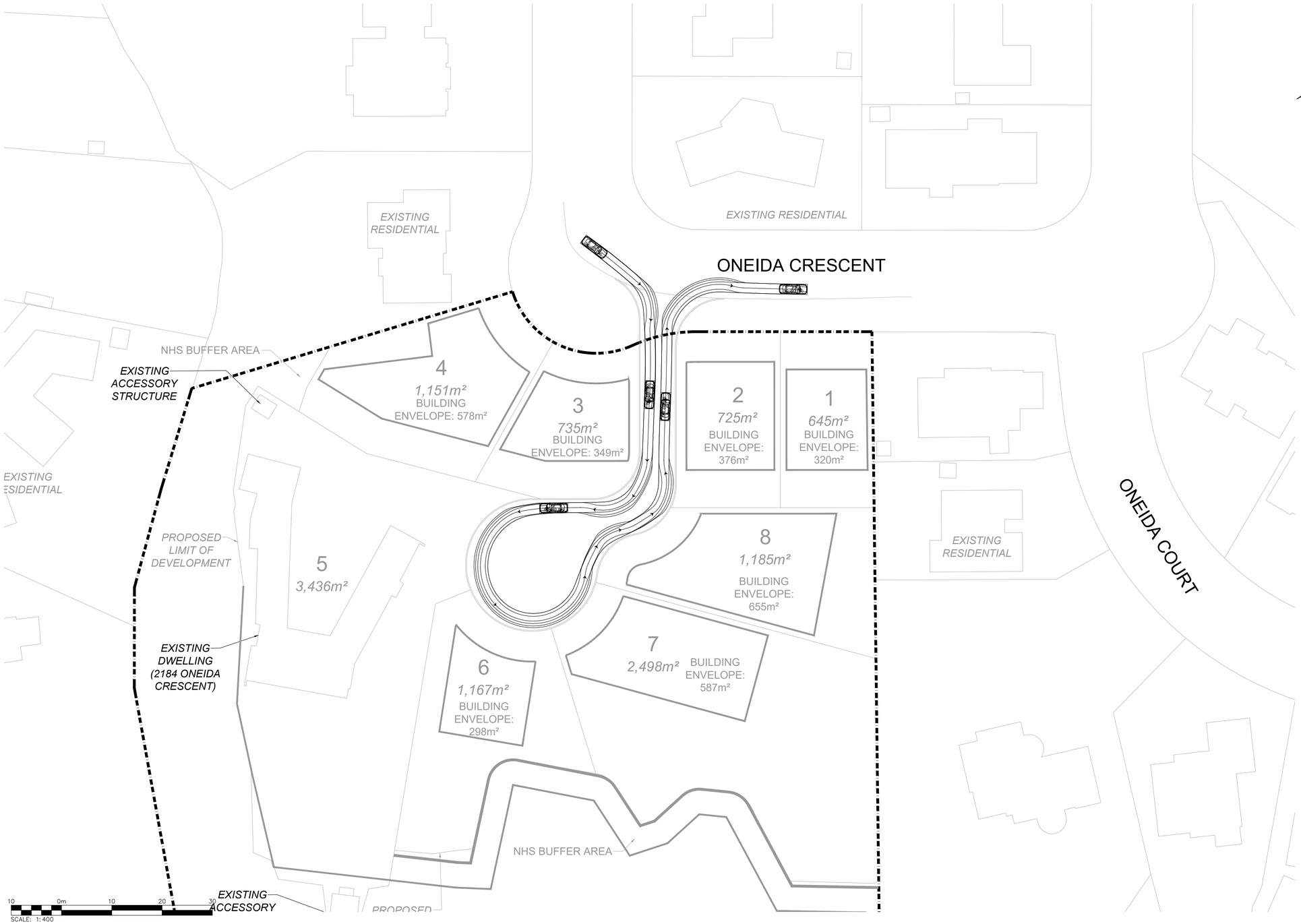
Table 3.1.6.6 - Required Number of Bicycle Parking Spaces for Non-Residential Uses

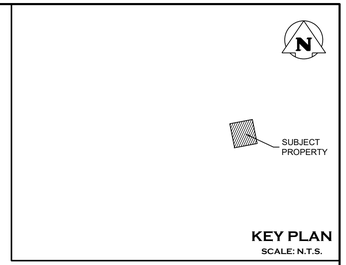
Column	A	B	C
Line 1.0	**TYPE OF USE**	**BICYCLE PARKING - CLASS A**	**BICYCLE PARKING - CLASS B**
2.0	**Active Recreational Use**, **Community Centre**, **Hospital**, **Library**, **Place of Religious Assembly**, and **Recreational Establishment**	0.1 spaces per 100 m^2 **GFA - non-residential**	0.1 spaces per 100 m^2 **GFA - non-residential**
3.0	**Active Recreational Use**, **Community Centre**, **Hospital, Library**, **Place of Religious Assembly**, and **Recreational Establishment** (within CC1 to CC4 and CCO zones)	0.3 spaces per 100 m^2 **GFA - non-residential**	0.3 spaces per 100 m^2 **GFA - non-residential**

