Proposed Residential Development
97 Bower Street, Acton, ON

Transportation Impact Study

Paradigm Transportation Solutions Limited

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Project Summary

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Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct a Transportation Impact Study for a proposed residential development located at the municipal address of 97 Bower Street in Acton, Town of Halton Hills. The study is in support of Official Plan Amendment (OPA), Zoning By-law Amendment (ZBA), and Site Plan Approval (SPA) applications.

This study provides an assessment of the existing transportation networks, a description of the proposed development, the development and analysis of future traffic forecasts, recommendations for future transportation requirements and/or considerations, if any. Forecasting and analysis is undertaken for the 2028 and 2033 horizon years which represent the anticipated full build-out year, and a period of five years beyond full build-out, respectively.

This study also contains the development of a comprehensive Transportation Demand Management (TDM) plan, a review and assessment of the proposed parking supply, a review of the site plan regarding access and circulation, and the development of a Pavement Marking and Signage Plan (PMSP).

The findings, conclusions, and recommendations of this study are summarized below and outlined in further detail in the body of the report.

Proposed Development

The subject site is located at the municipal address of 97 Bower Street in Acton, Town of Halton Hills. The site is located adjacent and sits just outside the boundary of the Acton Downtown Area; however, the site is located within the defined Acton GO Major Transit Station Area (MTSA) limits.

The subject lands are currently vacant. The property owner proposes to construct a five-storey residential building providing a total of 80 apartment dwelling units. The detailed dwelling unit breakdown is as follows:

- Studio: 8 units;
- One-bedroom: 20 units;
- One-bedroom + Den: 22 units;

- Two-bedroom + Den: 18 units; and
- Three-bedroom: 12 units.

A pick-up/drop-off (PUDO) area is provided on-site adjacent to the principal building entrance, in addition to providing a turnaround provision at the rear of the site in the form of a roundabout.

Vehicle access is proposed via a single full-movement driveway connection with Bower Street, which is proposed to be aligned across from Frederick Street.

A total of 92 parking spaces are proposed to serve the development. Parking would be provided via a one-level underground parking structure and at-grade parking. Parking would be designated as a total of 80 resident spaces and 12 visitor spaces. Additionally, a total of 38 resident long-term bicycle parking spaces are provided on-site. Short-term bicycle parking is anticipated to be provided on-site, subject to confirmation.

Conclusions

Based on the investigations carried out, it is concluded that:

- **Base Year (2025) Traffic Conditions:** the study area intersections are currently operating at acceptable levels of service and well within capacity (v/c < 0.85) during the weekday AM and PM peak hours;
- **Background Traffic Conditions (without the proposed development):** the study area intersections are forecast to continue to operate at acceptable levels of services and well within capacity (v/c < 0.85) under the 2033 horizon. The exception includes the following movements:
  - The westbound shared left-turn/through movement at Main Street and Mill Street reports v/c ratios of 0.87 and 0.90 during the AM peak hour under 2028 and 2033 horizons, respectively.

    Under the existing signal timing plan, the movement is reported to be approaching capacity. The identified critical movement is determined not to be a major issue as the movement can be mitigated/improved through optimization of signal timing splits within the existing cycle length; and
  - The southbound shared left-turn/through/right-turn movement at Mill Street and Eastern Avenue/Bower Street operates at a LOS F during the PM peak hour under the 2028 and 2033 horizons.

While the movement would be characterized by LOS F, this is not considered a critical issue as the southbound shared movement is forecast to operate well within capacity (v/c = 0.20 under 2028, and 0.28 under 2033). This is not an unusual condition where a minor road operating under stop control intersects with a major road.

- **Development Trip Generation:** with full development of the subject site, it is forecast to generate 24 automobile trips during the weekday AM peak hour, and 32 automobile trips during the weekday PM peak hour. The proposed development is considered a low trip generator;
- **Total Traffic Conditions (with the proposed development):** the net impact of the proposed development is considered minor. All study area intersections are forecast to operate at acceptable levels of service and within capacity under the 2033 horizon.

  The previously identified critical movements under background traffic conditions would continue to be identified as critical movements under total traffic conditions.

  No additional critical movements are identified with the addition of site-generated traffic.
- **Site Traffic Impact:** the additional site-generated traffic is minor and not anticipated to result in any adverse impact to the adjacent transportation network.

  No intersection geometric improvements or traffic control upgrades have been identified/required to accommodate the proposed residential development;
- **Collision Review:** review of historical collision data for the study area intersections indicates the reported collisions and the resultant impact types are generally unremarkable, with no reported high impact collisions or reported fatal collisions.

  The most common collision impact type reported were rear-end and turning movement collisions. Based upon our review, the majority of reported collisions were due to driver error, and not a function of the road or intersection design, that is, poor driver judgement, not obeying traffic rules/signage, driver inattentiveness, etc.;
- **Transportation Demand Management (TDM):** a TDM Plan for the proposed development has been prepared and applicable TDM measures/initiatives have been identified which would be implemented by the applicant/site Owner.

The implementation of the TDM Plan is a vital component in reducing single-occupancy vehicle (SOV) travel, and leveraging the existing and planned transit and active transportation infrastructure, which in turn reduces the number of site-generated vehicular trips and the associated demand for parking;

- **Parking Review:** rationale and supporting data have been documented to demonstrate the proposed parking rate/parking supply will be adequate to serve the proposed development.

  Justification is provided through new provincial legislation (Bill 185), forecast parking demand based upon average vehicle ownership data, policies/parking requirements of other similar municipalities having lower parking rates, the surrounding site context, the implementation of the proposed TDM measures/initiatives which would further reduce the on-site parking demands, and available on-street parking spaces.

- **Functional Traffic Design Study:** a functional traffic design study was conducted to ensure proposed site access design complies with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). No major issues or concerns are identified; and

- **Vehicle Maneuvering:** a functional review of the site plan and underground plan was conducted. No major conflicts are identified, and it was confirmed the access driveway, loading area, and parking layouts have been designed accordingly for the anticipated design vehicles. That is, all vehicles expected on-site can ingress, circulate/traverse, and egress the site without and conflicts.

Recommendations

Based on the findings of this study, the following is recommended:

- The Town of Halton Hills recognize the conclusions drawn above;
- From a transportation perspective, the planning applications sought should be approved as the development is determined to have a minor impact on the adjacent transportation network, and the proposed parking supply provisions will adequately serve the development given the adjacent supporting transit and active transportation infrastructure/networks; and
- The proposed Transportation Demand Management (TDM) Plan should be implemented.

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1 Introduction

1.1 Overview

This study has been prepared in support of Official Plan Amendment (OPA), Zoning By-law Amendment (ZBA), and Site Plan Approval (SPA) applications to assess the transportation impact of a proposed residential development at the municipal addresses of 97 Bower Street in the Town of Halton Hills. The site is located adjacent and just outside the boundary of the Acton Downtown Area; however, it is noted the subject site is located within the defined limits of the Acton GO Major Transit Station Area (MTSA).

Figure 1.1 illustrates the site location and study area.

1.2 Purpose and Scope

The purpose of this report is to identify and address the potential traffic impacts resulting from the proposed development. The scope of the study developed in consultation with the Town of Halton Hills is as follows:

- A study area comprising the following intersections:
  - Main Street and Mill Street (signalized);
  - Mill Street and Frederick Street (unsignalized);
  - Mill Street and Bower Street/Eastern Avenue (unsignalized);
  - Main Street North and St Alban's Drive/Knox Street (unsignalized);
  - Bower Street and Willow Street North (unsignalized);
  - Mill Street East and Willow Street (unsignalized); and
  - Bower Street and Frederick Street/Proposed Site Access (unsignalized).
- Traffic forecasts for the 2028 (anticipated full build-out year) and 2033 (five years beyond full build-out) horizon years; and
- Analysis time periods including the weekday AM and PM peak hours (i.e., typical commuter periods).

The methodology used in the analysis is summarized below:

- Estimate the future peak hour background traffic for the future horizon years based upon growth rates as confirmed by the Town during pre-study consultation. Town staff also confirmed

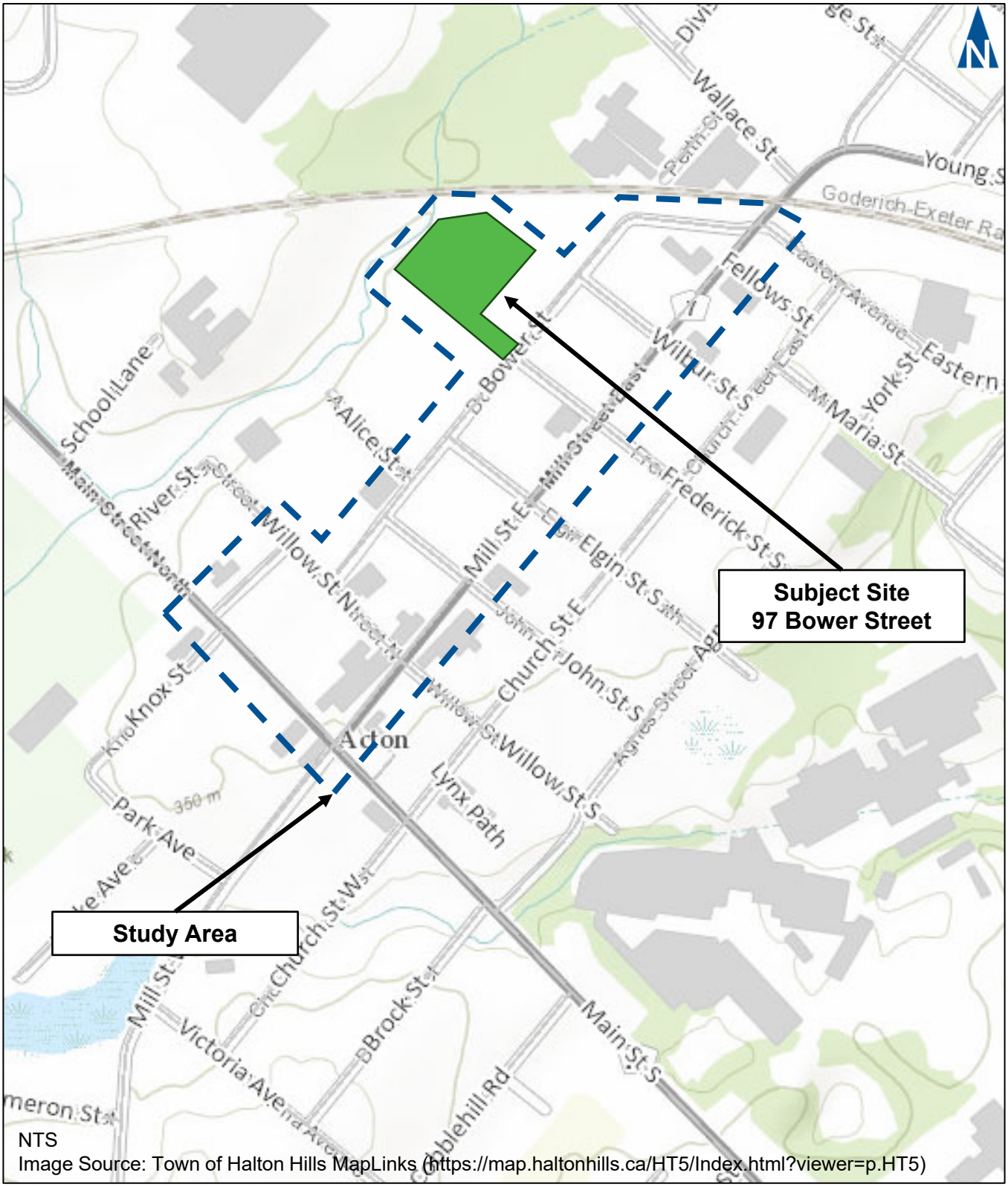
two other area background developments to include as part of the background traffic forecasts;

- Estimate the net increase in traffic due to the proposed residential development;
- Combine the future background traffic with the net increase in site traffic for the future horizon years;
- Analyze the future peak hour intersection operations for the future background and total traffic conditions;
- Determine the net impact on operational performance due to the site traffic, and the need for any road and/or operational traffic control improvements to address any identified impacts;
- Develop a comprehensive Transportation Demand Management (TDM) plan for implementation;
- Review the proposed parking supply against the municipal Zoning By-law (ZBL), and determine the adequacy of the proposed parking supply;
- Conduct a sight distance review of the proposed driveway connection with Bower Street following the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) requirements;
- Review the proposed site access design and internal layout/circulation for anticipated design vehicles; and
- Prepare a Pavement Marking and Signage Plan (PMSP) to illustrate the locations and details of all signs and pavement markings on site.

This study has been carried out in general accordance with the Halton Region Transportation Impact Study Guidelines (January 2015)[1].

This study has been completed in accordance with direction provided by Town staff based upon pre-study consultation. **Appendix A** contains the pre-study consultation correspondence with Town staff for reference.

[1] Halton Region, *Transportation Impact Study Guidelines,* January 2015.



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Image Source: Town of Halton Hills MapLinks (https://map.haltonhills.ca/HT5/Index.html?viewer=p.HT5)

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Site Location and Study Area

2 Proposed Development

The subject site is located at the municipal address of 97 Bower Street in Acton, Town of Halton Hills. The site is located adjacent and just outside the boundary of the Acton Downtown Area, and within the limits of the Acton GO Major Transit Station Area (MTSA).

The subject lands are currently vacant. The property owner proposes to construct a five-storey residential building providing a total of 80 apartment dwelling units. The detailed dwelling unit breakdown is as follows:

- Studio: 8 units;
- One-bedroom: 20 units;
- One-bedroom + Den: 22 units;
- Two-bedroom + Den: 18 units; and
- Three-bedroom: 12 units.

A pick-up/drop-off (PUDO) area is provided on-site adjacent to the principal building entrance, in addition to providing a turnaround provision at the rear of the site in the form of a roundabout.

Vehicle access is proposed via a single full-movement driveway connection with Bower Street, aligned across from Frederick Street.

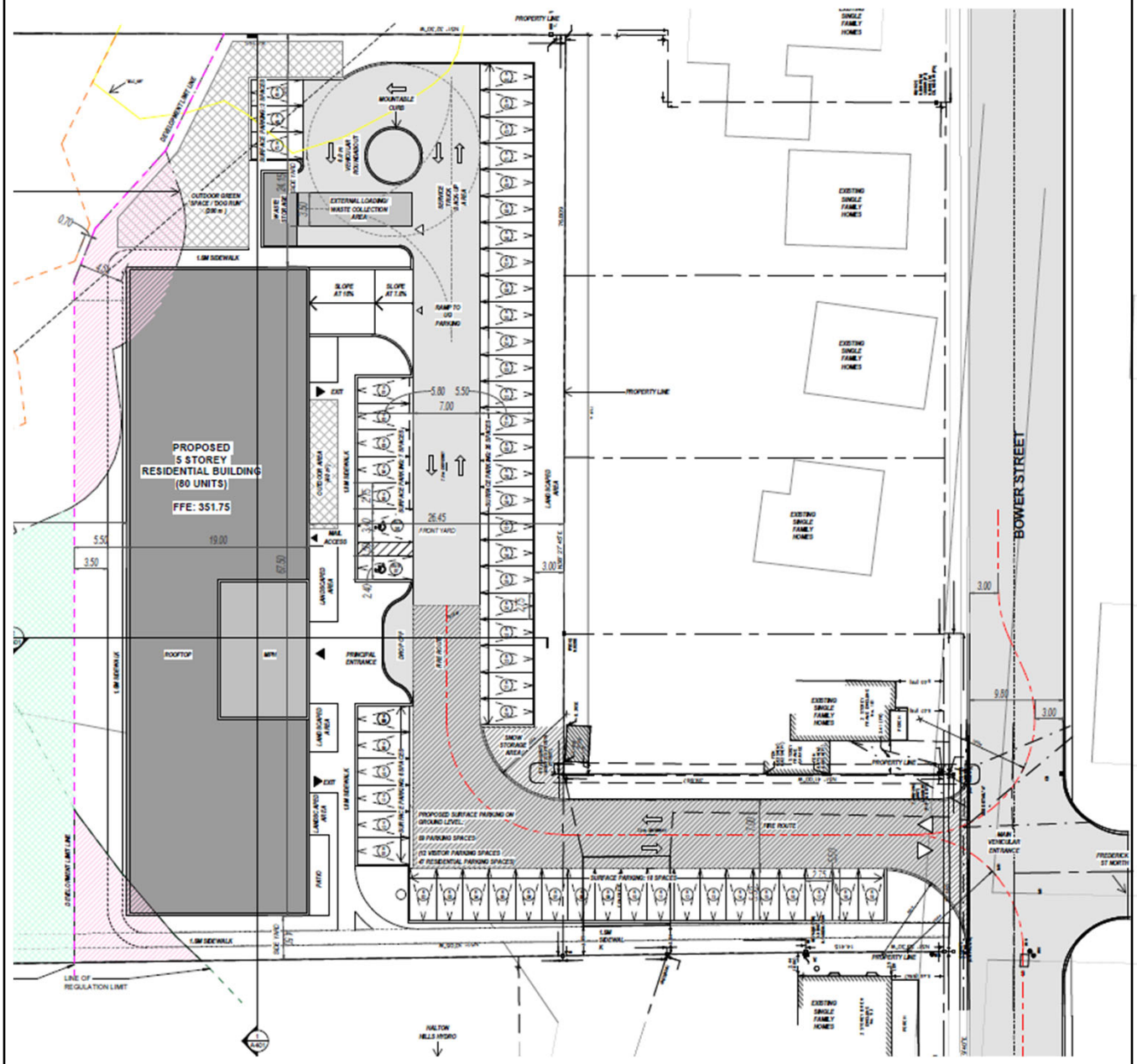
A total of 92 parking spaces are proposed to serve the development. Parking would be provided via a one-level underground parking structure and at-grade parking. A total of 80 resident spaces and 12 visitor spaces are proposed.

Additionally, a total of 38 resident long-term bicycle parking spaces are proposed to be provided on-site. Short-term bicycle parking is anticipated to be provided on-site, subject to confirmation.

The proposed development will be served by an internal sidewalk connecting with municipal network on Bower Street. This includes 1.8-metre and 1.5-metre wide sidewalk provisions.

For assessment purposes, the assumed full build-out and occupancy of the proposed development will occur by 2028.

Figure 2.1 illustrates the proposed development concept site plan.



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Image Source: Site Plan developed by 4 Architecture Inc. (August 2025)

Concept Site Plan

3 Existing Conditions

3.1 Roads and Traffic Control

The characteristics of the roads in the vicinity of the subject site are described below. Reference has been made to the Town of Halton Hills *Official Plan (OP) Schedule B1 – Functional Plan of Major Transportation Facilities*[2].

- **Main Street** is a north-south multi-purpose arterial with a two-lane urban cross section. Between Knox Street and Mill Street, Main Street provides a three-lane urban cross section (one lane in each direction and a centre two-way left-turn lane).The posted speed limit is 50 km/h within the study area. On-street parking is not permitted within the study area limits;
- **Mill Street** is an east-west roadway with a two-lane urban cross section. West of Main Street, Mill Street is classified as a collector, and east of Main Street, Mill Street is classified as a multi-purpose arterial. No posted speed limit is noted within the study area; therefore, it is assumed the statutory speed limit of 50 km/h governs. It is noted the posted maximum speed limit transitions to 40 km/h west of Park Avenue.

  On-street parking is generally permitted on both sides of Mill Street (east of Main Street) for a maximum of two hours between 8 AM to 6 PM, Monday to Friday.

  It is noted the Kitchener GO rail line crosses Mill Street approximately 15 metres east of Eastern Avenue. Signage, pavement marking delineations, and flashing signal lights are provided on the eastbound and westbound approaches of the rail crossing;
- **Frederick Street** is a north-south local road with a two-lane urban cross section. No posted speed limit is noted within the study area; therefore, it is assumed the statutory speed limit of 50 km/h governs. On-street parking is permitted on both sides of Bower Street;
- **Bower Street** is an east-west local road with a two-lane urban cross section. The posted speed limit is 40 km/h. On-street parking is permitted on the north side of Bower Street and on the south side of Bower Street east of Elgin Street North;
- **Eastern Avenue** is a north-south local road with a two-lane urban cross section within the study area. No posted speed limit

[2] Town of Halton Hills, *Official Plan Schedule B1 – Function Plan of Major Transportation Facilities*, Consolidation April 30, 2024.

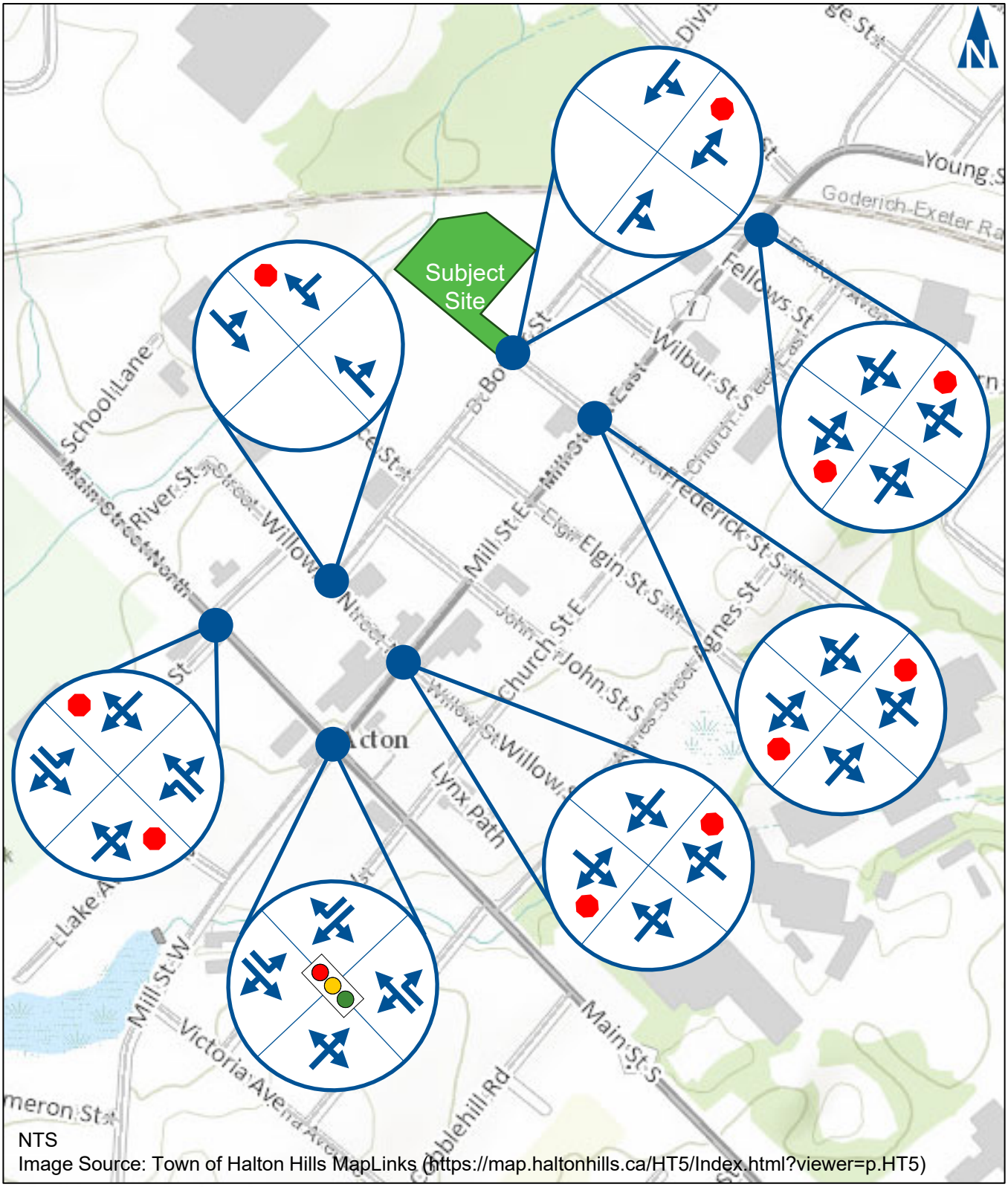
is noted within the study area; therefore, it is assumed the statutory speed limit of 50 km/h governs. On-street parking is restricted along Eastern Avenue;

- **Knox Street** is an east-west local road with a two-lane urban cross section. No posted speed limit is noted within the study area; therefore, it is assumed the statutory speed limit of 50 km/h governs. On-street parking is only permitted on the north side of the roadway;
- **St Alban's Drive** is an east-west local road connecting Main Street and Willow Street. The roadway provides a two-lane urban cross section. No posted speed limit is noted within the study area; therefore, it is assumed the statutory speed limit of 50 km/h governs. On-street parking is only permitted on the south side of the roadway; and
- **Willow Street** is a north-south local road with a two-lane urban cross section. No posted speed limit is noted within the study area; therefore, it is assumed the statutory speed limit of 50 km/h governs. On-street parking is generally permitted on both sides of Willow Street (within the study area) for a maximum of two hours between 8 AM to 6 PM Monday to Friday.