Table 3.1.6.6 continued on next page

APPENDIX K

Vehicle Circulation Diagrams





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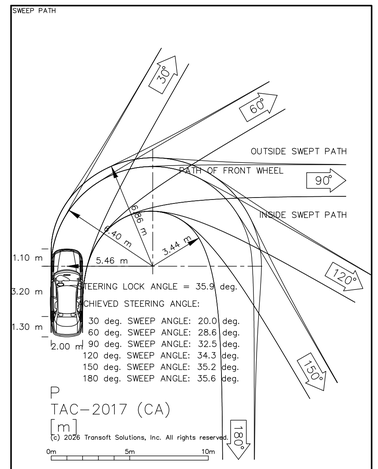

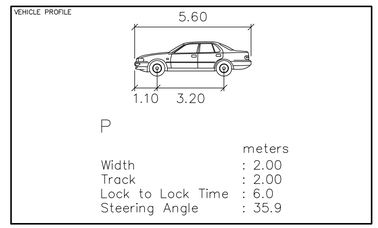

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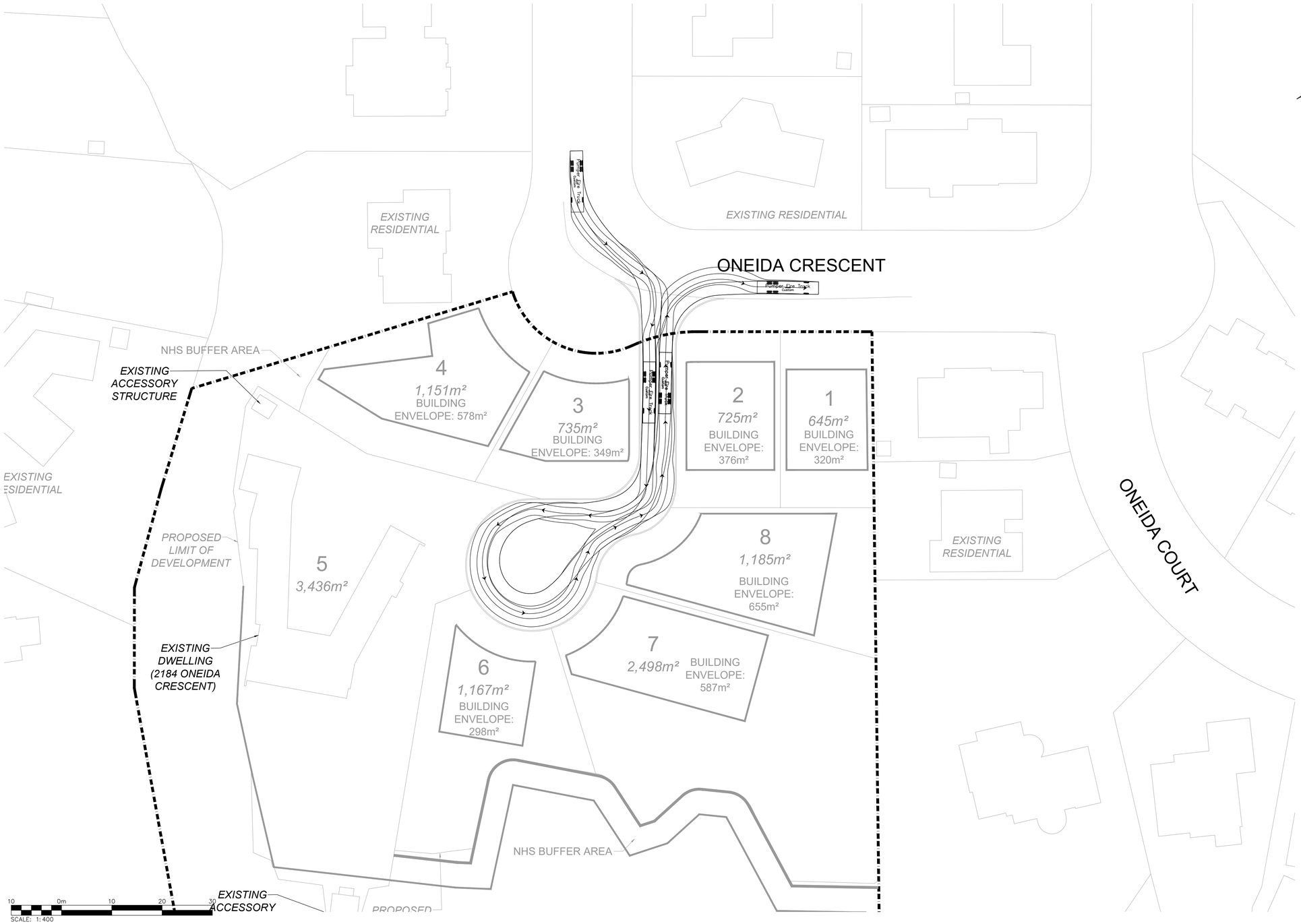

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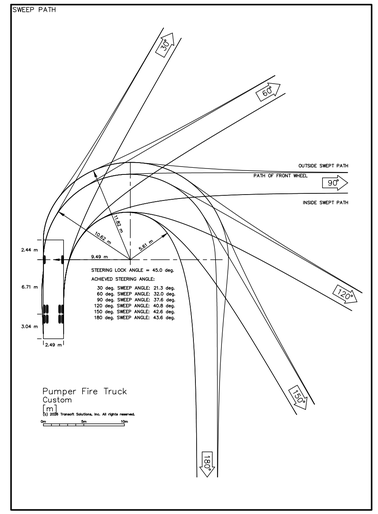

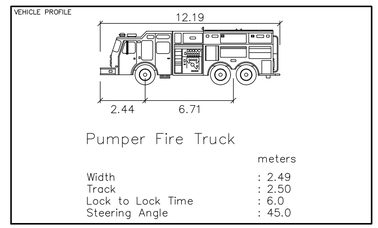

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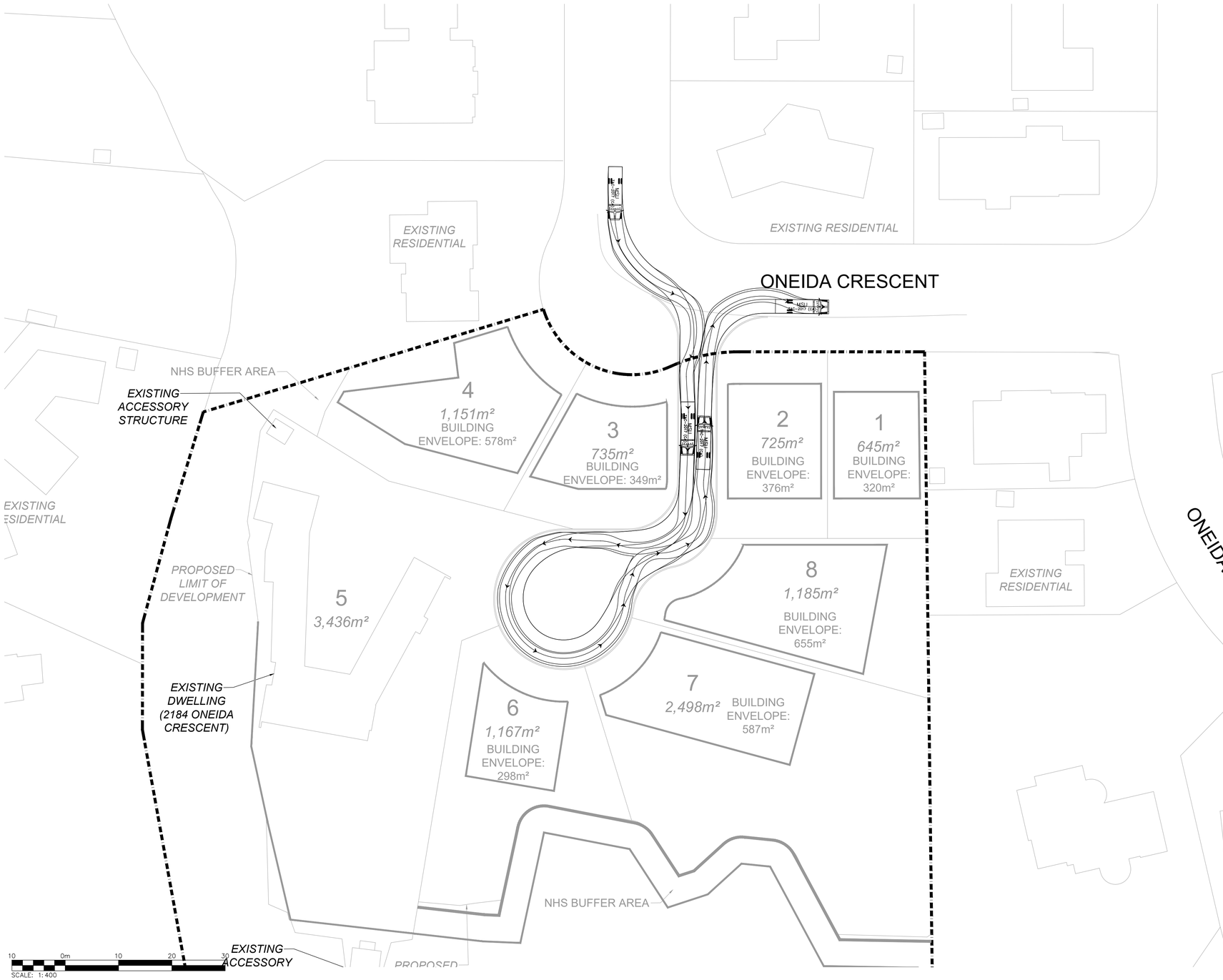