Figure 3.1 illustrates the existing lane configurations and traffic control at the study area intersections.

It is noted for the intersection of Main Street North with Knox Street and St Alban's Drive, we have assessed this as a single four-legged intersection based upon observations conducted. While the Knox Street and St Alban's Drive approaches are slightly offset, it was observed to operate as a typical intersection.

Similarly, for the intersection of Mill Street with Bower Street and Easter Avenue, we have assessed this as a single four-legged intersection based upon observations conducted. While the Bower Street and Eastern Avenue approaches are slightly offset, it was observed to operate as a typical intersection.



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Image Source: Town of Halton Hills MapLinks (https://map.haltonhills.ca/HT5/Index.html?viewer=p.HT5)

Existing Lane Configurations and Traffic Control

3.2 Transit

The Town of Halton Hills offers public transit services; however, currently municipal bus services are only available along the Steeles Avenue corridor between the Milton GO Station and the Lisgar GO Station in Mississauga.

The Government of Ontario (Metrolinx/GO Transit) provides daily inter-regional public transport in the form of bus and rail transportation in Acton.

GO Bus Service

Specifically, GO Bus Route 31 and Route 33 operate within close vicinity to the subject site.

- GO Bus Route 31 provides bus service between the Union Station Bus Terminal and University of Guelph campus.
- GO Bus Route 33 provides bus service between the York Mills Bus Terminal and University of Guelph campus.
- Both GO Bus routes operate with headways of approximately 30 minutes during peak periods, and travel along Mill Street within the study area.

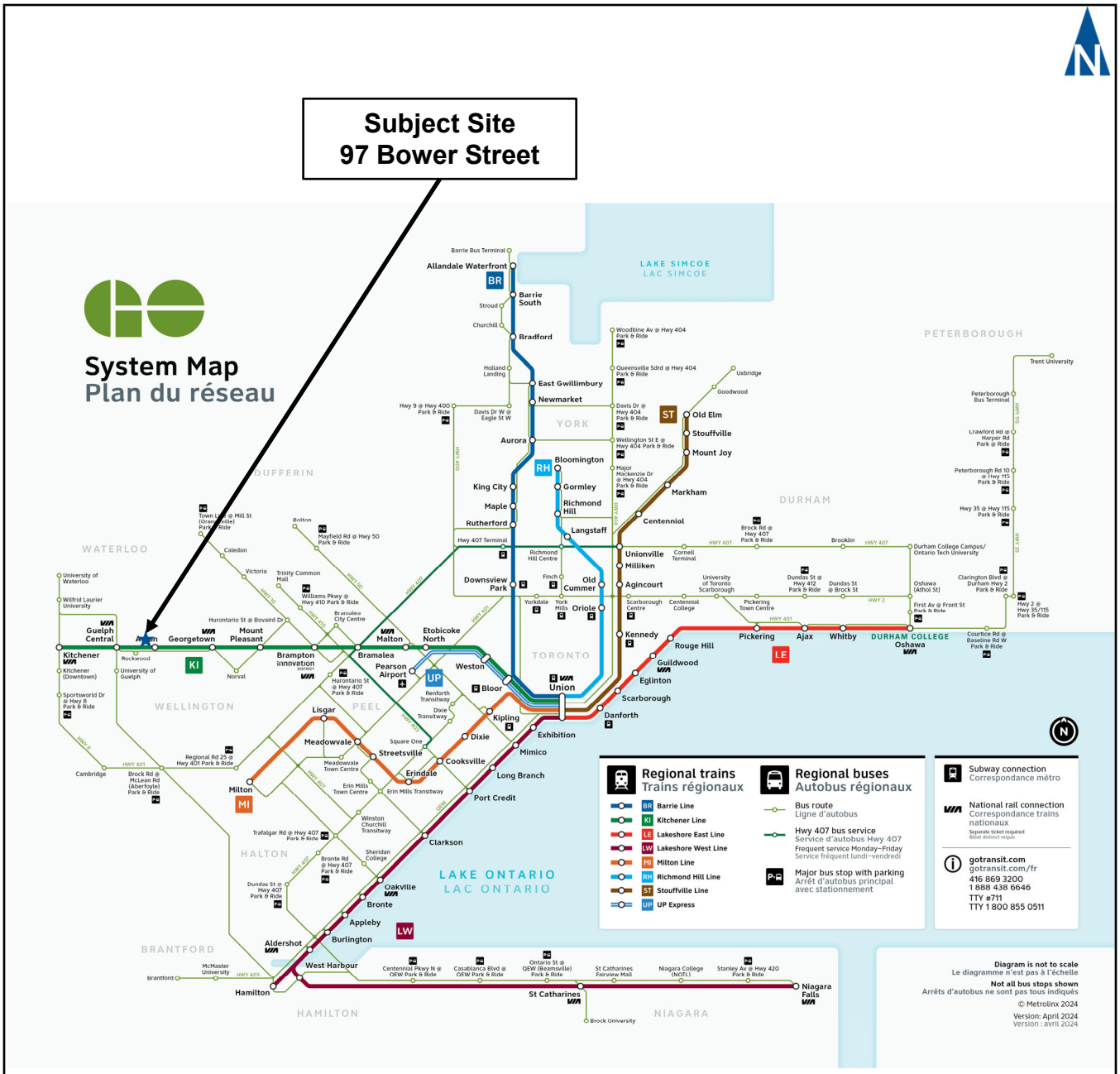
The closest GO Bus stops are located on Mill Street at Elgin Street which is approximately 150 metres (three-minute walk) from the subject site.

GO Train Service

The Acton GO Station is located approximately 300-metres (five-minute walk) from the subject site. There are seven eastbound trains during the morning peak period (7 to 10 AM) and nine westbound trains during the evening peak period (3 to 6 PM) Monday to Friday. Passengers can access the nearby communities of Georgetown, Rockwood, Guelph, and the Greater Toronto Area (GTA) via the GO Transit network.

Figure 3.2 illustrates the current GO Transit network.

It is also acknowledged the subject site is located within the Acton GO Major Transit Station Area (MTSA).



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Image Source: https://www.gotransit.com/en/system-map

Existing GO Transit Network

3.3 Active Transportation

3.3.1 Walking

Pedestrian travel is facilitated by sidewalks on both sides of all study area roadways. Overall, the existing municipal sidewalk network is continuous and well-connected.

At the signalized intersection of Main Street and Mill Street, delineated crosswalks, pedestrian push buttons, and pedestrian signal heads with countdown timers are provided on all approaches. At unsignalized intersections, delineated crosswalks are provided at all minor road approaches.

It is noted the east leg of the intersection of Mill Street and Willow Street provides a Pedestrian Crossover (PXO) with a flash duration of 18 seconds to facilitate controlled pedestrian crossings. Additionally, a Pedestrian Crossover (PXO) is also provided approximately 20 metres west of the intersection of Mill Street East and Bower Street/Eastern Avenue. A crossing guard is present at both pedestrian crossings during the AM and PM peak hours.

The subject site is located at the boundary of the Acton Downtown Area, and has a Walk Score of 79[3] and is considered “Very Walkable” which means most errands can be accomplished on foot. The locational advantage of the site serves to reduce the need for vehicle trips.

3.3.2 Cycling

No dedicated cycling facilities are currently provided on any study area roadways, requiring cycling trips to be accommodated within the travelled sections of the existing roadways.

It is noted the Town of Halton Hills *Transportation Master Plan Report* (November 2011)[4] recommends the provision of on-road cycling facilities on Main Street, Mill Street, and Eastern Avenue.

3.4 Modal Split

2022 Transportation Tomorrow Survey (TTS) data was reviewed for TTS Traffic Analysis Zone (TAZ) 5424 to understand existing travel characteristics of the subject site and surrounding areas. TAZ 5424 is bounded by Guelph Street West/Doctor Vanderbent Place to the north,

[3] https://www.walkscore.com/score/97-bower-st-acton-on-canada
[4] Town of Halton Hills, *Transportation Master Plan Report*, November 2011, p70.

Mill Street to the south, Elmore Drive to the west, and Wallace Street to the east.

The existing mode share for inbound and outbound trips during the three-hour morning (6:00 to 9:00 AM) and afternoon (3:00 to 6:00 PM) travel periods were reviewed. **Table 3.1** summarizes the existing modal split for TAZ 5424.

TABLE 3.1: TTS MODE SPLIT (TAZ 5424)

Mode	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Auto Driver	94%	85%	65%	66%
Auto Passenger	0%	1%	21%	28%
Transit	4%	1%	1%	3%
Cycle	0%	0%	0%	0%
Walk	2%	13%	13%	3%
Total	***100%***	***100%***	***100%***	***100%***

The data suggests the auto mode share (auto driver and auto passenger) accounts for 85-95% of AM and PM peak hour trips. Transit consists approximately 1-5% of all trips, while cycling trips make up 0% of the mode share, and walking trips accounts for 2-15% of all trips.

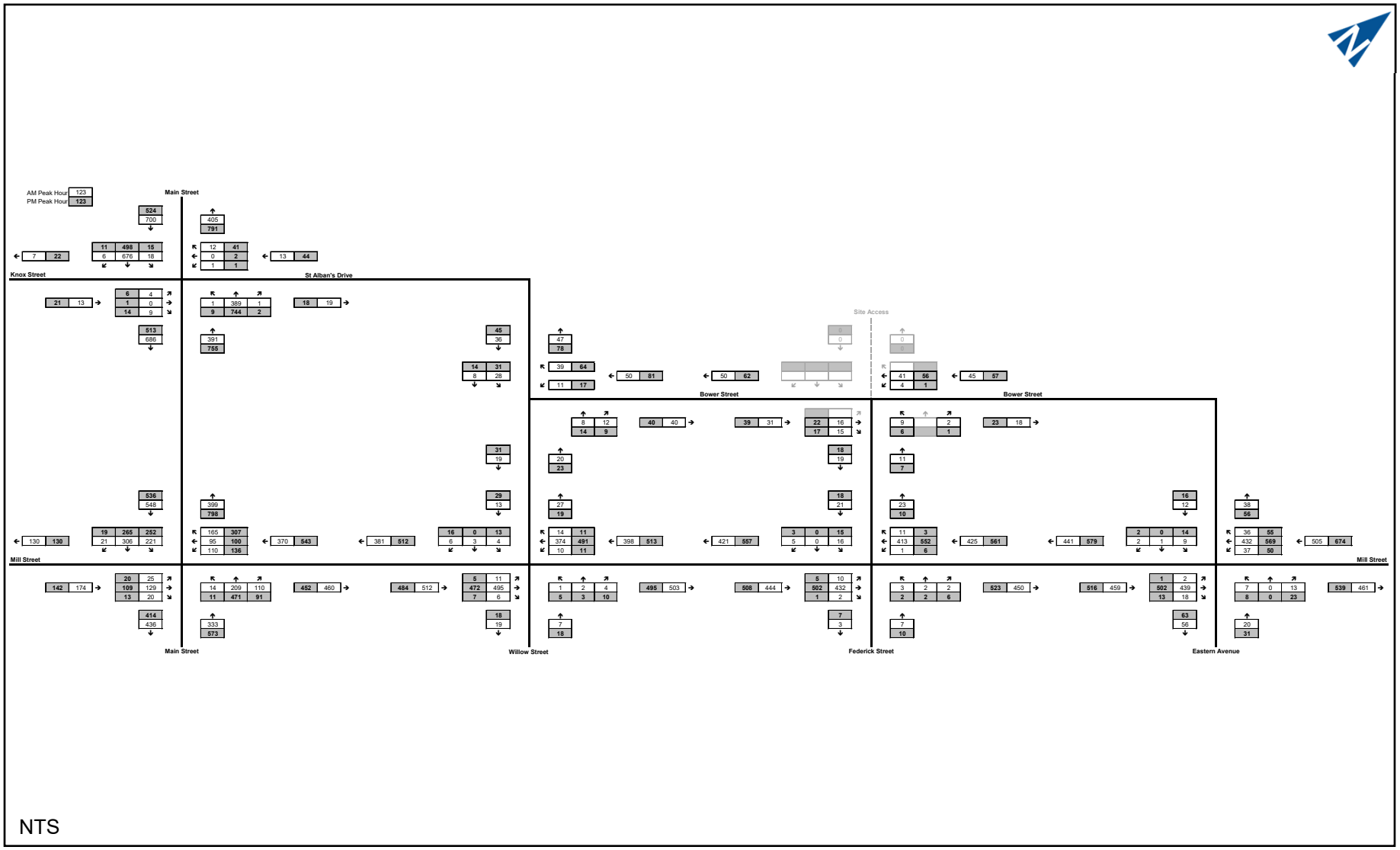
The modal split suggests that trips to and from the subject TAZ are predominately automobile based.

3.5 Traffic Volumes

To assess intersection operations, turning movement counts (TMCs) are used to quantify the movement of vehicles, trucks, buses, pedestrians, and cyclists through an intersection. Existing traffic data at an intersection or on a road section forms the foundation for operational analysis. The counts are usually collected during peak periods to complete level of service (LOS) analysis under its worst-case operating conditions.

Paradigm collected TMCs at the study area intersections on Thursday, February 27, 2025 from 7:00 AM to 7:00 PM. The data was counted in 15-minute intervals and vehicles were classified by type.

Figure 3.3 illustrates the base year (2025) weekday AM and PM peak hour traffic volumes. **Appendix B** contains the raw traffic data for reference.



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Base Year (2025) Traffic Volumes

3.6 Traffic Operations

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay related to the number of vehicles desiring to make a through or turning movement, compared to the estimated capacity for that movement.

The capacity is based on several criteria including, but not limited to, vehicle headways, intersection geometry, vehicle composition, opposing traffic flows, and for signalized intersections, signal timing. Capacity is evaluated in terms of the ratio of demand flow to capacity with an at-capacity condition represented by a volume-to-capacity (v/c) ratio of 1.00 (i.e., volume demand equals capacity).

The highest possible rating is LOS A, in which the average total delay is equal or less than 10 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the v/c ratio is greater than 1.00, the movement is classed as LOS F and improvements are usually implemented if they are feasible. LOS E is generally used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on capacity and safety considerations. It is also recognized that the guidelines for determining when improvements are necessary can vary in different municipalities.

The Halton Hills *Guidelines for the Preparation of Transportation Impact Studies and Parking Justification Studies for Development Applications*[5] identifies the following criteria for critical movements:

Signalized intersections:

- v/c ratios for overall intersection operations, through movements, or shared through/turning movements are 0.85 or above;
- v/c ratios for exclusive movements are 0.95 or above; or
- Queues for an individual movement are projected to exceed available turning lane storage.

[5] Halton Hills, *Guidelines for the Preparation of Transportation Impact Studies and Parking Justification Studies for Development Applications*, August 2022, p21.

Unsignalized intersections:

- LOS, based on average delay per vehicle, on individual movements exceeds LOS E; or
- The estimated maximum queue length for an individual movement exceeds the available queue storage.

To assess the base year peak hour automobile conditions, a level of service analysis was conducted using Synchro software, which implements the methods of the Highway Capacity Manual (HCM). The Synchro analyses were conducted according to the Halton Region *Transportation Impact Study Guidelines* (January 2015) document. The key parameters include:

- Existing lane configurations;
- Heavy vehicle percentages derived from existing traffic count data;
- Conflicting pedestrian volumes derived from existing traffic count data;
- Calculated intersection peak hour factors (PHF), which facilitates an assessment of the busiest 15-minute period within the peak hour;
- Existing signal timing plan data as obtained from Town of Halton Hills, which are included for reference in **Appendix B.**

  It is noted two scenarios have been assessed for the intersection of Mill Street and Willow Street. As the east leg of the intersection has an adjacent pedestrian crossover with flashing lights (18-second duration), the intersection was analyzed operating as unsignalized with two-way stop control (without accounting for the pedestrian crossover), and as a signalized intersection, which incorporates the 18-second pedestrian crossing phase. The signalized scenario represents a conservative analysis (i.e., errs on the high side), as the pedestrian phase would occur every cycle. In reality, the pedestrian phase would only be activated by the pedestrian push button, and allows northbound and southbound vehicular through traffic to proceed concurrently; and
- Synchro default values for all other inputs.

Table 3.2A and **Table 3.2B** summarize the results of the base year automobile conditions, indicating the existing level of service (LOS), average vehicular delay, v/c ratio, and 95th percentile queues experienced within the study area for the weekday AM and PM peak hours, respectively. Any movements identified as critical movements

are highlighted within the results table. **Appendix C** contains the Synchro analysis outputs for reference.

The results indicate all intersections and traffic movements are currently operating at acceptable levels of service and well within capacity.

The 95th percentile queue lengths were checked for all turn lanes against provided storage, and queue lengths for through movements were also checked. No spillback issues are identified.

Once exception is noted, the southbound left-turn movement at Main Street and Mill Street during both the AM and PM peak hours. The reported 95th percentile queue would exceed the provided storage provision; however, this is not considered a critical issue as the southbound left-turn lane provision is part of a continuous centre two-way left-turn lane. Vehicular queuing demands can be accommodated via the centre two-way left-turn lane without blocking adjacent upstream driveways.

The operational results align with field observations. It is noted traffic operations at Mill Street and Bower Street/Eastern Avenue are also slightly affected by the adjacent mid-block pedestrian crossing west of the intersection, and the Kitchener GO rail line crossing east of the intersection.

Mid-Block PXO Crossing Impacts

Based on our field observations conducted the mid-block pedestrian crossing impacts were noted to be minimal as the pedestrian crossing demand/volume was identified to be minor with approximately 10 pedestrian crossings during both the AM and PM peak hours. The low pedestrian crossing volume was observed not to result in any major disruptions to vehicular traffic. This is, eastbound and westbound traffic flow along Mill Street would result in a temporary delay due to the pedestrian crossing and any queues formed would quickly dissipate.

GO Train Crossing Impacts

From the in-field observations conducted, the adjacent GO Train crossing temporarily affects traffic flow along Mill Street. The Kitchener GO Train operates every 30 minutes to an hour during the weekday commuter periods.

During train crossings, it was observed that eastbound vehicular traffic would stop before Eastern Avenue and would not block the intersection. That is, motorist would position themselves such that traffic would be able to turn from Eastern Avenue to Mill Street. Once

the train passes and vehicular traffic resumes, eastbound and westbound vehicle queues were observed to clear quickly.

With the presence of a GO rail line crossing, it is observed for a southbound vehicle to make a left turn from Bower Street, a motorist would incur an approximate delay of three minutes. However, the demand of southbound left-turn volumes observed at the intersection are in low magnitude, reporting less than 15 vehicles per peak hour, which is equivalent to one vehicle every four minutes. Given the low magnitude, no major issues were identified at the intersection under base year conditions during a rail crossing.

TABLE 3.2A: BASE YEAR (2025) AM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	**C**	<	D	C	**D**	<	B	B	**B**	A	A	>	**A**	**C**
			Delay	<	33	>	**33**	<	52	22	**39**	<	16	14	**15**	8	9	>	**9**	**21**
			V/C	<	0.50	>		<	0.81	0.12		<	0.30	0.09		0.36	0.34	>		**0.50**
			Q	<	50	>		<	66	10		<	57	12		36	58	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	30		<	-	13		-11	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	<	C	>	**C**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	19	>	**19**	<	21	>	**21**	
			V/C	<	0.01	>		<	0.00	>		<	0.03	>		<	0.10	>		
			Q	<	0	>		<	0	>		<	1	>		<	2	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	<	C	>	**C**	
			Delay	<	0	>	**0**	<	1	>	**1**	<	17	>	**17**	<	25	>	**25**	
			V/C	<	0.00	>		<	0.04	>		<	0.07	>		<	0.07	>		
			Q	<	0	>		<	1	>		<	2	>		<	2	>		
	Frederick Street & Bower Street	TWSC	LOS		A	>	**A**	<	A		**A**	A		>	**A**					
			Delay		0	>	**0**	<	1		**1**	9		>	**9**					
			V/C		0.03	>		<	0.00			0.02		>						
			Q		0	>		<	0			0		>						
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	B	>	**B**	<	B	>	**B**	A	A	>	**A**	A	A	>	**A**	
			Delay	<	15	>	**15**	<	11	>	**11**	9	0	>	**0**	8	0	>	**0**	
			V/C	<	0.04	>		<	0.02	>		0.00	0.25	>		0.02	0.45	>		
			Q	<	1	>		<	0	>		0	0	>		0	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		20	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	**A**		A	>	**A**	<	A		**A**	
			Delay					9		>	**9**		0	>	**0**	<	6		**6**	
			V/C					0.07		>			0.01	>		<	0.02			
			Q					2		>			0	>		<	0			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	<	C	>	**C**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	17	>	**17**	<	18	>	**18**	
			V/C	<	0.01	>		<	0.01	>		<	0.03	>		<	0.05	>		
			Q	<	0	>		<	0	>		<	1	>		<	1	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	**B**	<	B	>	**B**	<	D	>	**D**	<	D	>	**D**	**B**
			Delay	<	17	>	**17**	<	15	>	**15**	<	36	>	**26**	<	36	>	**36**	**17**
			V/C	<	0.57	>		<	0.45	>		<	0.02	>		<	0.03	>		**0.37**
			Q	<	101	>		<	73	>		<	5	>		<	7	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 3.2B: BASE YEAR (2025) PM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	D	C	C	<	C	B	B	A	A	>	A	C
			Delay	<	32	>	32	<	48	24	34	<	20	13	19	10	8	>	9	22
			V/C	<	0.37	>		<	0.79	0.33		<	0.57	0.07		0.50	0.26	>		0.63
			Q	<	38	>		<	69	27		<	124	12		37	44	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	13		<	-	13		-12	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	19	>	19	<	27	>	27	
			V/C	<	0.01	>		<	0.01	>		<	0.04	>		<	0.10	>		
			Q	<	0	>		<	0	>		<	1	>		<	3	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	E	>	E	
			Delay	<	0	>	0	<	1	>	1	<	20	>	20	<	42	>	42	
			V/C	<	0.00	>		<	0.06	>		<	0.13	>		<	0.16	>		
			Q	<	0	>		<	1	>		<	3	>		<	4	>		
	Frederick Street & Bower Street	TWSC	LOS		A	>	A	<	A		A	A		>	A					
			Delay		0	>	0	<	0		0	9		>	9					
			V/C		0.03	>		<	0.00			0.01		>						
			Q		0	>		<	0			0		>						
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	B	>	B	<	C	>	C	A	A	>	A	A	A	>	A	
			Delay	<	15	>	15	<	16	>	16	9	0	>	0	10	0	>	0	
			V/C	<	0.06	>		<	0.12	>		0.01	0.47	>		0.02	0.32	>		
			Q	<	1	>		<	3	>		0	0	>		0	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		20	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					10		>	10		0	>	0	<	5		5	
			V/C					0.12		>			0.02	>		<	0.03			
			Q					3		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	19	>	19	<	22	>	22	
			V/C	<	0.01	>		<	0.01	>		<	0.07	>		<	0.12	>		
			Q	<	0	>		<	0	>		<	2	>		<	3	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	16	>	16	<	16	>	16	<	36	>	36	<	36	>	36	17
			V/C	<	0.50	>		<	0.52	>		<	0.04	>		<	0.02	>		0.33
			Q	<	86	>		<	92	>		<	7	>		<	7	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4 Forecasts

4.1 Horizon Years and Future Background Traffic

For assessment purposes, horizon years of 2028 and 2033 have been analyzed representing the anticipated full build-out year, and a period of five years beyond the full build-out year, respectively.