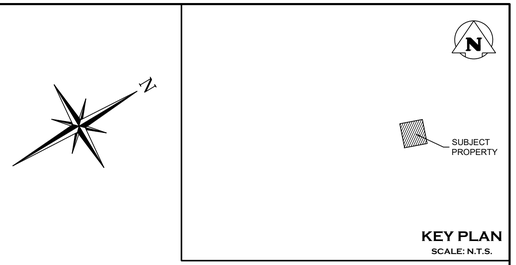

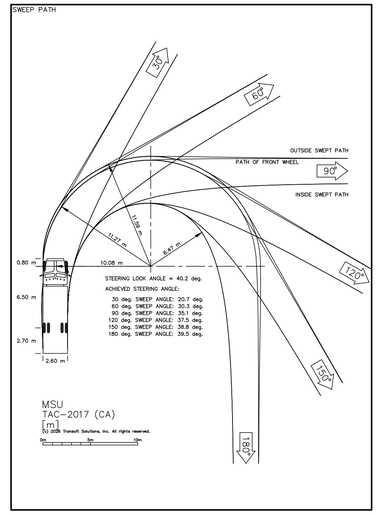

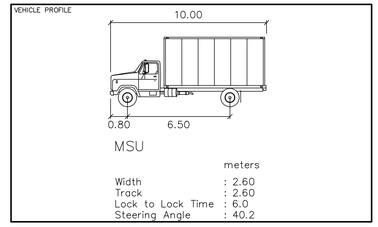

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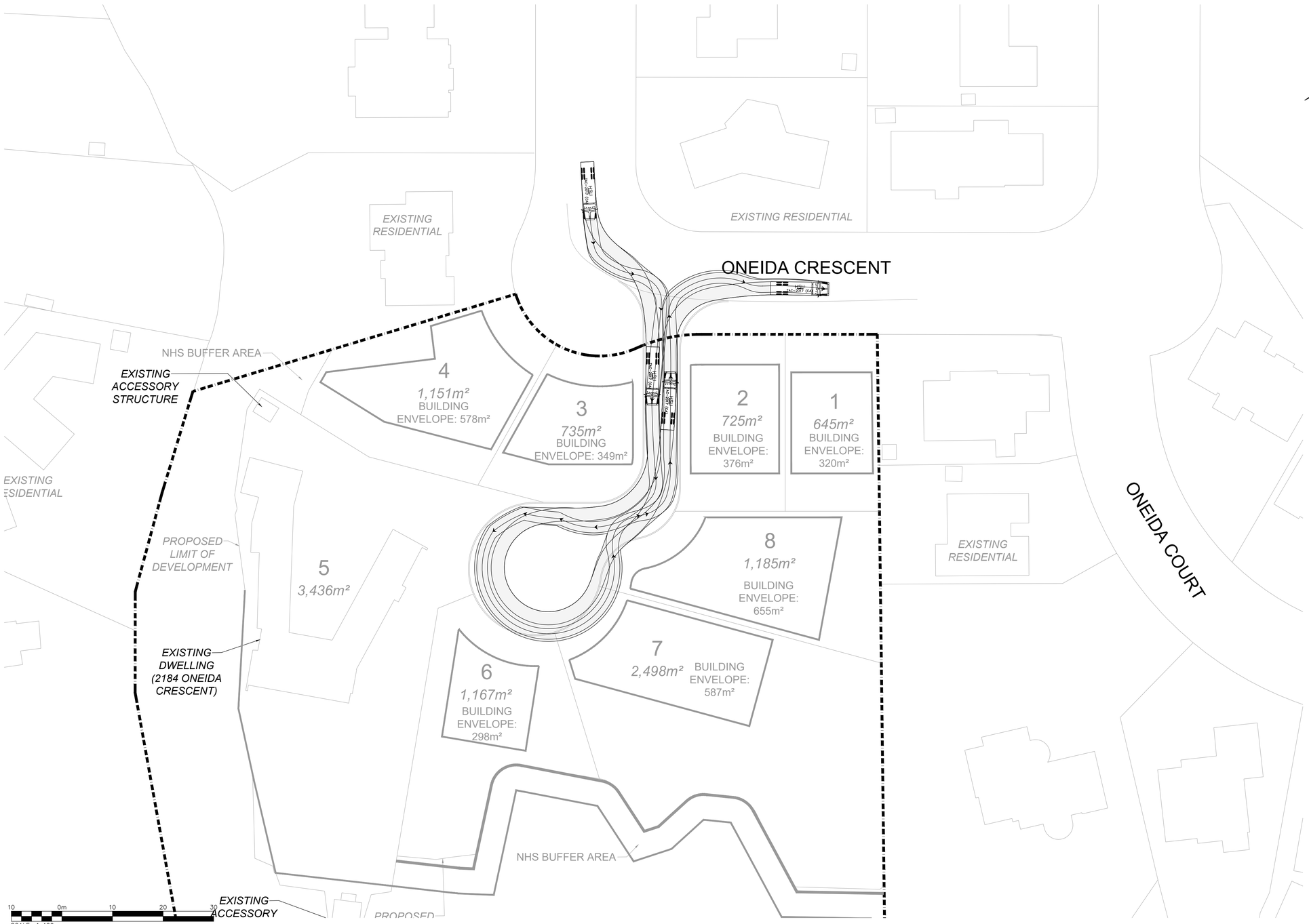

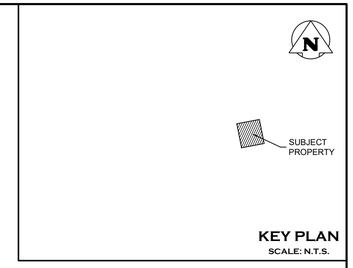

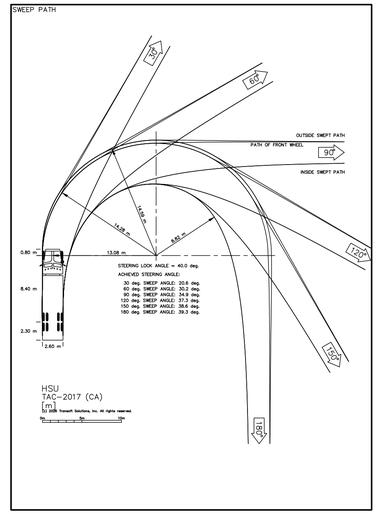

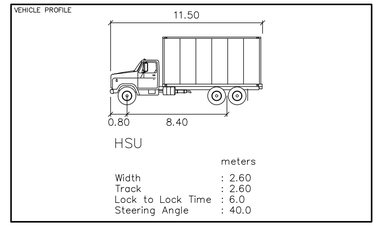

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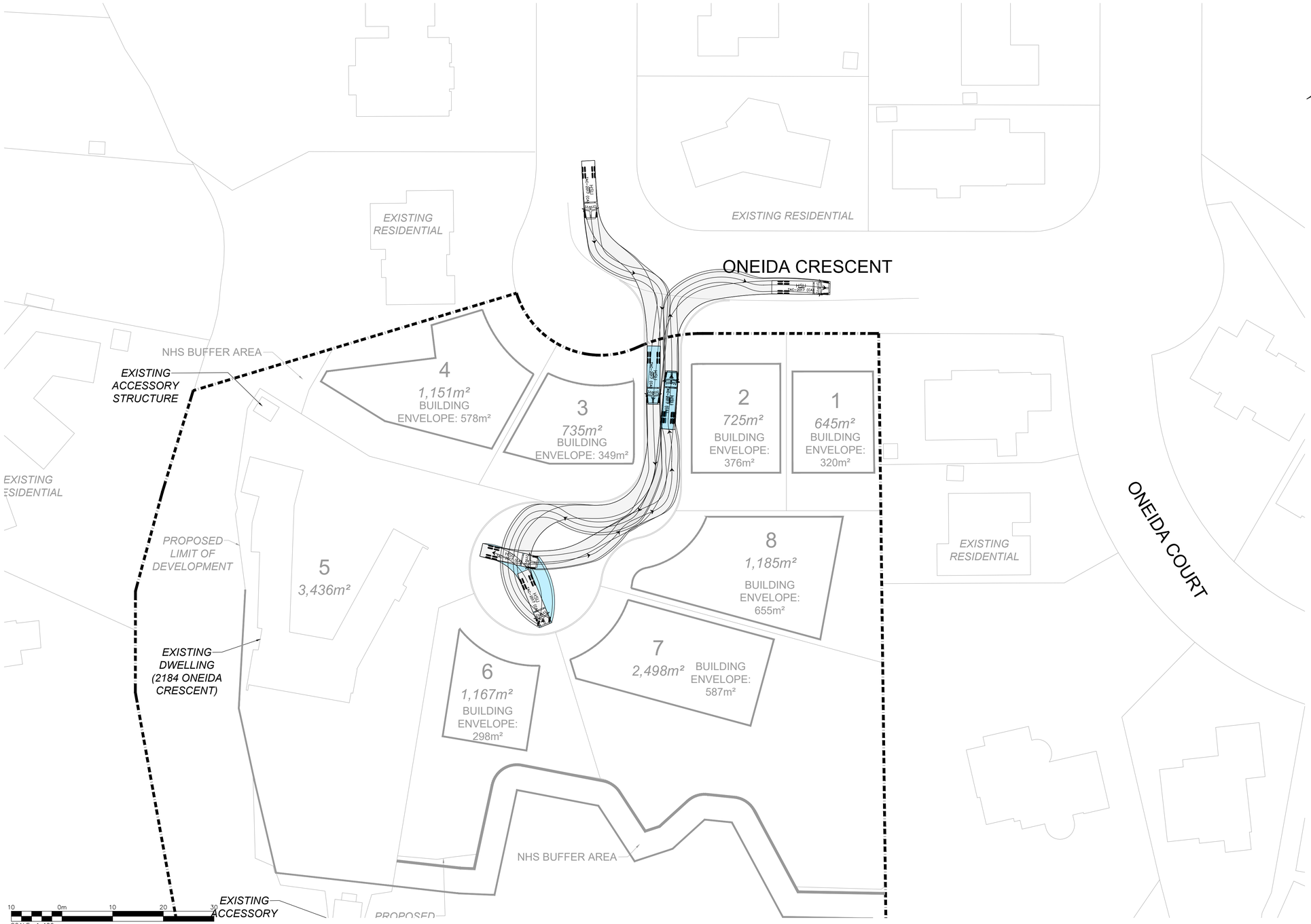