The future background traffic volumes comprise higher non-site traffic volumes due to the application of a growth factor, and traffic generated by other area developments, if any.

4.1.1 General Background Growth

To derive the 2028 and 2033 generalized background traffic forecasts, a compound growth rate of 2.0% per annum was applied to the base year (2025) traffic volumes.

The application of the 2.0% per annum growth rate was advised by Town staff during pre-study consultation.

4.1.2 Other Area Developments

Town of Halton Hill staff confirmed the following two other area background developments are to be accounted for within the traffic forecasts.

- **170-125 McDonald Boulevard** – a proposed residential development with a total of 118 street townhouse dwelling units; and
- **47 Maria Street** – a proposed residential development with a total of 12 affordable apartment units for people with special needs.
  - Due to the anticipated low site trip generation (less than 10 vehicle trips per peak hour) and the assumption that residents will not own a vehicle, the site traffic contributions are considered minimal. The application of the background growth rate would account for any traffic generated by this other area development.

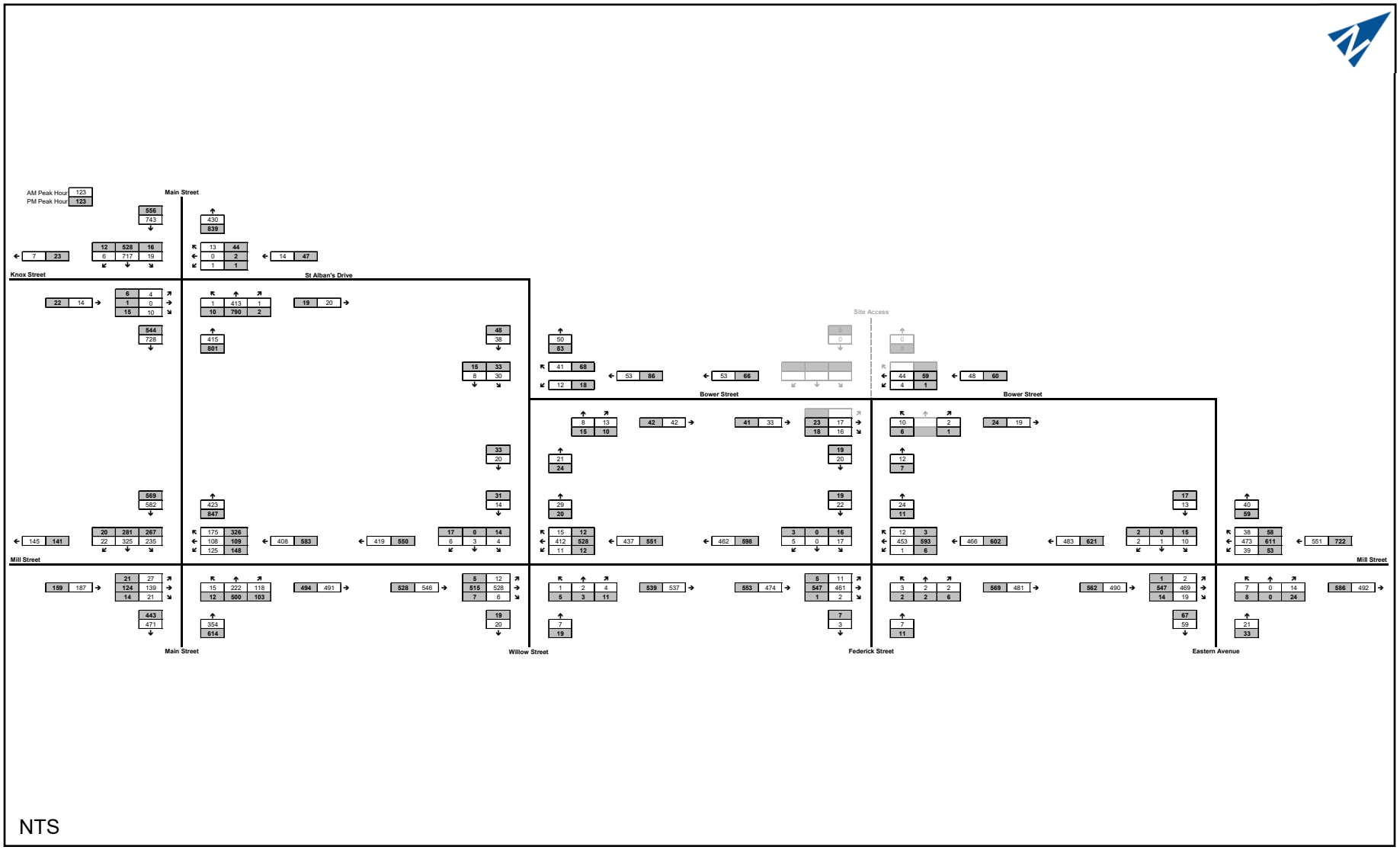
The relevant site-generated traffic contributions from the other area developments were provided by Town Staff. **Appendix D** contains the site traffic contributions from the other area developments.



4.1.3 Future Background Traffic Forecasts

Figure 4.1 illustrates the 2028 background traffic forecasts for the weekday AM and PM peak hours.

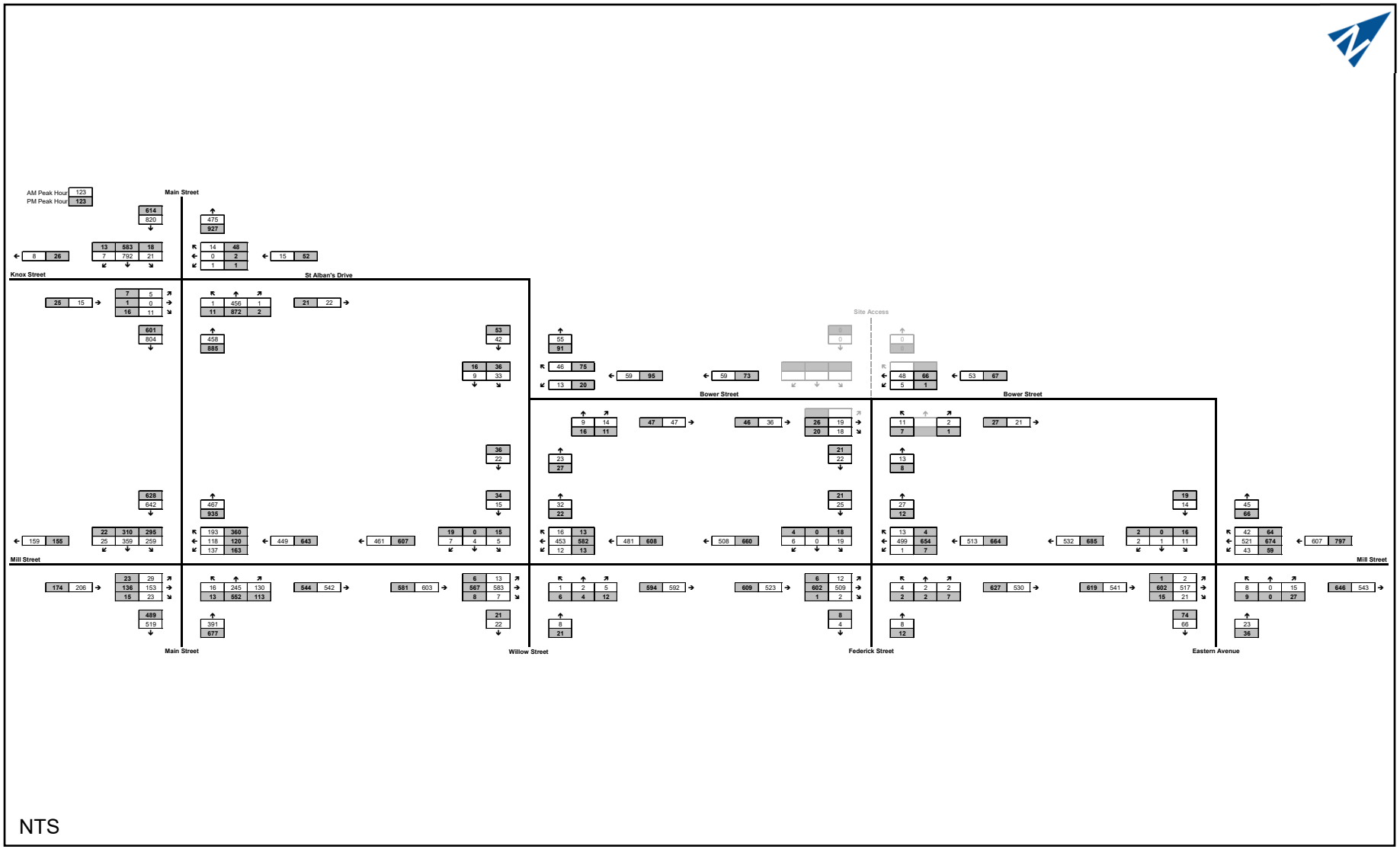
Figure 4.2 illustrates the 2033 background traffic forecasts for the weekday AM and PM peak hours.



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2028 Background Traffic Forecasts



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2033 Background Traffic Forecasts

4.2 Future Transportation Network Improvements

Town staff confirmed at the onset of this study there are no future road network improvements proposed within the study area under the future horizon years; therefore, the existing road network and intersection lane configurations are utilized for all future traffic operational analyses.

4.3 Trip Generation

The Institute of Transportation Engineers (ITE) publication, *Trip Generation Manual* (11th Edition)[6] is referenced to estimate the peak hour traffic volumes generated by the subject development.

For the proposed residential development, Land Use Code 221 – Multifamily Housing (Mid-Rise) and the fitted curve equations were utilized to estimate the site trip generation.

As per direction received from pre-study consultation, no modal share trip reductions are applied to the estimated development traffic.

Table 4.1 summarizes the trip generation. The site is forecast to generate 24 vehicle trips during the AM peak hour and 32 vehicle trips during the PM peak hour. The proposed development is considered a low trip generator.

TABLE 4.1: SITE TRIP GENERATION

LUC	Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
221[1]	80	5	19	24	19	13	32
Total		***5***	***19***	***24***	***19***	***13***	***32***

1: AM peak hour: T = 0.44(X) – 11.61 (23% in/77% out); PM peak hour: T = 0.39(X) + 0.34 (61% in/39% out).

4.4 Site Trip Distribution and Assignment

The directional distribution of traffic approaching and departing the subject lands is a function of several variables including population density, existing travel patterns, and efficiency of the roadways leading to the site.

The trip distribution of the site-generated traffic was estimated based on a review of existing trip patterns documented in the collected TMC data. **Table 4.2** summarizes the estimated directional distribution.

6 Institute of Transportation Engineers, *Trip Generation Manual, 11th Edition*, 2021

TABLE 4.2: ESTIMATED TRIP DISTRIBUTION

To/From	Via	AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
North	Main Street	41%	28%	27%	42%
South		19%	30%	30%	22%
East	Mill Street	30%	32%	35%	29%
West		10%	9%	8%	7%
Total		***100%***	***100%***	***100%***	***100%***

The site trips were all assigned to the transportation network in accordance with the noted trip distribution. The following is noted:

- Trips to/from the north were assumed to travel through the intersection of Main Street and Knox Street/St Alban's Drive; and
- Trips to/from the south, east, and west were assumed 50% via Mill Street and 50% via Bower Street.

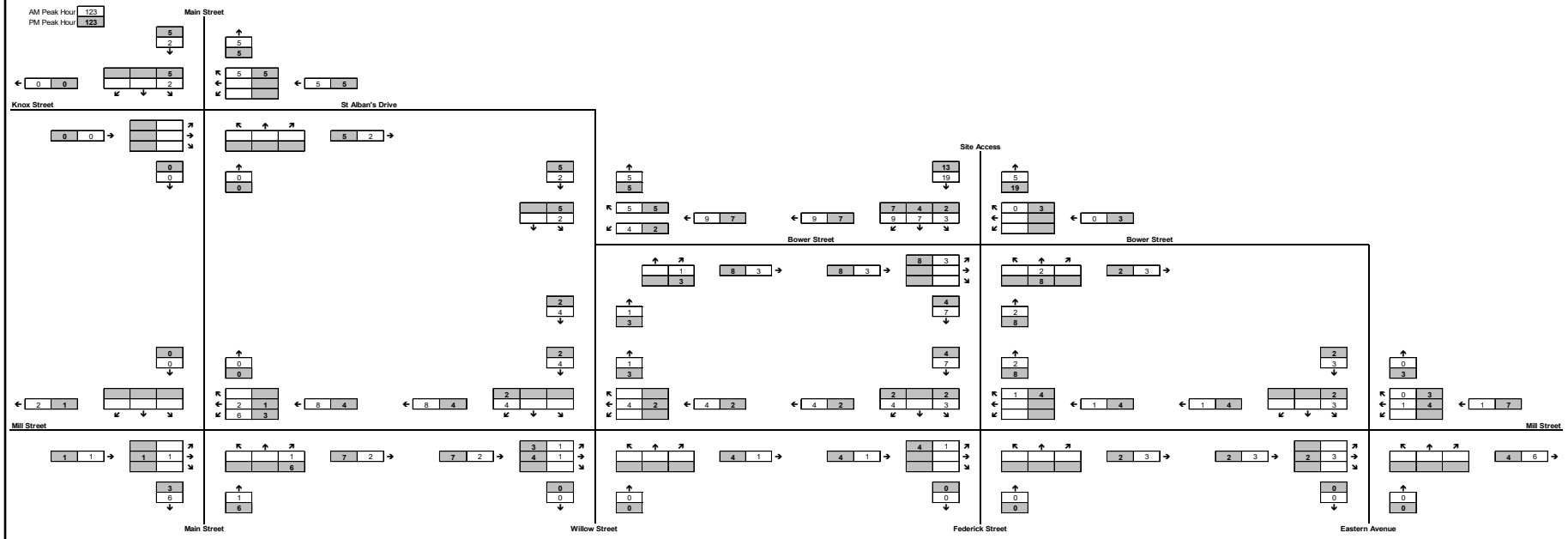
Figure 4.3 illustrates the site trip assignment on the adjacent road network for the weekday AM and PM peak hours.

4.5 Future Total Traffic

The weekday AM and PM peak hour background traffic forecasts were combined with the site traffic assignments to determine the total traffic volumes for the 2028 and 2033 horizon years.

Figure 4.4 illustrates the 2028 total traffic forecasts for the weekday AM and PM peak hours.

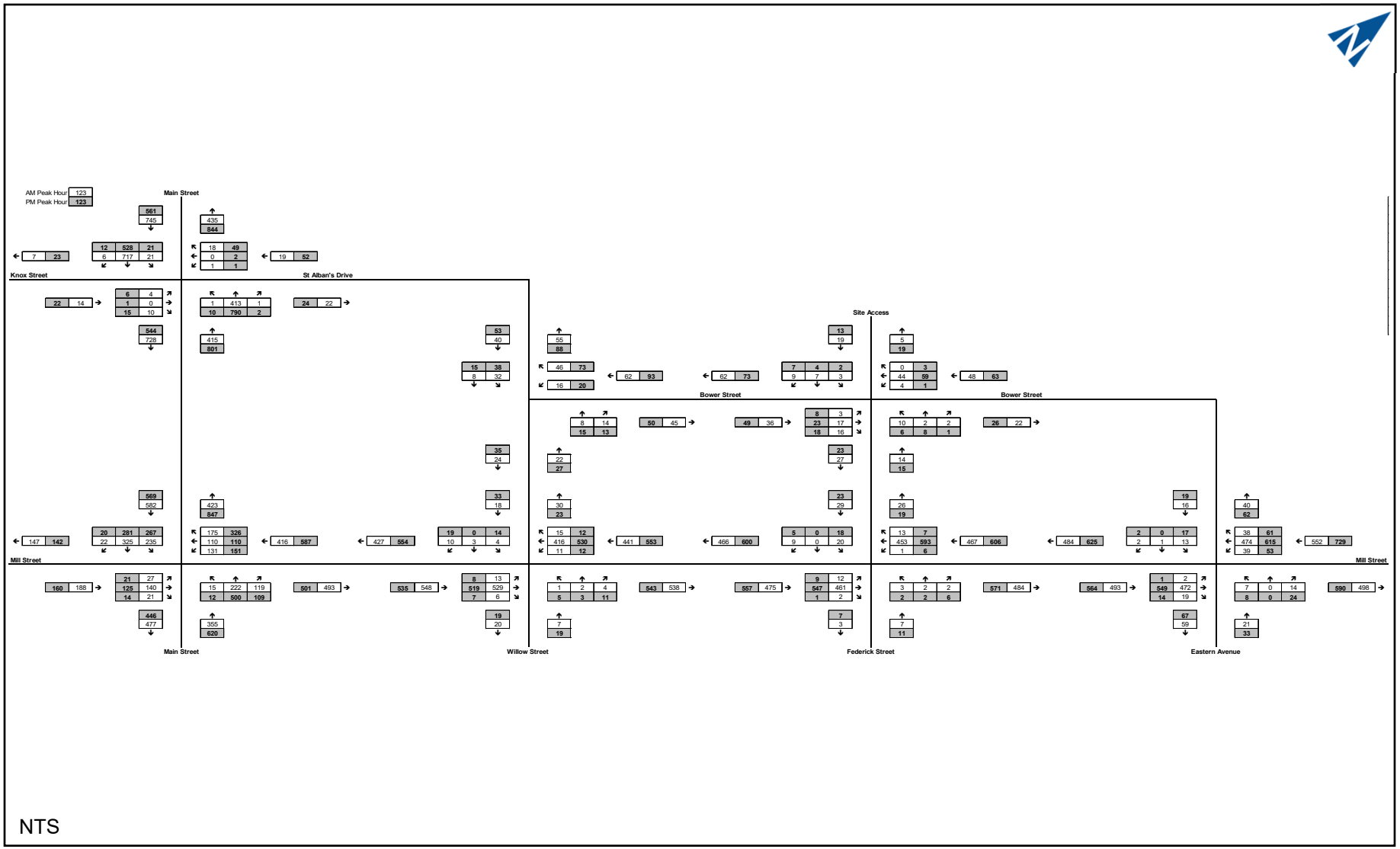
Figure 4.5 illustrates the 2033 total traffic forecasts for the weekday AM and PM peak hours.



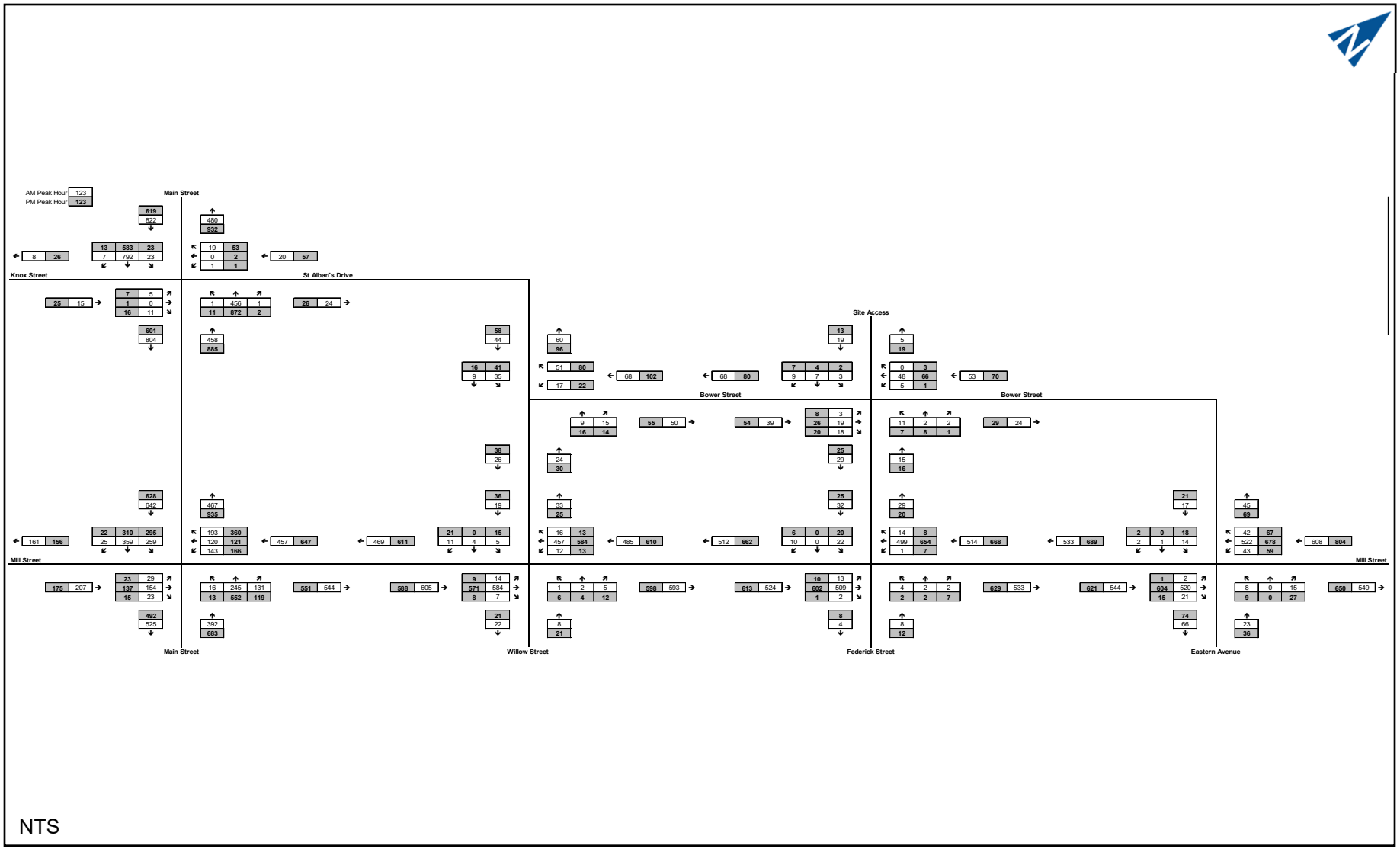
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Site-Generated Traffic Forecasts



2028 Total Traffic Forecasts



2033 Total Traffic Forecasts

5 Transportation Impact Assessment

5.1 Future Background Traffic

To assess the automobile operating conditions for the weekday AM and PM peak hour background traffic forecasts, a level of service analysis was undertaken using the same methodology, parameters, lane arrangements, and traffic control devices as the base year conditions. It is noted existing signal timing plans have been maintained (i.e., no changes to phases, splits, cycle length, etc.).

Table 5.1 and **Table 5.2** summarize the results of the operational analysis for the 2028 and 2033 background automobile traffic conditions (without the proposed development) during the AM and PM peak hours, respectively. Any movements identified as critical movements are highlighted within the results tables. **Appendix E** contains the Synchro analysis outputs for reference.

The results indicate the study area intersections are forecast to operate at similar levels of service as noted under base year conditions, albeit slightly exacerbated accounting for background growth and traffic contributions related to the other area developments.

Under 2028 and 2033 background conditions (without the proposed development), the study area intersections are forecast to continue operating at acceptable levels of service and well within capacity. The exception includes the following movements:

- The westbound shared left-turn/through movement at Main Street and Mill Street is reported to operate with v/c ratios of 0.87 and 0.90 during the AM peak hour under 2028 and 2033 horizons, respectively.
  - This is not considered a critical issue as the westbound shared movement is forecast to operate within capacity. It was further investigated that this movement can be mitigated/improved through optimization of the signal timing splits within the existing cycle length.
- The southbound shared left-turn/through/right-turn movement at Mill Street and Eastern Avenue/Bower Street is forecast to operate at a LOS F during the PM peak hour under the 2028 and 2033 horizons.
  - While the movement would be characterized by LOS F, this is not considered a critical issue as the southbound shared movement is forecast to operate well within capacity (v/c = 0.20 under 2028, and 0.28 under 2033). This is not an

unusual condition where a minor road operating under stop control intersects with a major road.

The 95th percentile queue lengths were checked for all turn lanes against provided storage, and queue lengths for through movements were also checked. No spillback issues are identified. The following is noted:

- The southbound left-turn movement at Main Street and Mill Street reports a storage deficiency of 13 to 19 metres during both peak hours under the 2028 and 2033 horizons.
  - This is not a critical issue as previously noted in **Section 3.5**, the southbound left-turn queues at Main Street and Mill Street would be accommodated by the centre two-way left-turn lane provision north of the intersection, without blocking adjacent driveways.
- The westbound right-turn movement at Main Street and Mill Street reports a storage deficiency of six metres during the PM peak hour under the 2033 horizon.
  - This is not a critical issue as the reported queue length exceedance of six metres can be accommodated by the existing pavement provisions available.

The operations for intersections located in proximity to the mid-block pedestrian crossing and the GO rail line crossing would continue to be affected by these crossings. However, similar to base year conditions, no major operational issues are identified based upon previous rationale accounting for background growth.

TABLE 5.1A: 2028 BACKGROUND AM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	E	C	D	<	B	B	B	A	B	>	A	C
			Delay	<	33	>	33	<	58	21	42	<	18	15	17	9	10	>	10	23
			V/C	<	0.52	>		<	0.87	0.13		<	0.34	0.10		0.40	0.37	>		0.55
			Q	<	54	>		<	79	10		<	61	13		38	62	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	30		<	-	12		-13	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	21	>	21	<	24	>	24	
			V/C	<	0.01	>		<	0.00	>		<	0.03	>		<	0.11	>		
			Q	<	0	>		<	0	>		<	1	>		<	3	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	D	>	D	
			Delay	<	0	>	0	<	1	>	1	<	18	>	18	<	28	>	28	
			V/C	<	0.00	>		<	0.04	>		<	0.08	>		<	0.08	>		
			Q	<	0	>		<	1	>		<	2	>		<	2	>		
	Frederick Street & Bower Street	TWSC	LOS		A	>	A	<	A		A	A		>	A					
			Delay		0	>	0	<	1		1	9		>	9					
			V/C		0.03	>		<	0.00			0.02		>						
			Q		0	>		<	0			0		>						
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	B	>	B	A	A	>	A	A	A	>	A	
			Delay	<	15	>	15	<	11	>	11	9	0	>	0	8	0	>	0	
			V/C	<	0.04	>		<	0.03	>		0.00	0.27	>		0.02	0.47	>		
			Q	<	1	>		<	1	>		0	0	>		0	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		20	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					9		>	9		0	>	0	<	6		6	
			V/C					0.07		>			0.02	>		<	0.02			
			Q					2		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	19	>	19	<	20	>	20	
			V/C	<	0.01	>		<	0.01	>		<	0.03	>		<	0.06	>		
			Q	<	0	>		<	0	>		<	1	>		<	2	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	18	>	18	<	16	>	16	<	36	>	36	<	36	>	36	18
			V/C	<	0.61	>		<	0.50	>		<	0.02	>		<	0.03	>		0.39
			Q	<	111	>		<	82	>		<	5	>		<	7	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 5.1B: 2028 BACKGROUND PM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	D	C	D	<	C	B	C	B	A	>	B	C
			Delay	<	32	>	32	<	52	24	36	<	23	14	22	12	9	>	10	24
			V/C	<	0.39	>		<	0.84	0.38		<	0.63	0.09		0.58	0.28	>		0.68
			Q	<	43	>		<	77	34		<	134	14		40	47	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	6		<	-	11		-15	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	20	>	20	<	31	>	31	
			V/C	<	0.01	>		<	0.01	>		<	0.04	>		<	0.13	>		
			Q	<	0	>		<	0	>		<	1	>		<	3	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	F	>	F	
			Delay	<	0	>	0	<	2	>	2	<	22	>	22	<	52	>	52	
			V/C	<	0.00	>		<	0.06	>		<	0.14	>		<	0.20	>		
			Q	<	0	>		<	2	>		<	4	>		<	5	>		
	Frederick Street & Bower Street	TWSC	LOS		A	>	A	<	A		A	A		>	A					
			Delay		0	>	0	<	0		0	9		>	9					
			V/C		0.03	>		<	0.00			0.01		>						
			Q		0	>		<	0			0		>						
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	C	>	C	A	A	>	A	B	A	>	A	
			Delay	<	15	>	15	<	17	>	17	9	0	>	0	10	0	>	0	
			V/C	<	0.06	>		<	0.14	>		0.01	0.50	>		0.02	0.34	>		
			Q	<	2	>		<	4	>		0	0	>		1	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		19	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					10		>	10		0	>	0	<	5		5	
			V/C					0.12		>			0.02	>		<	0.03			
			Q					3		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	21	>	21	<	25	>	25	
			V/C	<	0.01	>		<	0.01	>		<	0.08	>		<	0.15	>		
			Q	<	0	>		<	0	>		<	2	>		<	4	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	17	>	17	<	17	>	17	<	36	>	36	<	36	>	36	18
			V/C	<	0.54	>		<	0.56	>		<	0.04	>		<	0.02	>		0.36
			Q	<	96	>		<	103	>		<	8	>		<	8	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 5.2A: 2033 BACKGROUND AM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	E	C	D	<	C	B	B	B	B	>	B	C
			Delay	<	33	>	33	<	62	20	44	<	21	17	20	10	12	>	12	25
			V/C	<	0.54	>		<	0.90	0.14		<	0.39	0.12		0.47	0.42	>		0.62
			Q	<	60	>		<	96	11		<	67	16		42	70	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	29		<	-	9		-17	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	25	>	25	<	28	>	28	
			V/C	<	0.01	>		<	0.00	>		<	0.04	>		<	0.15	>		
			Q	<	0	>		<	0	>		<	1	>		<	4	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	D	>	D	
			Delay	<	0	>	0	<	1	>	1	<	21	>	21	<	34	>	34	
			V/C	<	0.00	>		<	0.05	>		<	0.10	>		<	0.11	>		
			Q	<	0	>		<	1	>		<	3	>		<	3	>		
	Frederick Street & Bower Street	TWSC	LOS		A	>	A	<	A		A	A		>	A					
			Delay		0	>	0	<	1		1	9		>	9					
			V/C		0.03	>		<	0.00			0.02		>						
			Q		0	>		<	0			0		>						
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	B	>	B	A	A	>	A	A	A	>	A	
			Delay	<	17	>	17	<	12	>	12	10	0	>	0	8	0	>	0	
			V/C	<	0.06	>		<	0.03	>		0.00	0.30	>		0.02	0.52	>		
			Q	<	1	>		<	1	>		0	0	>		0	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		20	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					9		>	9		0	>	0	<	6		6	
			V/C					0.08		>			0.02	>		<	0.03			
			Q					2		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	21	>	21	<	25	>	25	
			V/C	<	0.01	>		<	0.02	>		<	0.04	>		<	0.10	>		
			Q	<	0	>		<	0	>		<	1	>		<	2	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	20	>	20	<	17	>	17	<	36	>	36	<	36	>	36	19
			V/C	<	0.68	>		<	0.55	>		<	0.02	>		<	0.04	>		0.43
			Q	<	130	>		<	94	>		<	5	>		<	8	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 5.2B: 2033 BACKGROUND PM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	E	C	D	<	C	B	C	B	B	>	B	C
			Delay	<	31	>	31	<	57	23	38	<	29	17	27	19	10	>	14	27
			V/C	<	0.41	>		<	0.87	0.45		<	0.73	0.11		0.72	0.32	>		0.79
			Q	<	47	>		<	93	46		<	166	16		44	53	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	-6		<	-	9		-19	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	E	>	E	
			Delay	<	0	>	0	<	0	>	0	<	23	>	23	<	39	>	39	
			V/C	<	0.01	>		<	0.01	>		<	0.05	>		<	0.18	>		
			Q	<	0	>		<	0	>		<	1	>		<	5	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	F	>	F	
			Delay	<	0	>	0	<	2	>	2	<	27	>	27	<	72	>	72	
			V/C	<	0.00	>		<	0.07	>		<	0.19	>		<	0.28	>		
			Q	<	0	>		<	2	>		<	5	>		<	8	>		
	Frederick Street & Bower Street	TWSC	LOS		A	>	A	<	A		A	A		>	A					
			Delay		0	>	0	<	0		0	9		>	9					
			V/C		0.04	>		<	0.00			0.01		>						
			Q		0	>		<	0			0		>						
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	C	>	C	A	A	>	A	B	A	>	A	
			Delay	<	17	>	17	<	20	>	20	9	0	>	0	11	0	>	0	
			V/C	<	0.08	>		<	0.18	>		0.01	0.55	>		0.03	0.37	>		
			Q	<	2	>		<	5	>		0	0	>		1	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		19	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					10		>	10		0	>	0	<	5		5	
			V/C					0.14		>			0.02	>		<	0.03			
			Q					4		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	26	>	26	<	30	>	30	
			V/C	<	0.01	>		<	0.02	>		<	0.11	>		<	0.20	>		
			Q	<	0	>		<	0	>		<	3	>		<	6	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	18	>	18	<	18	>	18	<	36	>	36	<	36	>	36	19
			V/C	<	0.60	>		<	0.62	>		<	0.05	>		<	0.02	>		0.40
			Q	<	112	>		<	119	>		<	9	>		<	8	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

5.2 Future Total Traffic

To assess the automobile operating conditions for the weekday AM and PM peak hour total traffic forecasts, an operational analysis was undertaken using the same methodology, parameters, lane arrangements, and traffic control devices as in the analysis of background conditions. The exception being the inclusion and assessment of the site access connection with Bower Street.

Table 5.3 and **Table 5.4** present the results of the operational analysis for 2028 and 2033 total traffic conditions (with the proposed development), respectively. Any movements identified as critical movements are highlighted within the results tables. **Appendix F** contains the Synchro analysis outputs for reference.

It is forecast under both 2028 and 2033 total traffic conditions (with the proposed development) the study area intersections would operate similarly to background conditions, albeit slightly exacerbated with the inclusion of site-generated traffic. It is reiterated the proposed development is considered a low traffic generator and is estimated to generate less than 35 peak hour trips (24 and 32 vehicle trips during the AM and PM peak hour, respectively).

The previously identified critical movements under background conditions continue to be identified as critical under total conditions. No additional critical movements are identified with the addition of site-generated traffic.

It should be noted, similar to the existing/background conditions, the westbound shared left-turn/through movement at Main Street and Mill Street can be improved/mitigated through optimization of signal timing splits within the existing cycle length.

The site access intersection (Bower Street and Frederick Street/Site Access) is forecast to operate at acceptable levels of service and all movements well within capacity during the AM and PM peak hours under the 2028 and 2033 horizons. No auxiliary turn lanes are determined to be required from an operational or volume perspective.

The 95th percentile queue lengths were reviewed for all turn lanes against provided storage. Queue lengths for through movements were also checked. No spillback issues or major storage deficiencies are identified based upon rationale previously provided under **Section 5.1**.

Mid-Block PXO Crossing Impacts

It is anticipated the site could generate pedestrian trips during the AM and PM peak hours. Based on existing modal split documented in **Section 3.4** approximately three pedestrian trips could be generated at minimum.

For a conservative approach, with the assumption that all pedestrian trips would utilize the mid-block crossing located west of the intersection of Mill Street and Bower Street/Eastern Avenue, the additional impact to eastbound and westbound vehicular traffic along Mill Street is anticipated to be minor and imperceptible given the low volume of additional pedestrians and the anticipated short crossing duration.

GO Train Crossing Impacts

The additional site-generated traffic is not anticipated to impact the traffic operations at Mill Street and Bower Street/Eastern Avenue during a GO train crossing. With development of the subject site, it is forecast it would add less than 15 vehicles per peak hour to the intersection (equivalent to less than one vehicle every four minutes).

The southbound left-turn movement is expected to experience delay with GO train crossing similar to existing conditions. However, the train operates every 30 minutes to an hour during weekday peak hours, and the southbound additional left-turn volume is minor (less than five vehicles per peak hour). The additional site traffic would not result in adverse impacts to the traffic operations at Mill Street and Bower Street/Eastern Avenue.

It is noted Metrolinx has proposed to upgrade the Kitchener GO Line service to 15 minute, two-way, all-say service. While the timeline of this improvement is unknown, the improved GO service is expected to further affect traffic flow along Mill Street. It is recommended traffic operations along Mill Street in proximity to the rail line crossing be monitored, and appliable remedial measures be provided, if necessary.

TABLE 5.3A: 2028 TOTAL AM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	E	C	D	<	B	B	B	A	B	>	B	C
			Delay	<	33	>	33	<	58	21	42	<	19	16	18	9	11	>	10	23
			V/C	<	0.51	>		<	0.87	0.13		<	0.34	0.10		0.40	0.37	>		0.56
			Q	<	55	>		<	86	10		<	61	13		38	62	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	30		<	-	12		-13	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	22	>	22	<	23	>	23	
			V/C	<	0.01	>		<	0.00	>		<	0.03	>		<	0.14	>		
			Q	<	0	>		<	0	>		<	1	>		<	4	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	D	>	D	
			Delay	<	0	>	0	<	1	>	1	<	19	>	19	<	29	>	29	
			V/C	<	0.00	>		<	0.04	>		<	0.08	>		<	0.10	>		
			Q	<	0	>		<	1	>		<	2	>		<	3	>		
	Frederick Street/Site Access & Bower Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	
			Delay	<	0	>	0	<	1	>	1	<	10	>	10	<	9	>	9	
			V/C	<	0.00	>		<	0.00	>		<	0.02	>		<	0.02	>		
			Q	<	0	>		<	0	>		<	1	>		<	1	>		
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	B	>	B	A	A	>	A	A	A	>	A	
			Delay	<	15	>	15	<	11	>	11	9	0	>	0	8	0	>	0	
			V/C	<	0.04	>		<	0.04	>		0.00	0.27	>		0.02	0.47	>		
			Q	<	1	>		<	1	>		0	0	>		0	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		20	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					9		>	9		0	>	0	<	6		6	
			V/C					0.08		>			0.02	>		<	0.03			
			Q					2		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	19	>	19	<	19	>	19	
			V/C	<	0.01	>		<	0.01	>		<	0.03	>		<	0.07	>		
			Q	<	0	>		<	0	>		<	1	>		<	2	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	18	>	18	<	16	>	16	<	36	>	36	<	36	>	36	18
			V/C	<	0.61	>		<	0.50	>		<	0.02	>		<	0.04	>		0.39
			Q	<	112	>		<	84	>		<	5	>		<	8	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 5.3B: 2028 TOTAL PM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	**C**	<	D	C	**D**	<	C	B	**C**	B	A	>	**B**	**C**
			Delay	<	32	>	**32**	<	53	24	**37**	<	23	15	**22**	12	9	>	**11**	**24**
			V/C	<	0.39	>		<	0.84	0.37		<	0.63	0.10		0.58	0.28	>		**0.69**
			Q	<	43	>		<	78	34		<	134	16		40	47	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	6		<	-	9		-15	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	<	D	>	**D**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	21	>	**21**	<	31	>	**31**	
			V/C	<	0.01	>		<	0.01	>		<	0.04	>		<	0.15	>		
			Q	<	0	>		<	0	>		<	1	>		<	4	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	<	F	>	**F**	
			Delay	<	0	>	**0**	<	2	>	**2**	<	22	>	**22**	<	55	>	**55**	
			V/C	<	0.00	>		<	0.06	>		<	0.15	>		<	0.23	>		
			Q	<	0	>		<	2	>		<	4	>		<	6	>		
	Frederick Street/Site Access & Bower Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	1	>	**1**	<	0	>	**0**	<	10	>	**10**	<	9	>	**9**	
			V/C	<	0.01	>		<	0.00	>		<	0.02	>		<	0.02	>		
			Q	<	0	>		<	0	>		<	1	>		<	0	>		
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	**C**	<	C	>	**C**	A	A	>	**A**	B	A	>	**A**	
			Delay	<	16	>	**16**	<	17	>	**17**	9	0	>	**0**	10	0	>	**0**	
			V/C	<	0.06	>		<	0.16	>		0.01	0.50	>		0.03	0.34	>		
			Q	<	2	>		<	4	>		0	0	>		1	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		19	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	**A**		A	>	**A**	<	A		**A**	
			Delay					10		>	**10**		0	>	**0**	<	6		**6**	
			V/C					0.13		>			0.02	>		<	0.03			
			Q					4		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	C	>	**C**	<	C	>	**C**	
			Delay	<	0	>	**0**	<	0	>	**0**	<	21	>	**21**	<	25	>	**25**	
			V/C	<	0.01	>		<	0.01	>		<	0.08	>		<	0.16	>		
			Q	<	0	>		<	0	>		<	2	>		<	4	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	**B**	<	B	>	**B**	<	D	>	**D**	<	D	>	**D**	**B**
			Delay	<	17	>	**17**	<	17	>	**17**	<	36	>	**36**	<	36	>	**36**	**18**
			V/C	<	0.55	>		<	0.56	>		<	0.04	>		<	0.02	>		**0.36**
			Q	<	99	>		<	103	>		<	8	>		<	8	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 5.4A: 2033 TOTAL AM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	E	B	D	<	C	B	B	B	B	>	B	C
			Delay	<	33	>	33	<	63	20	45	<	21	18	20	11	13	>	12	25
			V/C	<	0.53	>		<	0.91	0.14		<	0.40	0.12		0.47	0.42	>		0.63
			Q	<	61	>		<	101	11		<	67	16		42	70	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	29		<	-	9		-17	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	26	>	26	<	28	>	28	
			V/C	<	0.02	>		<	0.00	>		<	0.04	>		<	0.18	>		
			Q	<	0	>		<	0	>		<	1	>		<	5	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	E	>	E	
			Delay	<	0	>	0	<	1	>	1	<	22	>	22	<	36	>	36	
			V/C	<	0.00	>		<	0.05	>		<	0.10	>		<	0.13	>		
			Q	<	0	>		<	1	>		<	3	>		<	3	>		
	Frederick Street/Site Access & Bower Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	
			Delay	<	0	>	0	<	1	>	1	<	10	>	10	<	9	>	9	
			V/C	<	0.00	>		<	0.00	>		<	0.03	>		<	0.02	>		
			Q	<	0	>		<	0	>		<	1	>		<	1	>		
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	B	>	B	A	A	>	A	A	A	>	A	
			Delay	<	17	>	17	<	12	>	12	10	0	>	0	8	0	>	0	
			V/C	<	0.06	>		<	0.04	>		0.00	0.30	>		0.02	0.52	>		
			Q	<	1	>		<	1	>		0	0	>		1	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		19	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					9		>	9		0	>	0	<	6		6	
			V/C					0.09		>			0.02	>		<	0.03			
			Q					2		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	C	>	C	
			Delay	<	0	>	0	<	0	>	0	<	21	>	21	<	23	>	23	
			V/C	<	0.02	>		<	0.02	>		<	0.04	>		<	0.11	>		
			Q	<	0	>		<	0	>		<	1	>		<	3	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	20	>	20	<	17	>	17	<	36	>	36	<	36	>	36	19
			V/C	<	0.68	>		<	0.55	>		<	0.02	>		<	0.05	>		0.44
			Q	<	131	>		<	95	>		<	5	>		<	9	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

TABLE 5.4B: 2033 TOTAL PM PEAK HOUR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Main Street & Mill Street	TCS	LOS	<	C	>	C	<	E	C	D	<	C	B	C	B	B	>	B	C
			Delay	<	31	>	31	<	57	23	38	<	30	17	27	19	11	>	15	27
			V/C	<	0.41	>		<	0.88	0.44		<	0.74	0.12		0.73	0.32	>		0.80
			Q	<	47	>		<	95	46		<	166	18		44	53	>		
			Stor.	<	-	>		<	-	40		<	-	25		25	-	>		
			Avail.	<	-	>		<	-	-6		<	-	7		-19	-	>		
	Frederick Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	C	>	C	<	E	>	E	
			Delay	<	0	>	0	<	0	>	0	<	23	>	23	<	39	>	39	
			V/C	<	0.01	>		<	0.01	>		<	0.05	>		<	0.21	>		
			Q	<	0	>		<	0	>		<	1	>		<	6	>		
	Eastern Avenue/Bower Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	F	>	F	
			Delay	<	0	>	0	<	2	>	2	<	27	>	27	<	77	>	77	
			V/C	<	0.00	>		<	0.07	>		<	0.20	>		<	0.31	>		
			Q	<	0	>		<	2	>		<	5	>		<	9	>		
	Frederick Street/Site Access & Bower Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	A	>	A	
			Delay	<	1	>	1	<	0	>	0	<	10	>	10	<	9	>	9	
			V/C	<	0.01	>		<	0.00	>		<	0.03	>		<	0.02	>		
			Q	<	0	>		<	0	>		<	1	>		<	0	>		
	Main Street & Knox Street/St Alban's Drive	TWSC	LOS	<	C	>	C	<	C	>	C	A	A	>	A	B	A	>	A	
			Delay	<	18	>	18	<	20	>	20	9	0	>	0	11	0	>	0	
			V/C	<	0.08	>		<	0.20	>		0.01	0.55	>		0.04	0.37	>		
			Q	<	2	>		<	5	>		0	0	>		1	0	>		
			Stor.	<	-	>		<	-	>		10	-	>		20	-	>		
			Avail.	<	-	>		<	-	>		10	-	>		19	-	>		
	Willow Street & Bower Street	TWSC	LOS					A		>	A		A	>	A	<	A		A	
			Delay					10		>	10		0	>	0	<	6		6	
			V/C					0.15		>			0.02	>		<	0.04			
			Q					4		>			0	>		<	1			
	Willow Street & Mill Street	TWSC	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	D	>	D	
			Delay	<	0	>	0	<	0	>	0	<	26	>	26	<	30	>	30	
			V/C	<	0.01	>		<	0.02	>		<	0.12	>		<	0.21	>		
			Q	<	0	>		<	0	>		<	3	>		<	6	>		
	Willow Street & Mill Street	TCS	LOS	<	B	>	B	<	B	>	B	<	D	>	D	<	D	>	D	B
			Delay	<	18	>	18	<	18	>	18	<	36	>	36	<	36	>	36	19
			V/C	<	0.60	>		<	0.62	>		<	0.05	>		<	0.03	>		0.40
			Q	<	114	>		<	119	>		<	9	>		<	9	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

5.3 Impact Assessment Summary

5.3.1 Overall Summary

Based on the future traffic operational results documented in **Section 5.1** and **Section 5.2**, the incremental impact of the proposed residential development on the adjacent transportation network is considered minor from an operational perspective.