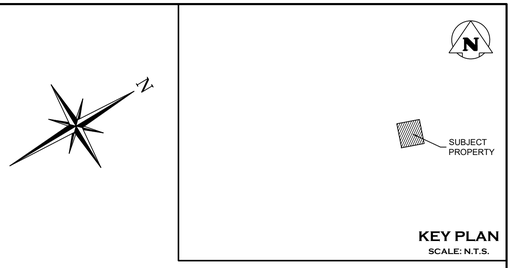

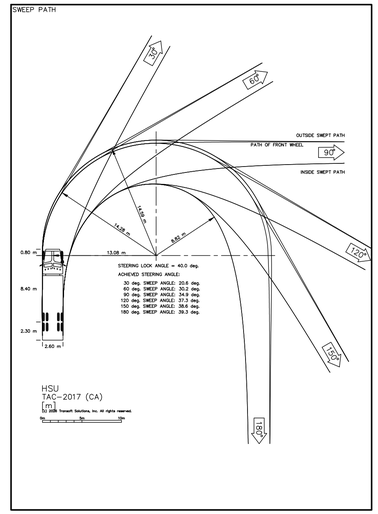

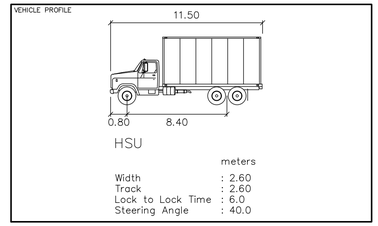

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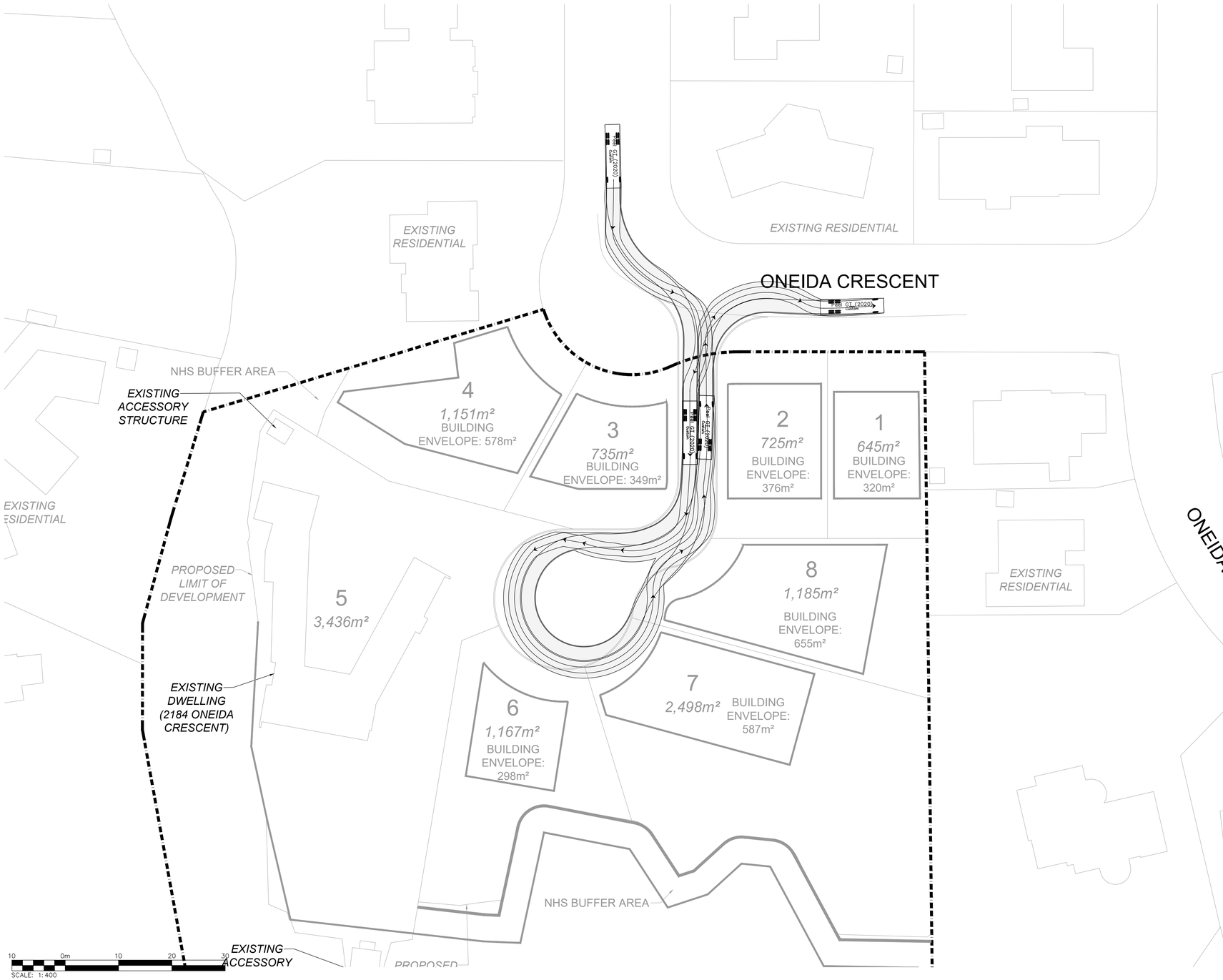

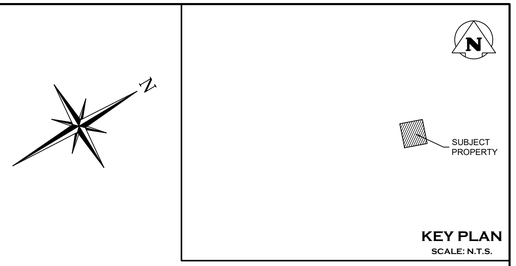

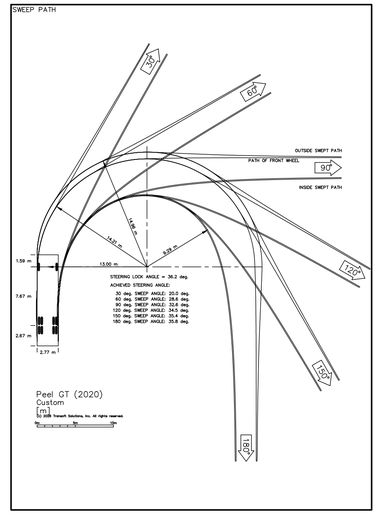

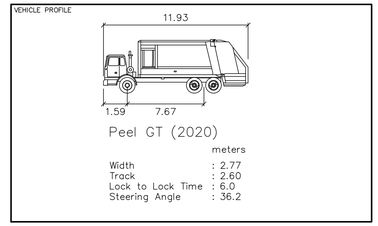

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TBM#3–

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No.	ISSUE	DATE: MMM/DD/YYYY
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Engineer