From a traffic volume perspective, **Table 5.5** provides a summary of how traffic volumes are anticipated to increase with the subject development.

The proposed development is anticipated to generate less than 35 vehicular trips (two-way) during each peak hour. The additional traffic would be less than daily traffic variations typically experienced (10%). It is noted the intersection of Bower Street and Willow Street suggests a relatively high increase (close to 10%) in traffic during the AM and PM peak hour; however, this only translated to a minor increase in traffic volumes (approximately 15 vehicles).

This amount of site-generated traffic is minor and not anticipated to result in any adverse impact to the adjacent transportation network. Accordingly, no intersection geometric improvements or traffic control upgrades are required to accommodate the proposed residential development.

TABLE 5.5: TRAFFIC VOLUME INCREASE

Intersection	2033 Background vs. 2033 Total % Volume Increase (Total Entering)	
	AM Peak Hour	PM Peak Hour
Main Street and Mill Street	0.6%	0.5%
Mill Street and Frederick Street	0.8%	0.9%
Mill Street and Bower Street/Eastern Avenue	0.6%	0.7%
Main Street and St Alban's Drive	0.5%	0.6%
Bower Street and Willow Street	9.7%	8.6%
Willow Street and Mill Street	0.9%	0.9%

5.3.2 Traffic Infiltration

This section provides a discussion on the site-generated traffic infiltration onto adjacent local roads within the study area.

Per **Figure 4.3**, the site-generated traffic would add less than 15 vehicles trips (two-way) on the study area local roads per peak hour. This is equivalent to less than one vehicle every four minutes. This amount of site traffic would be imperceptible and results in minimal traffic infiltration on the adjacent study area local roads.

Given the location of the proposed site access connection with Bower Street, there exists a number of opportunities for site-generated traffic to disperse and traverse several adjacent local residential roads, such as John Street, Elgin Street, and Wilbur Street. If this occurs, the additional site traffic on the study area local roads would be further dispersed, resulting in even less of a traffic impact.

Under a worst-case scenario, if all traffic to/from the site was to utilize a single local road, it could experience up to an additional 35 vehicles per peak hour. This is equivalent to one vehicle two minutes. This additional traffic is considered minor and is not anticipated to cause adverse impact to the local road. Based on the existing/projected traffic volumes and a conservative planning level road capacity of 400 vehicles per lane per hour[7], the study area local roads are expected to continue operating well within capacity under the furthest horizon.

With regard to the adjacent local roads that were not assessed in this study (e.g., John Street, Elgin Street, and Wilbur Street), these roads would experience similar traffic volumes as the study area local roads, based on in-field observations. Similar to the rationale presented above, minimal traffic is anticipated on these roads.

In summary, given the magnitude of the site-generated traffic and anticipated traffic volumes, traffic infiltration on nearby local roads will occur; however, the additional traffic to be added is considered minimal and imperceptible.

[7] HDR, *Town of Innisfil Transportation Master Plan Update Appendix C – Travel Demand Model Documentation*, November 2017, p5.

6 Collision Review

Town of Halton Hill's staff requested a high-level review of historical collision data at the study area intersections. Collision data was provided by the Town for the 6-year period encompassing January 2019 to December 2024. **Appendix B** contains the collision data for reference.

Table 6.1, **Table 6.2**, and **Table 6.3** summarize the collision trends, including location, severity, and type. A total of 14 collisions occurred within the study area. Overall, the yearly average number of collisions is considered low. No collisions involving cyclists were reported. One collision involving a pedestrian was reported at Main Street and Mill Street due to an improper turn by the driver.

The majority of collisions reported are noted to be unremarkable, with 79% resulting in non-reportable or property damage only. The remaining 21% (three collisions) resulted in non-fatal injuries were reported at the intersections of Mill Street with Main Street, Willow Street, and Frederick Street, due to an improper turn by the driver, hit a stopped vehicle, and following too close, respectively.

The most common collision type identified was rear-end collisions, accounting for 43% of all collisions. A closer review indicates five out of six of these collisions occurred at the east-west approaches, three out of six of these collisions occurred due to one vehicle following too close, and four out of six of these collisions involved a stopped vehicle. Based upon the reported data, the main cause of rear-end collisions were due to driver error.

The second most identified collision type was turning movement related collisions, account for 29% of all collisions. All turning movement collisions resulted in property damage only. It is noted three out of the four turning movement collisions occurred at the intersection of Main Street and Mill Street, and three turning movement collisions occurred due to a driver failing to yield right-of-way. This indicates the turning movement collisions were mostly due to driver error.

The collisions mainly occurred during daytime hours and under clear weather conditions. Two collisions occurred under wet and dusk/dark conditions.

Overall, the collision incidences are unremarkable. No significant or immediate safety issues are identified.

TABLE 6.1: SUMMARY OF COLLISIONS

Intersection	# of Collisions	Average # of Collisions per Year
Main Street North and St Alban's Drive/Knox Street	1	0.17
Main Street and Mill Street	5	0.83
Bower Street and Willow Street North	1	0.17
Mill Street East and Willow Street	3	0.5
Mill Street and Frederick Street	1	0.17
Mill Street and Bower Street/Eastern Avenue	3	0.5
Total	***14***	***2.34***

TABLE 6.2: SUMMARY OF COLLISION SEVERITY

Severity Classification	# of Collisions (%)
Non-Reportable	1 (7%)
Property Damage Only	10 (72%)
Non-Fatal Injury	3 (21%)
Fatal Injury	0 (0%)
Total	***14 (100%)***

TABLE 6.3: SUMMARY OF COLLISION IMPACT TYPE

Severity Classification	# of Collisions (%)
Rear-end	6 (43%)
Single Motor Vehicle Other	2 (14%)
Turning Movement	4 (29%)
Other	2 (14%)
Total	***14 (100%)***

7 Transportation Demand Management (TDM) Plan

7.1 Overview

Transportation Demand Management (TDM) refers to policies and programs designed to manage the demands of the transportation network. In North America, TDM is primarily geared towards encouraging alternative transportation modes to the single-occupant vehicle (SOV), as opposed to the ongoing expansion of municipal roadway systems. Additionally, TDM also assists in reducing associated parking demands. TDM measures can include policy changes that support a balanced transportation network across all modes, as well as the development of infrastructure that encourages all modes of travel.

TDM polices and programs consider how people's choices of travel mode are affected by factors such as land use patterns, parking availability, parking costs, development design, the relative cost, convenience, and availability of alternate modes of transportation. Using polices and programs to make active and sustainable transportation more convenient, a TDM approach to transportation can deliver long-term environmental sustainability, improve public health, and build more human-scaled, livable cities.

However, TDM initiatives are not strictly confined to development design, and in many cases rely on the broader municipal transportation network to be successful. This means that TDM initiatives at the development level complement the municipal transportation network, and together provide meaningful transportation options for the end users of a development.

A comprehensive TDM plan has been developed for the proposed residential development, which is in alignment with the Town of Halton Hills Green Development Standards v3 (June 15, 2021).

7.2 Existing and Future TDM Opportunities

The built form and use of the lands surrounding the subject site are primarily oriented to automobile travel; however, a TDM Plan can assist in reducing SOV trips, which can in turn reduce the number of site-generated vehicle trips and the demand for vehicle parking.

TDM includes programs, policies, and infrastructure that promote a shift in thinking towards a multi-faceted approach to transportation planning. With proper implementation, TDM initiatives can encourage

transit, cycling, and walking modes as viable attractive alternatives to the private automobile.

The study area includes existing infrastructure which could be further enhanced or modified to support TDM for the subject site. The following subsections highlight existing and future planned infrastructure or programs to support TDM.

7.2.1 Walking and Cycling

As documented in **Section 3.3**, sidewalks are currently provided along all study area roadways. Overall, the existing municipal sidewalk network is continuous and well-connected.

No dedicated cycling facilities are currently provided on any of the study area roadways, requiring cycling trips to be accommodated within the travelled sections of the existing roadways.

Future planned improvements include Bower Street is proposed to be a signed bike route with sharrows, Mill Street West is proposed to provide urban shoulders, and Mill Street East is classified as a bicycle-friendly corridor.

7.2.2 Transit

The site is located adjacent and just outside the boundary of the Acton Downtown Area, and within the limits of the Acton GO Major Transit Station Area (MTSA).

GO Bus Route 31 and 33 operate within close vicinity to the subject site. The closest GO Bus stops are located on Mill Street at Elgin Street which is approximately 150 metres (three-minute walk) from the subject site.

The Acton GO Station is located approximately 300 metres (five-minute walk) from the subject site. There are seven eastbound trains during the morning peak period (7 to 10 AM) and nine westbound trains during the evening peak period (3 to 6 PM) Monday to Friday. Passengers can access the nearby communities of Georgetown, Rockwood, Guelph, and the Greater Toronto Area via the GO Transit network.

As we understand, Metrolinx proposes to expand the Kitchener GO line service to provide two-way, all-day rapid transit service with 15 minutes headways. However, the timeline for the GO service improvement is unknown. The completion/operation of Kitchener GO line expansion will further improve transit opportunities and leverage

inter-regional transit use given the locational advantage of the site, and further reduce the need for single-occupant vehicle trips.

7.3 Proposed TDM Measures and Checklist

TDM strategies are aimed at influencing land use patterns, development design, parking availability and cost, and/or the relative cost, convenience and availability of other travel modes to reduce reliance on motor vehicles for travel. These strategies can be divided into two categories:

- Pre-occupancy: Measures implemented in the design and construction of the development; and
- Post-occupancy: Measures implemented once the development is occupied and operational.

Measures taken pre-occupancy can influence how attractive, convenient, and safe travel modes other than single-occupant vehicle (SOV) travel will be once the site is developed and occupied. At this stage, the site can be designed to better facilitate travel by walking, cycling, and transit, while ensuring sufficient vehicle parking is provided to meet but not exceed demand. The local municipality (Town of Halton Hills) also has greater influence on their implementation of post-occupancy measures.

Offering incentives after the development is completed also influences travel behaviour. Measures in this category include subsides to use transit, provision of trip-end facilities such as bicycle parking, and information about where and how to use different travel modes.

The following sections outline the TDM measures proposed and planned for the site and are categorized into pre-occupancy and post-occupancy initiatives.

Table 7.1 summarizes the measures and denotes responsibility. The TDM measures identified are focused on residents of the proposed development.



TABLE 7.1: PROPOSED TDM INITATIVES

Measure	Description	Responsibility
Walking and Cycling	Connect buildings and sidewalks with internal pathways. Install pedestrian and cyclist-oriented pavement markings and signing on-site where applicable. Provision of bicycle parking on-site to further encourage cycling as an alternative mode of transportation. Include lighting details on external pedestrian walkways.	Developer
Vehicle Parking	Unbundle parking spaces from units. Reduce the provision of surplus parking if feasible.	Developer
Bikeshare	Implementation of on-site bikeshare services as opportunities arise/available in the area.	Developer for coordination and implementation
Education/ Promotion and Incentives	Monitor emerging programs to educate and promote TDM, including provision of prepaid transit passes to purchasers of new units, and consultation with Smart Commute for a membership to provide TDM services. The developer/owner shall commit to a TDM Communications Strategy Outreach to effectively delivery transit incentives and information packages to residents.	Developer

7.3.1 Walking and Cycling (Pre-Occupancy)

Pedestrian accessibility for a development is essential to ensure that those that can walk, have accessible pedestrian connections. Proper pedestrian connections from the surrounding community to the site should be available to ensure safety and to enhance the experience of those that choose to walk. Providing a safe and attractive environment for residents/visitors who choose to walk to/from the development will help reduce vehicle usage and parking requirements.

Walking will be supported and encouraged through the provision of secure internal connections and walkway connections to the existing pedestrian network. This would include internal site walkways and/or paths that are well designed in terms of accessibility, lighting, and where necessary, wayfinding signage. With sufficient on-site pedestrian infrastructure planned, pedestrian connectivity to the public sidewalks will be adequately provided for.

The Town's Zoning By-law currently does not state any minimum requirements for bicycle parking for residential land uses. However, a total of 38 resident long-term bicycle parking spaces are proposed on-site as currently planned. Short-term bicycle parking is anticipated to be provided on-site, subject to confirmation.

Walking and cycling will also be supported through the provision of pedestrian and cycling infrastructure as part of the future active transportation network.

7.3.2 Vehicle Parking (Pre-Occupancy)

TDM measures aim to reduce automobile ownership and private vehicle trips, thereby reducing the need for an oversupply of parking with the intent of encouraging the use of other forms of transportation; however, parking supply should not be reduced to a point in which significant parking issues are created.

Managing parking supply helps to reduce the undesirable impacts of parking demand on local and regional traffic levels and can result in positive impacts on community livability and design.

It is planned that parking spaces will be unbundled from residential units. That is, separating the cost of parking from the cost of each residential unit. This will make the often overlooked cost of owning and driving a vehicle visible, and will encourage residents to use more sustainable modes of transportation. Additionally, ownership of a dwelling unit will be more attractive to prospective residents who do not own or who plan not to own a vehicle.

To further encourage residents of the development to utilize sustainable travel modes, the developer should consider reducing parking rates, where possible. By providing sufficient parking to accommodate demands and not having an overly excess supply of parking available encourages residents within walking distance to walk rather than use a vehicle and create a vehicle trip.

7.3.3 Carshare/Bikeshare (Post-Occupancy)

It is noted there are carshare/bikeshare companies actively seeking partners for operating stations/facilities. The land owner/future property management company are recommended to monitor and consider opportunities to pursue.

Specifically, the land owner/future property management company are responsible for identifying the cost and responsibilities for coordination and implementation of the on-site carshare/bikeshare services.

7.3.4 Wayfinding and Travel Planning (Post-Occupancy)

The location and nature of the proposed development is conducive to the placement of wayfinding signs. The provision of proper directional signage and accompanying illumination will create and foster an environment attractive to pedestrians and cyclists. All pedestrian crossings should be clearly delineated and illuminated.

7.3.5 Education/Promotion and Incentives (Pre-Occupancy)

The land owner/future property management company will consult with Smart Commute Halton (i.e., workplace and community-based travel planning) to discuss a membership for the subject property to provide TDM services. The TDM services offered will assist with post-occupancy initiatives including but not limited to assistance with a monitor program, coordination of bikeshare services, distribution of transit incentives and preparing informational packages of available transportation options for residents. Smart Commute is expanding with community-based transportation demand management to reduce reliance on private automobiles.

All related costs will be the responsibility of the land owner/future property management company. A copy of the agreement/membership with Smart Commute Halton to implement TDM services for the development will be provided to the Region.

7.3.6 Education/Promotion and Incentives (Post-Occupancy)

The applicant/future property management company will provide information on available travel options including active transportation (cycling and walking) and transit to residents.

Specifically, a TDM Communications Outreach Strategy will be developed to assist in the deliver the information packages to residents.

7.3.7 TDM Checklist

Table 7.2 summarizes the TDM initiatives and strategies applicable to this proposed development.

TABLE 7.2: TDM CHECKLIST

TDM Measure	97 Bower Street	
	Applicable	Responsibility
Information Packages	Yes	Developer
TDM Communication Strategy	Yes	
Pedestrian Connections	Yes	
Cycling Connections	Yes	
Pedestrian/Cycling Connections to Transit Facilities	Yes	
Internal Pedestrian Circulation	Yes	
Active Transportation Network	Yes	
Bicycle Parking	Yes	
Illumination of Pedestrian/Cycling Connections	Yes	
Parking Reduction	Yes	
Unbundling Parking from Units	Yes	
Membership with Smart Commute or Similar Organization	Yes	

7.4 Green Development Standards v3

The Town of Halton Hills Green Development Standards v3[8] requires all development proposals to reduce single-occupant auto vehicle (SOV) trips generated by the proposed development by a minimum of 30% through the adopted Transportation Demand Management (TDM) measures for the site. As such, the impacts of proposed TDM measures and site context on the proposed site trip generation must be quantified. The following rationale is provided for estimates on the reduction of SOV resident trips associated with infrastructure strategies and TDM measures:

- Vehicular Parking Reduction:
  - The proposed parking supply rate is 1.15 spaces per unit (inclusive of resident and visitor), in comparison to the municipal requirement of 1.75 spaces per unit. This represents a difference of 48 parking spaces, a 34% reduction from the municipal requirement.

[8] Town of Halton Hills, Green Development Standards v3, June 15, 2021, p21.

- The 34% parking supply reduction is expected to proportionally reduce SOV resident trips. A conservative approach is assumed and SOV resident vehicular trip generation would be reduced by 30%.

- Transit Usage:
  - Based on the existing travel mode split reported by TTS data, it was previously identified within the study area that transit trips consist of approximately 1-4% of all trips.
  - Based upon the proximity and availability of GO transit service, the site's location within a Major Transit Station Area (MTSA), the existing transit mode usage is conservatively estimated to be applicable to building residents. It is conservatively assumed the SOV resident trip generation would be reduced by 1%.

    It is noted when the planned Kitchener GO line improvements are implemented, the uptake in transit usage could potentially be higher than the existing baseline usage.

- Increased Vehicle Occupancy:
  - Per research data conducted by the Victoria Transport Policy Institute (VTPI), the publication "Parking Management Comprehensive Implementation Guide" notes that the provision of marketing and promotional materials to encourage measures such as carpooling could potentially result in trip reductions of 5 – 15%.
  - Based upon the existing modal split data for the subject site, for the commuter pattern the percentage of automobile passenger trips was noted as 1% and 21%, respectively for the AM peak hour outbound and PM peak hour inbound trips. A conservative approach is assumed, and SOV resident trip generation would be reduced by 1%.

- Increased Cycling Trips:
  - The provision of 38 long-term bicycle parking spaces provided on-site has the potential to reduce SOV vehicle trips.
  - Per research data conducted by the Victoria Transport Policy Institute (VTPI), the publication "Parking Management Comprehensive Implementation Guide" notes that the provision of secure bicycle parking could potentially result in trip reductions of 5-15%. A conservative approach is assumed and SOV trip generation would be reduced by 5%.

Table 7.3 summarizes the estimated SOV trip reductions and an overall trip generation comparison.

TABLE 7.3: TRIP GENERATION REDUCTION SUMMARY

Trip Generation	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Resident Base Site Trip Generation	5	19	24	19	13	32
Parking Reduction SOV Trips	-1	-6	-7	-5	-4	-9
Transit Reduction SOV Trips	0	-1	-1	-1	0	-1
Increased Vehicle Occupancy Trips	0	-1	-1	-1	0	-1
Increased Cycling Trips	0	-1	-1	-1	-1	-2
Sub-Total Reduction	*-1*	*-9*	*-10*	*-8*	*-5*	*-13*
Reduced Site Trip Generation	***4***	***10***	***14***	***11***	***8***	***19***
Reduction %	***20%***	***47%***	***42%***	***42%***	***38%***	***41%***

As outlined above, the parking supply reduction and noted measures to encourage the use and leverage the available transit and active transportation infrastructure are anticipated to achieve the required reduction in SOV trips generated by the proposed development. It is estimated that:

- Parking supply reduction would account for a potential 30% reduction, based on proposed and required parking supply;
- Given the site location and proximity to GO transit service, transit usage would account for a potential 1% reduction (based upon existing transit commuter modal split characteristic).

  It is noted the uptake in transit usage is anticipated to be higher than the existing baseline usage when the Kitchener GO line improvements are implemented;
- Increasing vehicle occupancy, through unbundling of parking spaces from units, and the encouragement for carpooling would account for a potential 1% reduction;
- Provision of on-site bicycle parking provisions (secure long-term parking areas) would further encourage cycling usage and would account for a potential 5% reduction;

- The cumulative effect of the TDM plan when implemented is anticipated to result in potential reductions of 42% and 41% under the AM and PM peak hours, respectively; and
- Furthermore, the assessment is conservative in that it assumes the uptake of transit and walking modes would be nominal, when there is the potential that a larger portion of the trips generated could be made by the noted modes.

8 Parking Review

8.1 Development Overview

The property owner proposes to develop the site to construct a five-storey residential building providing a total of 80 apartment dwelling units.

A total of 92 parking spaces are proposed via a one-level underground parking structure and at-grade parking. 80 resident spaces and 12 visitor spaces are proposed, provided at rates of 1.00 spaces per unit and 0.15 spaces per unit, respectively. Overall, the vehicular parking supply is provided at a blended rate of 1.15 spaces per dwelling unit.

This supply does not meet the Town of Halton Hills Zoning By-law 2010-0050 (consolidated December 2020) as currently planned.

8.2 Zoning By-law Parking Requirements

The subject site is governed by the Town of Town of Halton Hills Zoning By-law 2010-0050 (consolidated December 2020). The following minimum parking requirements are noted:

- Apartment dwelling units: 1.50 spaces per unit, plus 0.25 parking spaces per unit.

Table 8.1 summarizes the required vehicle parking for the proposed development in comparison to the proposed parking supply.

TABLE 8.1: VEHICLE PARKING REQUIREMENTS VERSUS PROPOSED PARKING SUPPLY

Land Use	Zoning By-law Requirement	Spaces Required	Spaces Proposed	Surplus/ Deficit
Residential Apartment 80 Dwelling Units	Resident: 1.50 spaces/unit Visitor: 0.25 spaces/ unit Total: 1.75 spaces/unit	Resident: 120 spaces Visitor: 20 spaces Total: 140 spaces	Resident: 80 spaces Visitor: 12 spaces Total: 92 spaces	Resident: -40 spaces Visitor: -8 spaces Total: -48 spaces
Total		***140 spaces***	***92 spaces***	***-48 spaces***

The proposed resident and visitor parking supply does not meet the municipal parking requirements. The proposed overall parking supply is theoretically deficient by 48 parking spaces, including 40 resident spaces and eight visitor spaces.

8.3 Rationale and Justification

In our professional opinion the proposed parking rate of 1.15 spaces per unit (inclusive of resident and visitor) is appropriate for the proposed development site.

The rationale for the adequacy of the proposed parking supply is based on the following considerations:

- Introduction of Bill 185;
- The Province of Ontario's Five-Year Climate Change Action Plan;
- Multi-unit dwelling vehicle ownership rates;
- Residential parking standards adopted by other similar context municipalities; and
- Site context and Transportation Demand Management (TDM) initiatives.

8.3.1 Introduction of Bill 185

On 10 April 2024, Ontario's Provincial Government introduced new legislation to assist in meeting its goal of building 1.5 million homes by 2031. Bill 185 received royal assent from the Province of Ontario on 06 June 2024.

As related to vehicular parking requirements, municipalities will no longer have the ability to approve policies or pass zoning regulations which require an owner or occupant to provide and maintain parking on their property, other than bicycle parking for properties in protected Major Transit Station Areas (MTSA) or an area delineated in the official plan of the municipality surrounding and including an existing or planned higher order transit station or stop, within which areas where minimum densities are required by official plans, or in any areas prescribed by regulation.

Under the Town's Official Plan, Office Consolidation, April 2024, per Schedule A7 (Acton Downtown Area Land Use Plan), the subject lands are just outside the boundary of the Acton Downtown Area. The subject lands are located within the Acton GO MTSA area, based upon the map 6h – Acton GO MTSA in the Halton Regional Plan, Office Consolidation, May 2024.

Given the subject site is located within an existing MTSA, per Bill 185, no vehicular parking minimums are required nor apply.

Regardless, the following subsections further demonstrate the suitability of the proposed parking supply in serving the development.

8.3.2 Ontario's Five-Year Climate Change Action Plan

A reduced minimum parking supply requirement for the proposed development would be in conformance with Ontario's Five-Year Climate Change Action Plan that was announced in June 2016. While this plan was released under a previous government, it is still important to take these policies into consideration. Some of the key transportation and land-use planning actions outline are as noted:

- Support Cycling and Walking: Commuter cycling networks will be established across Ontario, targeting routes with high-commuting volumes such as between residential communities, major transit stations and employment areas. There will be more cycling facilities in urban areas, including grade separated routes and cycling signals. There will be more bike parking at transit stations and provincially owned, publicly accessible facilities. Ontario will revise provincial road and highway standards to require commuter cycling infrastructure to be considered for all road and highway construction projects where it is safe and feasible. Ontario will do the same for major transit corridors.
- Reduce Single-Passenger Vehicle Trips: Ontario would provide grants to municipalities and large private employers to implement Transportation Demand Management (TDM) Plans. The plans will be designed to help increase walking, cycling, carpooling, tele-commuting, and flex-work schedules, thereby reducing overall fossil fuel consumption, traffic congestion, and transportation emissions.
- Eliminate Minimum Parking Requirements: Minimum parking requirements would be eliminated over the next five years for municipal zoning by-law, especially in transit corridors and other high density, highly walkable communities. Minimum parking requirements are seen as barrier to creating complete, compact, and mixed-use communities.

This shift away from providing excess residential parking, recognizing that parking absorbs a significant amount of land that could otherwise be used for additional land-development purposes, highlights a changing perspective toward automobile ownership, travel, and the cost of living.

8.3.3 Average Vehicle Ownership

The 2022 Transportation Tomorrow Survey (TTS) data for the subject site area was reviewed to determine vehicle ownership statistics for apartment dwellings.

The subject site is located in TTS Zone 5424, which is bounded by Guelph Street West/Doctor Vanderbent Place to the north, Mill Street to the south, Elmore Drive to the west, and Wallace Street to the east. There are a reported total of 163 apartment units (all ages) within the study zone, and average vehicle ownership is reported as 0.93 vehicles per household. It is noted that 30% of apartment building households within Zone 5424 are zero-car households.

The proposed parking supply for the resident component is 1.00 space per unit, which is higher than the reported average vehicle ownership within this area of Town.

If it is assumed that visitor parking demand is represented by 0.15 spaces per unit, the total parking requirement for an all-ages multi-unit building in this area of the Town would be 1.15 spaces per unit, which aligns with the proposed parking rate of 1.15 spaces per unit.

8.3.4 Other Municipal Zoning By-law Parking Requirements

The proposed reduced apartment resident and visitor parking rates are inline and follows suit of several other municipalities within the Greater Toronto and Hamilton Area (GTHA) that would be comparable to the Town of Halton Hills.

Table 8.2 summarizes the parking standards adopted by municipalities for residential multi-unit buildings.

TABLE 8.2: OTHER MUNICIPALITY ZONING BY-LAW REQUIREMENTS (MULTI-UNIT BUILDINGS)

Municipality	Resident Requirement	Visitor Requirement	Total Requirement
City of Peterborough (Draft Parking ZBL Review and Update)	1.00 space/unit	0.10 spaces/unit	1.10 spaces/unit
City of Kitchener	1.00 space/unit	0.10 – 0.15 spaces/unit	1.10 – 1.15 spaces/unit
City of Kingston	1.00 space/unit	0.15 spaces/unit	1.15 spaces/unit

The municipalities tabulated above are of similar context to the Town of Halton Hills in regard to having similar or less transit provisions and available infrastructure.

The sought reduced blended parking rate of 1.15 spaces/unit is consistent with trends in other municipalities that have updated their parking by-laws to reduce parking in favour of encouraging improved urban design, improved support for investments in public transit and active transportation, and lower reliance on automobile travel.

8.3.5 Site Context and Transportation Demand Management (TDM)

Application of appropriate parking standards will assist in the management of parking demands within the Town.

Other factors that will assist in maintaining lower parking demands that have previously been described or discussed in this study, include the following:

- The site is located adjacent and just outside the boundary of the Acton Downtown Area, and within the Acton GO Major Transit Station Area (MTSA). MTSAs are generally defined as the area within an approximately 500-800 metre radius of a transit station, representing a 10-minute walk.

  Additionally, the Kitchener GO line expansion will operate and provide two-way, all-day, up to 15-minute service;
- The availability of a continuous and well-connected pedestrian network on public streets. The subject site is located within walking distance to many complementary land uses that provide retail and commercial goods and services as well as employment opportunities;
- Given the close proximity to many complementary land uses, prospective residents may not own a vehicle or opt to forego their vehicle based upon the available parking provisions;
- Parking to be unbundled from residential units. That is, parking spaces are rented/sold separately from the dwelling units. Given the availability of transit and close proximity to many complementary land uses that provide retail and commercial goods and services as well as employment opportunities, prospective residents may not own a vehicle or opt to forego their vehicle;
- A reduced parking supply is in line with smart growth policies; and

- Implementation of a comprehensive TDM plan will assist in reducing single-occupancy vehicle (SOV) trips and the associated parking demand.

Section 7 identified a proposed TDM Plan for implementation. To further assist and complement in managing parking demands, the implementation of applicable TDM initiatives is noted to be equally as important when providing lower parking ratios. Examples of initiatives include:

- Unbundling parking from the sale of units; and
- Developments are designed and oriented for pedestrians (i.e., urban form) providing a good pedestrian realm with direct connections to existing continuous municipal networks.

8.3.6 On-Street Parking

The proposed development provides a visitor parking supply of 12 spaces on-site, resulting in a theoretical deficiency of eight spaces compared to the Town's zoning requirement (0.25 spaces per unit).

As noted in **Section 8.3.4**, municipalities similar to the Town of Halton Hills require visitor parking at a supply rate between 0.10 and 0.15 spaces per unit. The proposed visitor parking rate of 0.15 spaces per unit falls on the high end of this range. It is anticipated the visitor parking demand would be adequate for the development and would accommodate the visitor parking demands.

Under a worst-case situation where on-site visitor parking provisions are exceeded, it is noted that any spillover could be accommodated by permitted on-street parking adjacent to the site.

It is reiterated that short term on-street parking is permitted on both sides of Bower Street (east of Elgin Street North), Frederick Street North, and other nearby local roadways.

Based on our site observations, the available on-street parking provisions within 200 metres of the subject site was observed to be under utilized during the weekday evening period. It is anticipated under the worst-case scenario, a spillover of eight vehicles could be accommodated by the existing on-street parking space provisions.

On-street parking space provisions are not delineated; therefore, the available supply is dependent upon how efficiently motorists utilize the on-street provisions.

8.3.7 Summary

A total parking supply of 92 spaces to serve the overall development is proposed at a blended rate of 1.15 spaces/unit. Further broken down to a resident supply provided at 1.00 spaces/unit, and a visitor parking supply provided at 0.15 spaces/unit.

Based on the information presented above, the proposed parking supply is determined to be sufficient for the proposed development.

Justification is provided through new provincial legislation (Bill 185), forecast parking demand based upon average vehicle ownership data, requirements/policies of other similar municipalities having lower parking rates, the surrounding site context, the implementation of the proposed TDM measures/initiatives which would further reduce the on-site parking demands, and available on-street parking spaces.

9 Functional Review

9.1 Access Review

The proposed driveway connection has been assessed to determine whether there are any design issues, operational and/or safety-related concerns that may be affected by the location, and whether an alternative arrangement would be preferred from a design perspective. The key design issues to consider with respect to the driveway locations are discussed in the sections below.

Reference was made to the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR).

9.1.1 Driveway Width and Radii

TAC GDGCR provides suggested typical driveway widths and radii. Per section 8.9.5, Table 8.9.1 of the TAC GDGCR, a typical residential driveway width of 2.0 to 7.3 metres for a two-way operation, and a typical right-turn radius is 3.0 to 4.5 metres is recommended.

The proposed driveway width measures 7.0 metres in width and the proposed turning radii are 3.0 and 9.0 metres. The proposed driveway width and turning radii meet and/or exceed the TAC typical residential driveway dimensions.

9.1.2 Throat Length

Sufficient clear throat length is necessary to avoid blocking on-site circulation and queuing of entering vehicles. Per Section 8.9.10 and Table 8.9.3 of the TAC GDGCR, the minimum clear throat length for a residential driveway located on a collector road is eight meters, for development with less than 100 apartment units.

As the TAC GDGCR does not specify the minimum throat length for a residential driveway located on a local road, the collector road requirement is used as a conservative approach.

Based on the current site plan configuration/layout, a throat length of approximately 8.7 meters is provided, which exceeds the TAC GDGCR requirements.

9.1.3 Driveway Spacing

Per Section 8.9.8 of the TAC GDGCR, "*The minimum spacing between driveways is measured between the end and start of the curb returns*

on the adjacent driveways." This spacing is important to ensure that there are no conflicts between adjacent driveways.

A minimum distance of 1.0 metre[9] is recommended between adjacent low volume driveways for residential properties, along local and collector roadways. The proposed driveway location satisfies the TAC *GDGCR* requirements as currently planned as there is a minimum of 1.0 metre of space between the site driveway access and the next adjacent site driveways to the east and west.

9.1.4 Sight Distance

A sight distance assessment has been conducted for the proposed site access. The assessment has been carried out based on the methodology contained in the TAC GDGCR. Sight distance requirements have been considered for vehicles departing the site access (departure sight distance) and approaching the site access (approach sight distance).

For vehicles approaching the proposed driveway, the minimum stopping sight distance is the distance required for the approaching vehicle to stop safely and avoid a collision. Whereas the departure sight distance represents the minimum distance required for a vehicle to safely enter the major roadway and complete a turning movement without significantly impeding traffic flow or providing the opportunity for conflict.

The assessment uses the following parameters:

- Object Height (vehicle tail or brake light): 0.60 metres;
- Driver Eye Height: 1.08 metres; and
- Top of Car: 1.30 metres.

Paradigm staff completed a desktop review of the site access and confirmed the measurements through site visit.

The measurements for outbound traffic exiting the site were recorded at 5.4 metres from the existing edge of pavement, representing the typical position of a driver performing a turning movement. The measurements for inbound traffic were taken from the centre of the travel lane on Bower Street from which the turning movement would occur.

[9] Transportation Association of Canada, *Geometric Design Guide for Canadian Roads, Chapter 8 – Access*, June 2017, p51.



A design speed of 50 km/h (10 km/h over the posted speed limit of 40 km/h) has been considered for Bower Street.

Table 9.1 summarizes the available and required sight distances for the site access in accordance with TAC GDGCR guidance.

TABLE 9.1: REQUIRED SIGHT DISTANCE CRITERIA

Vehicle Movement	TAC Sight Distance Requirement (m)	Available Sight Distance (m)	Requirement Satisfied
Departure Sight Distance			
Southbound Left Turn – looking left (east)	>120	105.0[1]	Yes
Southbound Left Turn – looking right (west)	>120	105.0[1]	Yes
Southbound Right Turn – looking left (east)	>120	95.0[2]	Yes
Southbound Right Turn – looking right (west)	N/A	N/A	N/A
Approach Sight Distance			
Eastbound Through	>120	65.0[3]	Yes
Westbound Through	>120	65.0[3]	Yes

[1] TAC Guide. June 2017. Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn from Stop
[2] TAC Guide. June 2017. Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop
[3] TAC Guide. June 2017. Table 2.5.2: Stopping Sight Distance on Level Roadways for Automobiles

Findings of the assessment are as follows:

- Bower Street is fairly straight and flat; and
- The available approach and departure sight distances for the site access all exceeds the TAC *GDGCR* requirements.

It should be noted our site visit confirmed that on-street parking is currently permitted on the north side of Bower Street at the proposed site access. The presence of parked vehicles may impede driver's sight lines. To ensure clear and unimpeded sight lines are provided, it is recommended that on-street parking be prohibited within immediate vicinity of the site access.

As the available sight distances satisfy the TAC GDGCR requirements, no significant vehicle sight distance issues are expected.

Appendix G contains site photos illustrating available sight lines in vicinity to the proposed site access.

9.2 Vehicle Manoeuvring

The proposed development provides a full-movement driveway connection with Bower Street.

A site access and circulation assessment has been conducted for the anticipated design vehicles expected on-site, which includes:

- Transportation Association of Canada (TAC) Passenger (P) Vehicle;
- Halton Region Front-End Loader Waste Collection Truck;
- TAC Heavy Single-Unit Truck (HSU) – Delivery vehicle truck; and
- Pumper Fire Truck.

All assessments have been carried out using AutoTURN swept path analysis software.

The analysis indicates all design vehicles can enter the site, travel within the site as required, and exit the site without any conflicts. **Appendix H** contains the vehicle manoeuvring diagrams for reference.

9.3 Pavement Marking and Signage Plan

A Pavement Marking and Signage Plan (PMSP) was developed in AutoCAD software to illustrate the locations and details of all signs and pavement markings on site. The plan followed the guidelines of OTM Book 5 – Regulatory Signs.

Appendix I contains the developed PMSP for reference.



10 Conclusions and Recommendations

10.1 Conclusions

Based on the investigations carried out, it is concluded that:

- **Base Year (2025) Traffic Conditions:** the study area intersections are currently operating at acceptable levels of service and well within capacity (v/c < 0.85) during the weekday AM and PM peak hours;
- **Background Traffic Conditions (without the proposed development):** the study area intersections are forecast to continue to operate at acceptable levels of services and well within capacity (v/c < 0.85) under the 2033 horizon. The exception includes the following movements:
  - The westbound shared left-turn/through movement at Main Street and Mill Street reports v/c ratios of 0.87 and 0.90 during the AM peak hour under 2028 and 2033 horizons, respectively.

    Under the existing signal timing plan, the movement is reported to be approaching capacity. The identified critical movement is determined not to be a major issue as the movement can be mitigated/improved through optimization of signal timing splits within the existing cycle length; and
  - The southbound shared left-turn/through/right-turn movement at Mill Street and Eastern Avenue/Bower Street operates at a LOS F during the PM peak hour under the 2028 and 2033 horizons.

    While the movement would be characterized by LOS F, this is not considered a critical issue as the southbound shared movement is forecast to operate well within capacity (v/c = 0.20 under 2028, and 0.28 under 2033). This is not an unusual condition where a minor road operating under stop control intersects with a major road.
- **Development Trip Generation:** with full development of the subject site, it is forecast to generate 24 automobile trips during the weekday AM peak hour, and 32 automobile trips during the weekday PM peak hour. The proposed development is considered a low trip generator;
- **Total Traffic Conditions (with the proposed development):** the net impact of the proposed development is considered minor. All study area intersections are forecast to operate at

acceptable levels of service and within capacity under the 2033 horizon.

The previously identified critical movements under background traffic conditions would continue to be identified as critical movements under total traffic conditions.

No additional critical movements are identified with the addition of site-generated traffic.

- **Site Traffic Impact:** the additional site-generated traffic is minor and not anticipated to result in any adverse impact to the adjacent transportation network.

  No intersection geometric improvements or traffic control upgrades have been identified/required to accommodate the proposed residential development;

- **Collision Review:** review of historical collision data for the study area intersections indicates the reported collisions and the resultant impact types are generally unremarkable, with no reported high impact collisions or reported fatal collisions.

  The most common collision impact type reported were rear-end and turning movement collisions. Based upon our review, the majority of reported collisions were due to driver error, and not a function of the road or intersection design, that is, poor driver judgement, not obeying traffic rules/signage, driver inattentiveness, etc.;

- **Transportation Demand Management (TDM):** a TDM Plan for the proposed development has been prepared and applicable TDM measures/initiatives have been identified which would be implemented by the applicant/site Owner.

  The implementation of the TDM Plan is a vital component in reducing single-occupancy vehicle (SOV) travel, and leveraging the existing and planned transit and active transportation infrastructure, which in turn reduces the number of site-generated vehicular trips and the associated demand for parking;

- **Parking Review:** Rationale and supporting data have been documented to demonstrate the proposed parking rate/parking supply will be adequate to serve the proposed development.

  Justification is provided through new provincial legislation (Bill 185), forecast parking demand based upon average vehicle ownership data, policies/parking requirements of other similar municipalities having lower parking rates, the surrounding site context, the implementation of the proposed TDM



measures/initiatives which would further reduce the on-site parking demands, and available on-street parking spaces.

- **Functional Traffic Design Study:** a functional traffic design study was conducted to ensure proposed site access design complies with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). No major issues or concerns are identified; and
- **Vehicle Maneuvering:** a functional review of the site plan and underground plan was conducted. No major conflicts are identified, and it was confirmed the access driveway, loading area, and parking layouts have been designed accordingly for the anticipated design vehicles. That is, all vehicles expected on-site can ingress, circulate/traverse, and egress the site without and conflicts.

10.2 Recommendations

Based on the findings of this study, the following is recommended:

- The Town of Halton Hills recognize the conclusions drawn above;
- From a transportation perspective, the planning applications sought should be approved as the development is determined to have a minor impact on the adjacent transportation network, and the proposed parking supply provisions will adequately serve the development given the adjacent supporting transit and active transportation infrastructure/networks; and
- The proposed Transportation Demand Management (TDM) Plan should be implemented.

Appendix A

Pre-Study Consultation

From:	Ivan Drewnitski
To:	Adrian Soo; Wenting Li
Subject:	RE: 97 Bower Street - Transportation Impact Study Terms of Reference
Date:	April 11, 2025 9:29:56 AM
Attachments:	image001.png image002.png image003.png

Thanks Adrian, you too!

From: Adrian Soo <asoo@ptsl.com>
Sent: Friday, April 11, 2025 9:18 AM
To: Ivan Drewnitski <idrewnitski@haltonhills.ca>; Wenting Li <wli@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

[EXTERNAL EMAIL]

Morning Ivan,

Confirming receipt of the collision and STP data.

Thank you.

Have a great weekend!

Regards,

Adrian Soo, P.Eng.
Senior Project Manager, Associate
(He/Him)

paradigm TRANSPORTATION SOLUTIONS LIMITED

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5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 416.479.9684 x509
m: 647.637.4946
e: asoo@ptsl.com
w: www.ptsl.com

From: Ivan Drewnitski <idrewnitski@haltonhills.ca>
Sent: April 11, 2025 9:09 AM
To: Wenting Li <wli@ptsl.com>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

Hi Adrian,

Please see attached the collisions and STP for Mill & Main.

Ivan

From: Ivan Drewnitski
Sent: Monday, April 7, 2025 4:18 PM
To: Wenting Li <wli@ptsl.com>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

Hey Adrian,

We have sent the request to CIMA+, they are merging the TES system and I believe are backlogged with requests.

Thanks,

Ivan

From: Wenting Li <wli@ptsl.com>
Sent: Monday, April 7, 2025 12:18 PM
To: Ivan Drewnitski <idrewnitski@haltonhills.ca>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

[EXTERNAL EMAIL]

Afternoon Ivan,

Hope you had a great weekend.

I am following up on the requested collision data. If you could please provide an update, that would be greatly appreciated.

Thank you.

Regards,
Wenting Li, M.A.Sc., P.Eng.
Transportation Engineer
(She/Her)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 416.479.9684 x508
m: 647.850.9180
e: wli@ptsl.com
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From: Wenting Li
Sent: March 24, 2025 9:17 PM
To: Ivan Drewnitski <idrewnitski@haltonhills.ca>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

Great, thank you, Ivan!

Regards,
Wenting Li, M.A.Sc., P.Eng.
Transportation Engineer
(She/Her)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
p: 416.479.9684 x508
m: 647.850.9180
e: wli@ptsl.com
w: www.ptsl.com

From: Ivan Drewnitski <idrewnitski@haltonhills.ca>
Sent: March 24, 2025 7:54 PM
To: Wenting Li <wli@ptsl.com>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

Hi Wenting,

I have forward the request to my road safety team.

I will get back to you once CIMA+ extracts the information for us.

Thanks,

Ivan

From: Wenting Li <wli@ptsl.com>
Sent: Monday, March 24, 2025 2:14 PM
To: Ivan Drewnitski <idrewnitski@haltonhills.ca>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

[EXTERNAL EMAIL]

Afternoon Ivan,

Thank you for your clarification and providing the background developments reports. We will conduct our TIS accordingly.

For the safety review, could you please provide the collision data for the past five years at the study area intersections (listed below)?

- Main Street and Mill Street (signalized);
- Mill Street and Frederick Street (unsignalized);
- Mill Street and Bower Street/Eastern Avenue (unsignalized);
- Bower Street and Frederick Street/Proposed Site Access (unsignalized);
- St Alban's Dr and Main Street North (unsignalized);
- Bower Street and Willow Street Noth (unsignalized); and
- Willow Street North and Mill Street East (unsignalized).

Thank you.

Regards,
Wenting Li, M.A.Sc., P.Eng.
Transportation Engineer
(She/Her)

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From: Ivan Drewnitski <idrewnitski@haltonhills.ca>

Sent: March 21, 2025 2:53 PM
To: Wenting Li <wli@ptsl.com>; Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

Please see the background developments below.

Bkgrd Dev

Best,

Ivan

From: Ivan Drewnitski
Sent: Friday, March 21, 2025 2:09 PM
To: Wenting Li <wli@ptsl.com>; Adrian Soo <asoo@ptsl.com>
Subject: RE: 97 Bower Street - Transportation Impact Study Terms of Reference

Hi Wenting,

Thank you for circulating your proposed Terms of Reference. Please see my comments below in red. I have attached the Towns TIS guidelines above for your reference.

To summarize our call yesterday, with this being in Acton and 8 stories, from the publics perspective this is a major development, especially being beside downtown core. We do presently have complaints along Bower Street, I do think this will be beneficial for the applicant's stance to include those intersections, especially when it comes to the public consultation. The present concerns we see is speeding and cut-through traffic, and Willow and Bower is a key intersection within the study area that gets utilized.

Thanks,

TOWN OF HALTON HILLS

Ivan Drewnitski, C.E.T.
Transportation Planning Coordinator
905-873-2600 ext. 2328
idrewnitski@haltonhills.ca
haltonhills.ca

From: Wenting Li <wli@ptsl.com>
Sent: Tuesday, February 18, 2025 12:57 PM
To: Ivan Drewnitski <idrewnitski@haltonhills.ca>
Cc: Adrian Soo <asoo@ptsl.com>
Subject: 97 Bower Street - Transportation Impact Study Terms of Reference

[EXTERNAL EMAIL]

Hello Ivan,

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct a Transportation Impact Study for a proposed residential development at 97 Bower Street in the Town of Halton Hills, in support of Official Plan Amendment (OPA), Zoning By-law Amendment (ZBA), and Site Plan Approval (SPA) applications.

We are seeking agreement and/or direction on our proposed scope of work as noted in the Record of Pre-Consultation Meeting Minutes (enclosed for your reference). In addition, please see the enclosed proposed site plan for your reference.

We kindly ask that you confirm whether the proposed Work Plan is acceptable and provide the requested information to undertake this assessment. Your effort to prioritize this information request is greatly appreciated.

Proposed Work Plan

Background

- The site is located at the municipal address of 97 Bower Street in the Town of Halton Hills. The site is located adjacent and just outside the boundary of the Acton Downtown Area, and within the Acton GO Major Transit Station Area (MTSA);
- The property owner proposes to construct an eight-storey residential building providing a total of 140 apartment dwelling units;
- Vehicle access is proposed via a single full-movement connection with Bower Street, which is located opposite of Frederick Street North; and
- A total of 161 parking spaces are proposed (at a parking rate of 1.15 spaces per unit) via a one-level underground structure and at-grade parking.