Engineer

PRELIMINARY
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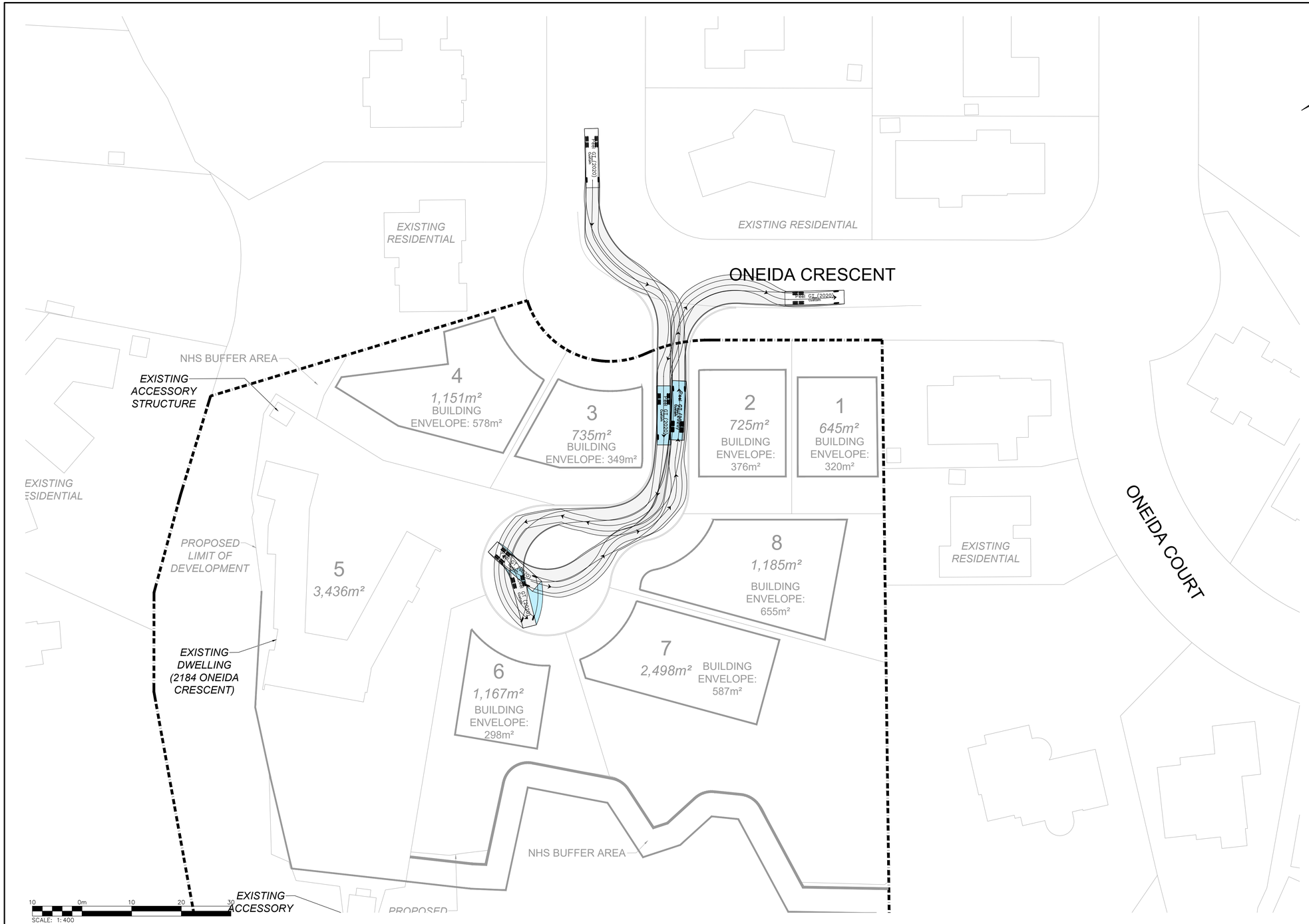
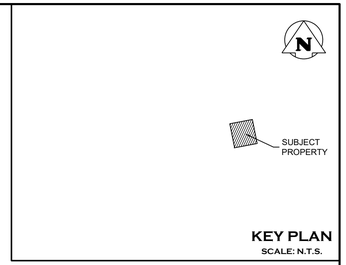
Project
2184 & 2194 ONEIDA CRESCENT
CITY OF MISSISSAUGA
REGION OF PEEL

Drawing
VEHICLE MANEUVERING ANALYSIS
GARBAGE TRUCK

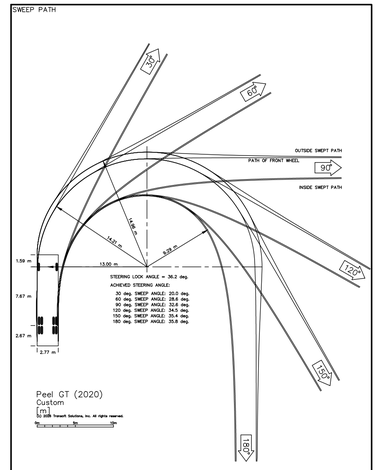
CROZIER CONSULTING ENGINEERS

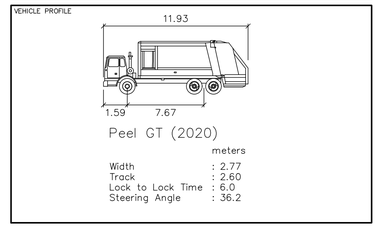
Drawn By	Design By	Project
M.P.	M.P.	2958–7552
Check By	Check By	Drawing
R.K./I.L.	R.K./I.L.	T–106





KEY PLAN
SCALE: N.T.S.





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R.K./I.L.	R.K./I.L.	T–107