Study Intersections

- Main Street and Mill Street (signalized);
- Mill Street and Frederick Street (unsignalized);
- Mill Street and Bower Street/Eastern Avenue (unsignalized); and
- Bower Street and Frederick Street/Proposed Site Access (unsignalized).
- St Alban's Dr and Main Street North
- Bower Street and Willow Street Noth
- Willow Street North and Mill Street East

- **Please provide the traffic signal timing plan data for the intersection of Main Street and Mill Street, or advise whom to contact to obtain the STP data**
- **Paradigm will collect turning movement count data in February/March 2025 (typical week, avoiding March break or any other irregular day).**

Traffic Operational Analysis

- The study periods will be the weekday AM and PM peak hours (i.e., typical commuter periods); Data collection should include at least two hours of traffic

and pedestrian counts during each of the AM and PM peak periods

- The horizon years for assessment will be the base year (2025), anticipated full build-out year, and a period of five years from full build-out (full build-out year subject to confirmation with the applicant);
- Traffic forecasts will include and account for general background growth and other area development site traffic;
    - Town staff to advise on any background developments to be accounted for within the traffic forecasts.

      Through a review of the Town's Active Development Applications, the following background developments have been identified. Please confirm and provide accompanying TIS reports where available. If TIS reports are unavailable, can you please detail the development statistics, and trip generation will be estimated and assigned.
        - ID 18 – 49 Commerce Crescent (It is outside the study area - no need to include this application)
        - ID 21 & 170 – 125 McDonald Boulevard (Medium density residential – street townhomes)
        - ID 218 – 47 Maria Street (apartment dwelling with 12 dwelling units)
        - ID 229 – 24 Commerce Crescent (It is outside the study area - no need to include this application)

    - **Town staff to advise on the growth rate to be applied to Main Street, Mill Street, Frederick Street, Bower Street, and Eastern Avenue. Alternatively, please provide historical TMC/ATR data such that a growth rate can be calculated for use.**

- The study area intersections will be analyzed following Highway Capacity Manual (HCM) methodologies via Synchro 12 software;
- The analysis will determine if there are any operational deficiencies during the study periods, and if mitigation measures are required;
- The study will follow the Halton Region Transportation Impact Study Guidelines (January 2015); The study shall comply with the Towns Transportation Impact Study Guidelines.
- Trip generation will be based on data from the ITE Trip Generation Manual (11th Edition), specifically Land Use Code 221 - Multifamily Housing (Mid-Rise); and (Please confirm the trip generation table, including inbound and outbound trips, with Town staff before proceeding to the next step)
- Trip distribution will be based on a review of existing travel patterns given the adjacent residential land uses. Trip distribution must be properly documented; any external references used for the assumption of trip distribution must be appended to the report for our reference and review.

- Please ensure no trip generation reduction is applied.

- ***Town staff to confirm the proposed analysis approach is acceptable.***

Parking Review

- It is recognized the subject site is within a Major Transit Station Area (MTSA). Accordingly, the municipal parking requirements are not required to be satisfied per Bill 185.

- Regardless, a Parking Strategy will be developed for the site, where it will demonstrate the appropriateness of the proposed parking supply from a practical standpoint and how it relates to the proposed Transportation Demand Management (TDM) Plan developed. Vice-versa, the TDM Plan to be developed will factor and consider the proposed parking supply, that is, the measures considered will account for the parking rate/supply and ensure that appropriate means are provided to offset and account for alternative travel modes with reduced parking. It also needs to include an analysis of on-street parking demand and capacity in the vicinity of the development and the impact of the subject development on the on-street parking.

Transportation Demand Management (TDM) Plan (TDMP)

- A TDM Plan will be developed to outline existing and proposed TDM measures for implementation, assess their likely effectiveness for the proposed development, and determine implementation requirements to facilitate their use. The TDM Plan should propose specific and measurable actions along with assessing car-share program. In addition, it should also be in alignment with the Town's Green Development Standards (GDS). The study shall only provide the TDM measures that will be carried forward, and not recommended.
- Bicycle parking spaces and a detail of the proposed bike racks need to be included in the TIS report.

Access and Circulation Review (ACR)

- Access (Driveway width and curb radii, clear throat length, corner clearance and driveway spacing, daylight triangle, etc.) and Sight Distance Review will be conducted for the proposed site access driveway following the methodology/guidance from the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR); and A photo capturing the clear sightline from the site visit should be included in the report.
- A vehicle swept path/circulation review will be completed using AutoTURN and include vehicle access and egress, clearance and swept path manoeuvres at the access connection and within the site based on anticipated design vehicles (i.e., passenger vehicle, typical delivery trucks, waste collection truck, fire truck). Additionally, a vehicle turning plan must be submitted, covering movements from the site driveway entrance to the underground parking garage, as well as

for the underground internal driveway as part of the SPA process.

- Also, the report should include pedestrians and cyclist analysis within (internal circulation) and around the site.

Safety Review

- It needs to conduct a collision analysis for the past five years at study intersections and propose any required change for intersections control devise in the study area (such as AWSC and signal warrant analysis)

Pavement Marking and Signage Plan (PMSP)

- A PMSP will be developed to illustrate the locations and details of all signs and pavement markings on site.

Requested Information

1. **Traffic signal timing plan data** for the Main Street and Mill Street intersection.
2. **Growth rate** to be applied to Main Street, Mill Street, Frederick Street, Bower Street, and Eastern Avenue. Alternatively, please provide historical TMC/ATR data such that a growth rate can be calculated for use. Please utilize a standard 2% per annum for all movements.
3. **Planned background developments** to include within the traffic forecasts. Through a review of the Town's Active Development Applications, the following background developments have been identified. Please confirm and provide accompanying TIS reports where available, if a study is not available, development statistics will suffice. Background developments will follow in a separate email.
    a. ID 18 – 49 Commerce Crescent
    b. ID 21 & 170 – 125 McDonald Boulevard
    c. ID 218 – 47 Maria Street
    d. ID 229 – 24 Commerce Crescent
4. **Planned future network improvements** that will impact the identified road network, if any. It is noted the Acton Alternative Route is recommended in the Halton Region TMP (September 2011); however, it is subject to further study and approval by MTO. Given this, our future analyses will use the existing road network and intersection lane configurations. Please confirm. Utilize existing road network and intersection lane configurations.

Thank you for reviewing the work plan and providing information where available. If there are any questions, please do not hesitate to contact me by phone or e-mail.

Regards,

Wenting Li, M.A.Sc., P.Eng.
Transportation Engineer
(She/Her)

5A-150 Pinebush Road, Cambridge ON, N1R 8J8
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Appendix B

Traffic Data

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025

Turning Movement Data

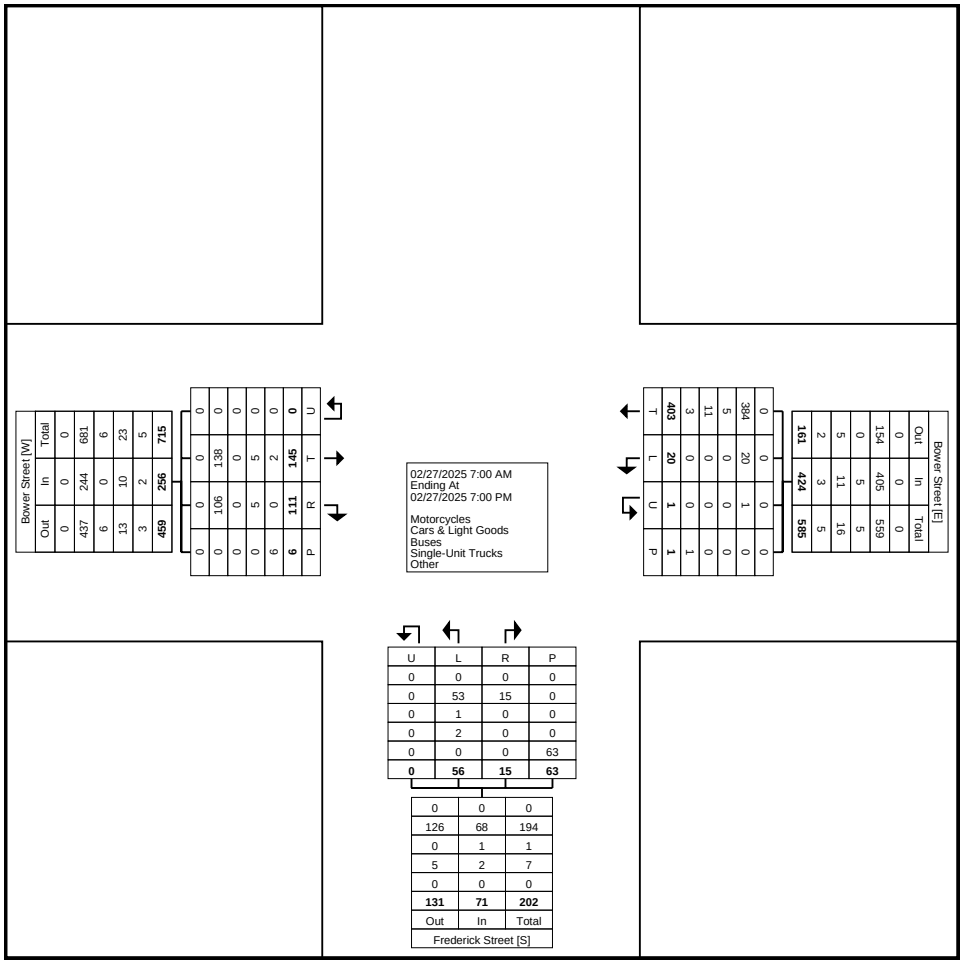
Start Time	Bower Street Eastbound					Bower Street Westbound					Frederick Street Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	2	0	0	0	2	0	3	0	0	3	0	0	0	0	0	5
7:15 AM	2	1	0	0	3	0	2	0	0	2	0	0	0	0	0	5
7:30 AM	3	2	0	0	5	0	5	0	0	5	1	0	0	0	1	11
7:45 AM	4	2	0	0	6	0	6	0	0	6	0	0	0	0	0	12
Hourly Total	11	5	0	0	16	0	16	0	0	16	1	0	0	0	1	33
8:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
8:15 AM	3	6	0	0	9	1	2	0	0	3	0	0	0	5	0	12
8:30 AM	3	1	0	0	4	1	8	0	0	9	1	0	0	5	1	14
8:45 AM	2	7	0	0	9	0	18	0	0	18	3	1	0	5	4	31
Hourly Total	8	14	0	0	22	2	31	0	0	33	4	1	0	15	5	60
9:00 AM	4	5	0	1	9	3	8	0	0	11	0	0	0	2	0	20
9:15 AM	7	2	0	1	9	0	7	0	0	7	5	1	0	1	6	22
9:30 AM	1	2	0	1	3	1	4	0	0	5	4	0	0	2	4	12
9:45 AM	3	0	0	0	3	0	15	0	0	15	5	0	0	0	5	23
Hourly Total	15	9	0	3	24	4	34	0	0	38	14	1	0	5	15	77
10:00 AM	2	3	0	0	5	0	7	0	0	7	1	0	0	0	1	13
10:15 AM	3	0	0	1	3	2	3	0	0	5	2	2	0	3	4	12
10:30 AM	4	3	0	0	7	0	7	0	0	7	1	0	0	2	1	15
10:45 AM	1	2	0	0	3	0	4	0	0	4	3	0	0	0	3	10
Hourly Total	10	8	0	1	18	2	21	0	0	23	7	2	0	5	9	50
11:00 AM	5	3	0	0	8	0	8	0	0	8	1	0	0	1	1	17
11:15 AM	4	1	0	0	5	1	7	0	0	8	1	1	0	0	2	15
11:30 AM	2	2	0	0	4	1	8	0	0	9	0	1	0	1	1	14
11:45 AM	3	2	0	0	5	0	8	0	0	8	0	1	0	1	1	14
Hourly Total	14	8	0	0	22	2	31	0	0	33	2	3	0	3	5	60
12:00 PM	4	6	0	0	10	0	8	0	0	8	3	0	0	0	3	21
12:15 PM	3	3	0	0	6	0	11	0	0	11	0	0	0	1	0	17
12:30 PM	7	2	0	1	9	1	9	0	0	10	1	0	0	1	1	20
12:45 PM	4	2	0	0	6	0	9	0	0	9	0	0	0	0	0	15
Hourly Total	18	13	0	1	31	1	37	0	0	38	4	0	0	2	4	73
1:00 PM	2	1	0	0	3	3	10	0	0	13	3	1	0	0	4	20
1:15 PM	2	3	0	0	5	0	9	0	0	9	0	0	0	0	0	14
1:30 PM	2	4	0	0	6	0	15	0	0	15	0	0	0	1	0	21
1:45 PM	0	4	0	0	4	1	12	0	0	13	1	1	0	0	2	19
Hourly Total	6	12	0	0	18	4	46	0	0	50	4	2	0	1	6	74
2:00 PM	4	1	0	0	5	2	7	0	0	9	3	0	0	0	3	17

2:15 PM	0	1	0	0	1	1	10	0	0	11	0	0	0	0	0	12
2:30 PM	1	0	0	0	1	0	8	0	0	8	0	0	0	1	0	9
2:45 PM	2	0	0	0	2	0	16	0	0	16	1	1	0	0	2	20
Hourly Total	7	2	0	0	9	3	41	0	0	44	4	1	0	1	5	58
3:00 PM	1	1	0	0	2	1	8	0	0	9	1	1	0	1	2	13
3:15 PM	5	3	0	0	8	0	13	0	0	13	2	0	0	1	2	23
3:30 PM	7	6	0	0	13	0	21	0	0	21	1	0	0	0	1	35
3:45 PM	6	3	0	0	9	0	11	1	0	12	2	1	0	6	3	24
Hourly Total	19	13	0	0	32	1	53	1	0	55	6	2	0	8	8	95
4:00 PM	4	5	0	0	9	0	11	0	0	11	1	0	0	1	1	21
4:15 PM	5	1	0	0	6	0	12	0	0	12	0	0	0	4	0	18
4:30 PM	3	6	0	0	9	0	8	0	0	8	2	0	0	3	2	19
4:45 PM	0	2	0	0	2	0	15	0	0	15	1	0	0	1	1	18
Hourly Total	12	14	0	0	26	0	46	0	0	46	4	0	0	9	4	76
5:00 PM	4	3	0	0	7	1	5	0	0	6	1	1	0	0	2	15
5:15 PM	1	4	0	0	5	0	6	0	1	6	1	0	0	4	1	12
5:30 PM	3	2	0	1	5	0	7	0	0	7	1	0	0	0	1	13
5:45 PM	2	0	0	0	2	0	9	0	0	9	0	0	0	0	0	11
Hourly Total	10	9	0	1	19	1	27	0	1	28	3	1	0	4	4	51
6:00 PM	3	0	0	0	3	0	6	0	0	6	0	0	0	5	0	9
6:15 PM	4	1	0	0	5	0	4	0	0	4	1	1	0	3	2	11
6:30 PM	4	2	0	0	6	0	7	0	0	7	2	0	0	2	2	15
6:45 PM	4	1	0	0	5	0	3	0	0	3	0	1	0	0	1	9
Hourly Total	15	4	0	0	19	0	20	0	0	20	3	2	0	10	5	44
Grand Total	145	111	0	6	256	20	403	1	1	424	56	15	0	63	71	751
Approach %	56.6	43.4	0.0	-	-	4.7	95.0	0.2	-	-	78.9	21.1	0.0	-	-	-
Total %	19.3	14.8	0.0	-	34.1	2.7	53.7	0.1	-	56.5	7.5	2.0	0.0	-	9.5	-
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	138	106	0	-	244	20	384	1	-	405	53	15	0	-	68	717
% Cars & Light Goods	95.2	95.5	-	-	95.3	100.0	95.3	100.0	-	95.5	94.6	100.0	-	-	95.8	95.5
Buses	0	0	0	-	0	0	5	0	-	5	1	0	0	-	1	6
% Buses	0.0	0.0	-	-	0.0	0.0	1.2	0.0	-	1.2	1.8	0.0	-	-	1.4	0.8
Single-Unit Trucks	5	5	0	-	10	0	11	0	-	11	2	0	0	-	2	23
% Single-Unit Trucks	3.4	4.5	-	-	3.9	0.0	2.7	0.0	-	2.6	3.6	0.0	-	-	2.8	3.1
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	0.2	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	2	0	0	-	2	0	2	0	-	2	0	0	0	-	0	4
% Bicycles on Road	1.4	0.0	-	-	0.8	0.0	0.5	0.0	-	0.5	0.0	0.0	-	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	6	-	-	-	-	1	-	-	-	-	63	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025

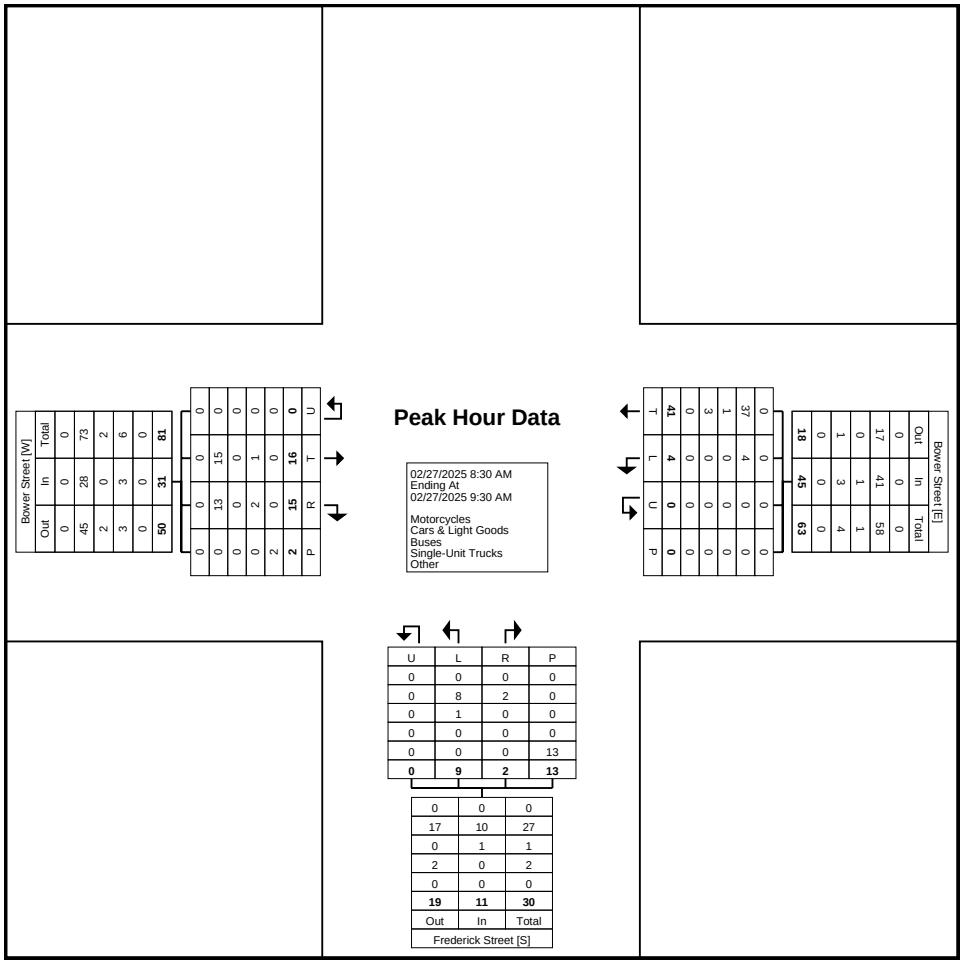
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Bower Street Eastbound					Bower Street Westbound					Frederick Street Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
8:30 AM	3	1	0	0	4	1	8	0	0	9	1	0	0	5	1	14
8:45 AM	2	7	0	0	9	0	18	0	0	18	3	1	0	5	4	31
9:00 AM	4	5	0	1	9	3	8	0	0	11	0	0	0	2	0	20
9:15 AM	7	2	0	1	9	0	7	0	0	7	5	1	0	1	6	22
Total	16	15	0	2	31	4	41	0	0	45	9	2	0	13	11	87
Approach %	51.6	48.4	0.0	-	-	8.9	91.1	0.0	-	-	81.8	18.2	0.0	-	-	-
Total %	18.4	17.2	0.0	-	35.6	4.6	47.1	0.0	-	51.7	10.3	2.3	0.0	-	12.6	-
PHF	0.571	0.536	0.000	-	0.861	0.333	0.569	0.000	-	0.625	0.450	0.500	0.000	-	0.458	0.702
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	15	13	0	-	28	4	37	0	-	41	8	2	0	-	10	79
% Cars & Light Goods	93.8	86.7	-	-	90.3	100.0	90.2	-	-	91.1	88.9	100.0	-	-	90.9	90.8
Buses	0	0	0	-	0	0	1	0	-	1	1	0	0	-	1	2
% Buses	0.0	0.0	-	-	0.0	0.0	2.4	-	-	2.2	11.1	0.0	-	-	9.1	2.3
Single-Unit Trucks	1	2	0	-	3	0	3	0	-	3	0	0	0	-	0	6
% Single-Unit Trucks	6.3	13.3	-	-	9.7	0.0	7.3	-	-	6.7	0.0	0.0	-	-	0.0	6.9
Articulated Trucks	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
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	13	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025



Bower Street [W]							
Total	0	73	2	6	0	**81**
In	0	28	0	3	0	**31**
Out	0	45	2	3	0	**50**

0	0	0	0	0	**0**	U
0	15	0	1	0	**16**	T
0	13	0	2	0	**15**	R
0	0	0	0	2	**2**	P

T	**41**	0	3	1	37	0
L	**4**	0	0	0	4	0
U	**0**	0	0	0	0	0
P	**0**	0	0	0	0	0

18	0	1	0	17	0	Out
45	0	3	1	41	0	In
63	0	4	1	58	0	Total

U	L	R	P
0	0	0	0
0	8	2	0
0	1	0	0
0	0	0	0
0	0	0	13
0	**9**	**2**	**13**

0	0	0
17	10	27
0	1	1
2	0	2
0	0	0
19	**11**	**30**
Out	In	Total
Frederick Street [S]		

Turning Movement Peak Hour Data Plot (8:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Bower Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025

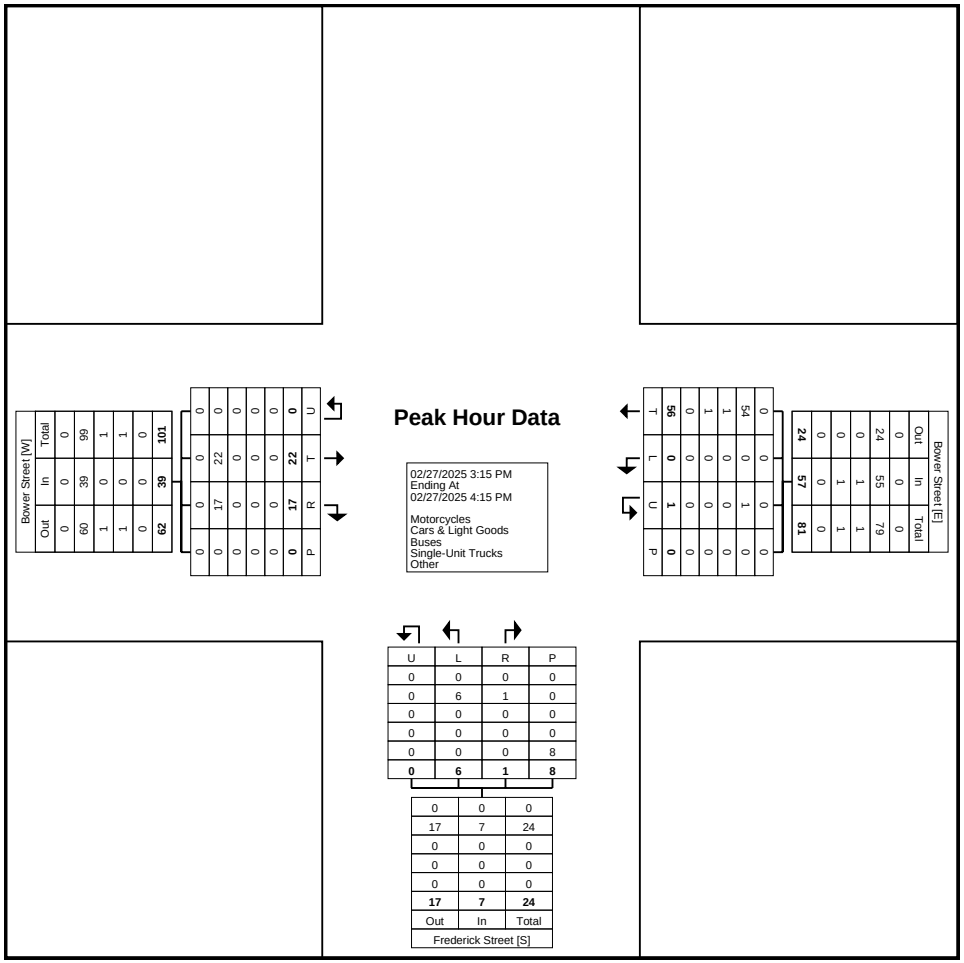
Turning Movement Peak Hour Data (3:15 PM)

Start Time	Bower Street Eastbound					Bower Street Westbound					Frederick Street Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
3:15 PM	5	3	0	0	8	0	13	0	0	13	2	0	0	1	2	23
3:30 PM	7	6	0	0	13	0	21	0	0	21	1	0	0	0	1	35
3:45 PM	6	3	0	0	9	0	11	1	0	12	2	1	0	6	3	24
4:00 PM	4	5	0	0	9	0	11	0	0	11	1	0	0	1	1	21
Total	22	17	0	0	39	0	56	1	0	57	6	1	0	8	7	103
Approach %	56.4	43.6	0.0	-	-	0.0	98.2	1.8	-	-	85.7	14.3	0.0	-	-	-
Total %	21.4	16.5	0.0	-	37.9	0.0	54.4	1.0	-	55.3	5.8	1.0	0.0	-	6.8	-
PHF	0.786	0.708	0.000	-	0.750	0.000	0.667	0.250	-	0.679	0.750	0.250	0.000	-	0.583	0.736
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	22	17	0	-	39	0	54	1	-	55	6	1	0	-	7	101
% Cars & Light Goods	100.0	100.0	-	-	100.0	-	96.4	100.0	-	96.5	100.0	100.0	-	-	100.0	98.1
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	0.0	0.0	-	-	0.0	-	1.8	0.0	-	1.8	0.0	0.0	-	-	0.0	1.0
Single-Unit Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Single-Unit Trucks	0.0	0.0	-	-	0.0	-	1.8	0.0	-	1.8	0.0	0.0	-	-	0.0	1.0
Articulated Trucks	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
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
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Count Name: Bower Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025



Bower Street [W]	U	T	R	P	Total
Out	0	0	17	0	62
In	0	22	17	0	39
Total	0	22	34	0	101

Bower Street [E]	T	L	U	P	Total
Out	24	0	0	0	81
In	55	0	1	1	57
Total	79	0	1	1	24

U	L	R	P
0	0	0	0
0	6	1	0
0	0	0	0
0	0	0	0
0	0	0	8
0	**6**	**1**	**8**

0	0	0
17	7	24
0	0	0
0	0	0
0	0	0
17	**7**	**24**
Out	In	Total

Turning Movement Peak Hour Data Plot (3:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Willow Street N
Site Code: 240109
Start Date: 04/01/2025

Turning Movement Data

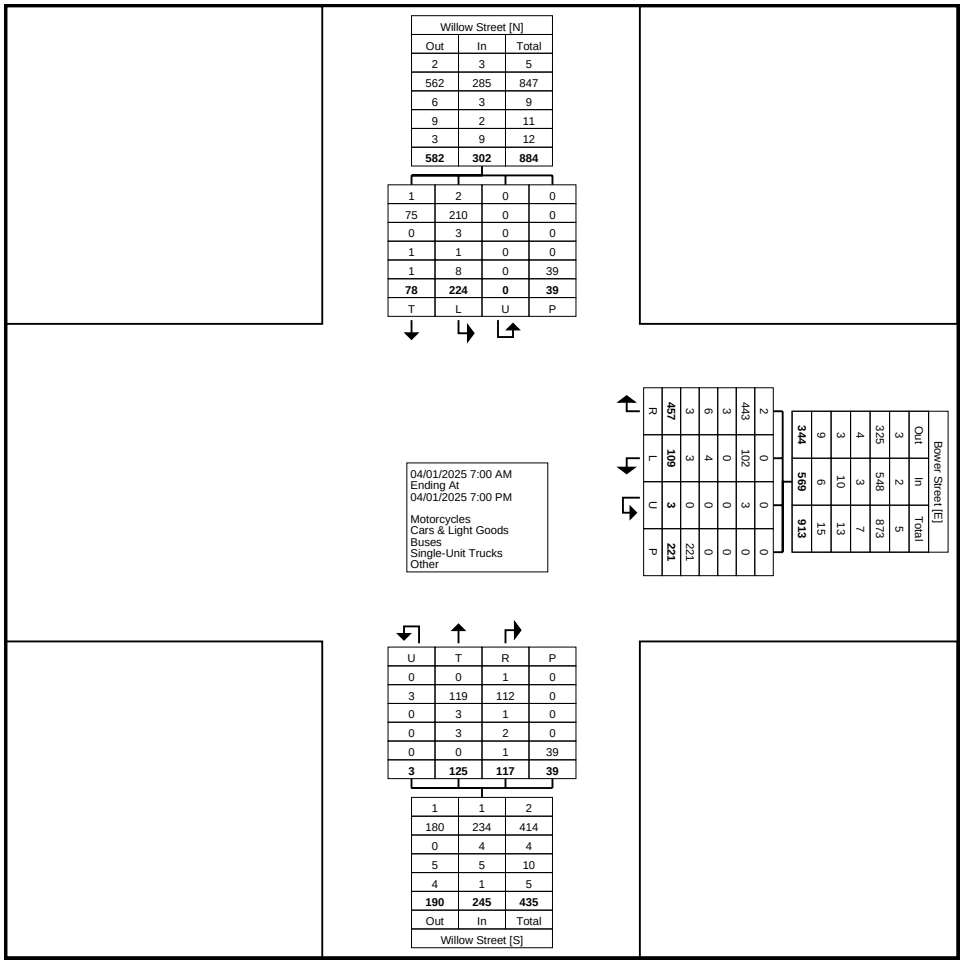
Start Time	Bower Street Westbound					Willow Street Northbound					Willow Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
7:00 AM	0	1	0	1	1	0	2	0	0	2	3	0	0	1	3	6
7:15 AM	2	2	0	1	4	4	2	0	0	6	8	0	0	0	8	18
7:30 AM	1	6	0	1	7	3	1	0	0	4	6	1	0	0	7	18
7:45 AM	1	3	0	0	4	2	0	0	0	2	2	0	0	0	2	8
Hourly Total	4	12	0	3	16	9	5	0	0	14	19	1	0	1	20	50
8:00 AM	0	9	0	0	9	0	1	0	0	1	6	2	0	0	8	18
8:15 AM	1	6	0	2	7	2	4	0	0	6	3	0	0	0	3	16
8:30 AM	1	11	0	2	12	1	4	0	0	5	11	1	0	1	12	29
8:45 AM	4	13	0	13	17	6	1	0	0	7	8	1	0	0	9	33
Hourly Total	6	39	0	17	45	9	10	0	0	19	28	4	0	1	32	96
9:00 AM	2	7	1	6	10	1	4	0	0	5	3	4	0	0	7	22
9:15 AM	3	8	0	2	11	0	3	0	1	3	6	2	0	0	8	22
9:30 AM	0	7	0	3	7	0	2	0	3	2	2	3	0	0	5	14
9:45 AM	6	6	0	37	12	5	1	0	1	6	2	1	0	1	3	21
Hourly Total	11	28	1	48	40	6	10	0	5	16	13	10	0	1	23	79
10:00 AM	1	5	0	3	6	1	2	0	2	3	2	2	0	2	4	13
10:15 AM	3	3	0	1	6	1	2	0	0	3	3	0	0	0	3	12
10:30 AM	3	6	0	1	9	2	5	0	0	7	4	1	0	1	5	21
10:45 AM	1	12	0	1	13	2	1	0	0	3	9	2	0	1	11	27
Hourly Total	8	26	0	6	34	6	10	0	2	16	18	5	0	4	23	73
11:00 AM	2	11	0	43	13	4	3	0	0	7	4	1	0	2	5	25
11:15 AM	2	6	0	0	8	4	6	0	0	10	1	4	0	0	5	23
11:30 AM	3	3	0	1	6	3	2	0	0	5	5	4	0	1	9	20
11:45 AM	2	11	0	0	13	1	2	0	0	3	5	1	0	0	6	22
Hourly Total	9	31	0	44	40	12	13	0	0	25	15	10	0	3	25	90
12:00 PM	0	15	0	0	15	2	4	0	0	6	2	1	0	1	3	24
12:15 PM	2	12	0	0	14	1	3	0	0	4	4	1	0	0	5	23
12:30 PM	6	3	0	2	9	2	1	0	0	3	3	3	0	0	6	18
12:45 PM	2	5	0	1	7	2	5	0	1	7	3	4	0	0	7	21
Hourly Total	10	35	0	3	45	7	13	0	1	20	12	9	0	1	21	86
1:00 PM	0	9	0	1	9	2	0	0	1	2	6	2	0	3	8	19
1:15 PM	3	15	0	1	18	2	1	0	0	3	3	3	0	0	6	27
1:30 PM	3	7	0	2	10	3	5	1	0	9	4	2	0	0	6	25
1:45 PM	3	11	1	0	15	2	0	1	2	3	5	3	0	0	8	26
Hourly Total	9	42	1	4	52	9	6	2	3	17	18	10	0	3	28	97
2:00 PM	4	8	0	0	12	1	5	0	2	6	7	1	0	2	8	26

2:15 PM	3	8	0	0	11	2	3	0	0	5	2	1	0	0	3	19
2:30 PM	1	10	0	1	11	3	1	0	2	4	4	0	0	1	4	19
2:45 PM	1	12	0	3	13	1	4	0	3	5	7	0	0	1	7	25
Hourly Total	9	38	0	4	47	7	13	0	7	20	20	2	0	4	22	89
3:00 PM	3	13	0	1	16	5	2	0	1	7	3	1	0	1	4	27
3:15 PM	5	24	0	9	29	7	2	0	2	9	6	3	0	2	9	47
3:30 PM	4	13	0	11	17	1	1	0	2	2	15	3	0	1	18	37
3:45 PM	5	14	0	20	19	3	3	0	3	6	4	6	0	0	10	35
Hourly Total	17	64	0	41	81	16	8	0	8	24	28	13	0	4	41	146
4:00 PM	3	13	0	9	16	3	3	0	1	6	6	2	0	0	8	30
4:15 PM	1	10	0	7	11	3	3	0	5	6	4	2	0	3	6	23
4:30 PM	2	17	0	10	19	3	6	1	0	10	6	0	0	4	6	35
4:45 PM	5	19	0	3	24	1	6	0	2	7	3	0	0	2	3	34
Hourly Total	11	59	0	29	70	10	18	1	8	29	19	4	0	9	23	122
5:00 PM	1	14	0	4	15	3	1	0	0	4	9	5	0	0	14	33
5:15 PM	3	16	0	2	19	10	1	0	2	11	7	3	0	3	10	40
5:30 PM	2	8	0	1	10	3	2	0	2	5	4	1	0	0	5	20
5:45 PM	1	16	0	2	17	3	1	0	0	4	5	0	0	0	5	26
Hourly Total	7	54	0	9	61	19	5	0	4	24	25	9	0	3	34	119
6:00 PM	4	8	0	3	12	3	2	0	0	5	3	1	0	1	4	21
6:15 PM	2	6	0	2	8	4	0	0	0	4	2	0	0	0	2	14
6:30 PM	2	6	0	0	8	4	2	0	0	6	2	0	0	1	2	16
6:45 PM	0	9	1	8	10	4	2	0	1	6	2	0	0	3	2	18
Hourly Total	8	29	1	13	38	15	6	0	1	21	9	1	0	5	10	69
Grand Total	109	457	3	221	569	125	117	3	39	245	224	78	0	39	302	1116
Approach %	19.2	80.3	0.5	-	-	51.0	47.8	1.2	-	-	74.2	25.8	0.0	-	-	-
Total %	9.8	40.9	0.3	-	51.0	11.2	10.5	0.3	-	22.0	20.1	7.0	0.0	-	27.1	-
Motorcycles	0	2	0	-	2	0	1	0	-	1	2	1	0	-	3	6
% Motorcycles	0.0	0.4	0.0	-	0.4	0.0	0.9	0.0	-	0.4	0.9	1.3	-	-	1.0	0.5
Cars & Light Goods	102	443	3	-	548	119	112	3	-	234	210	75	0	-	285	1067
% Cars & Light Goods	93.6	96.9	100.0	-	96.3	95.2	95.7	100.0	-	95.5	93.8	96.2	-	-	94.4	95.6
Buses	0	3	0	-	3	3	1	0	-	4	3	0	0	-	3	10
% Buses	0.0	0.7	0.0	-	0.5	2.4	0.9	0.0	-	1.6	1.3	0.0	-	-	1.0	0.9
Single-Unit Trucks	4	6	0	-	10	3	2	0	-	5	1	1	0	-	2	17
% Single-Unit Trucks	3.7	1.3	0.0	-	1.8	2.4	1.7	0.0	-	2.0	0.4	1.3	-	-	0.7	1.5
Articulated Trucks	0	1	0	-	1	0	0	0	-	0	0	1	0	-	1	2
% Articulated Trucks	0.0	0.2	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.0	1.3	-	-	0.3	0.2
Bicycles on Road	3	2	0	-	5	0	1	0	-	1	8	0	0	-	8	14
% Bicycles on Road	2.8	0.4	0.0	-	0.9	0.0	0.9	0.0	-	0.4	3.6	0.0	-	-	2.6	1.3
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	0	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	1.4	-	-	-	-	0.0	-	-	-	-	7.7	-	-
Pedestrians	-	-	-	218	-	-	-	-	39	-	-	-	-	36	-	-
% Pedestrians	-	-	-	98.6	-	-	-	-	100.0	-	-	-	-	92.3	-	-

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Count Name: Bower Street & Willow Street N
Site Code: 240109
Start Date: 04/01/2025
Page No: 3



Turning Movement Data Plot

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Count Name: Bower Street & Willow Street N
Site Code: 240109
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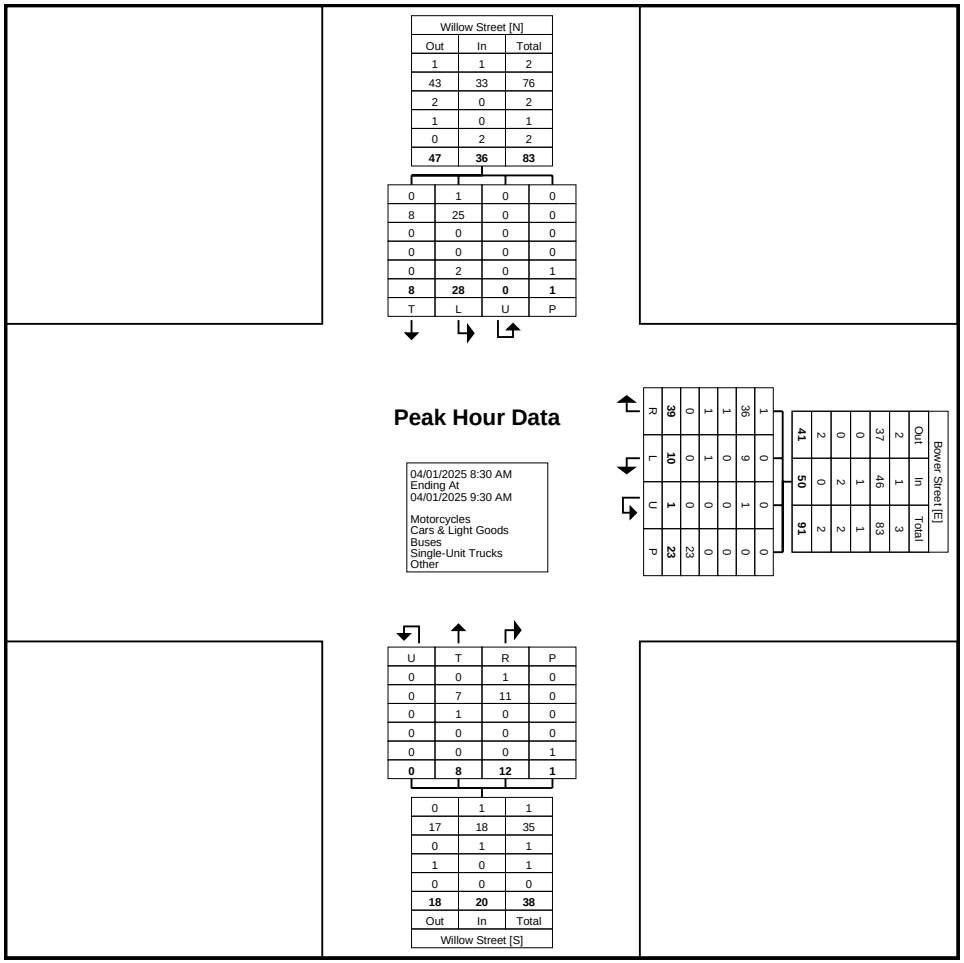
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Bower Street Westbound					Willow Street Northbound					Willow Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
8:30 AM	1	11	0	2	12	1	4	0	0	5	11	1	0	1	12	29
8:45 AM	4	13	0	13	17	6	1	0	0	7	8	1	0	0	9	33
9:00 AM	2	7	1	6	10	1	4	0	0	5	3	4	0	0	7	22
9:15 AM	3	8	0	2	11	0	3	0	1	3	6	2	0	0	8	22
Total	10	39	1	23	50	8	12	0	1	20	28	8	0	1	36	106
Approach %	20.0	78.0	2.0	-	-	40.0	60.0	0.0	-	-	77.8	22.2	0.0	-	-	-
Total %	9.4	36.8	0.9	-	47.2	7.5	11.3	0.0	-	18.9	26.4	7.5	0.0	-	34.0	-
PHF	0.625	0.750	0.250	-	0.735	0.333	0.750	0.000	-	0.714	0.636	0.500	0.000	-	0.750	0.803
Motorcycles	0	1	0	-	1	0	1	0	-	1	1	0	0	-	1	3
% Motorcycles	0.0	2.6	0.0	-	2.0	0.0	8.3	-	-	5.0	3.6	0.0	-	-	2.8	2.8
Cars & Light Goods	9	36	1	-	46	7	11	0	-	18	25	8	0	-	33	97
% Cars & Light Goods	90.0	92.3	100.0	-	92.0	87.5	91.7	-	-	90.0	89.3	100.0	-	-	91.7	91.5
Buses	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Buses	0.0	2.6	0.0	-	2.0	12.5	0.0	-	-	5.0	0.0	0.0	-	-	0.0	1.9
Single-Unit Trucks	1	1	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Single-Unit Trucks	10.0	2.6	0.0	-	4.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	1.9
Articulated Trucks	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	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	2	0	0	-	2	2
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	7.1	0.0	-	-	5.6	1.9
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	4.3	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	22	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	95.7	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Willow Street N
Site Code: 240109
Start Date: 04/01/2025
Page No: 5



Turning Movement Peak Hour Data Plot (8:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Bower Street & Willow Street N
Site Code: 240109
Start Date: 04/01/2025

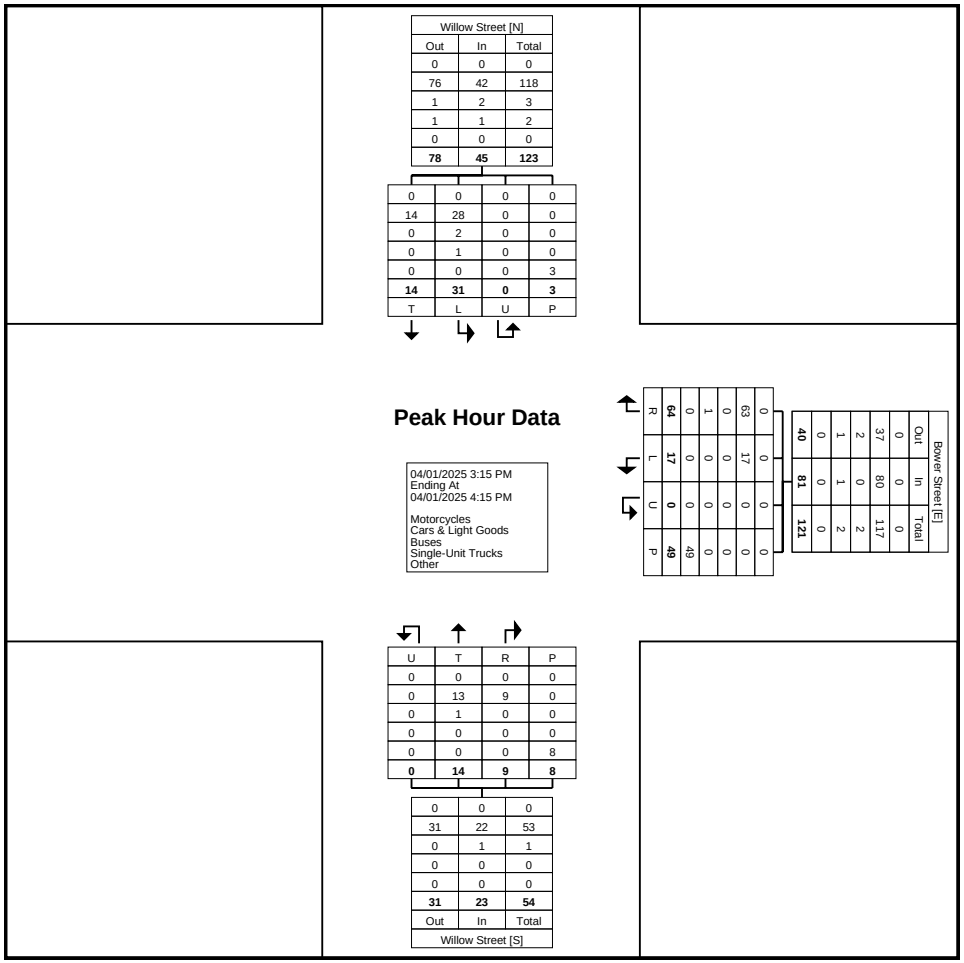
Turning Movement Peak Hour Data (3:15 PM)

Start Time	Bower Street Westbound					Willow Street Northbound					Willow Street Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
3:15 PM	5	24	0	9	29	7	2	0	2	9	6	3	0	2	9	47
3:30 PM	4	13	0	11	17	1	1	0	2	2	15	3	0	1	18	37
3:45 PM	5	14	0	20	19	3	3	0	3	6	4	6	0	0	10	35
4:00 PM	3	13	0	9	16	3	3	0	1	6	6	2	0	0	8	30
Total	17	64	0	49	81	14	9	0	8	23	31	14	0	3	45	149
Approach %	21.0	79.0	0.0	-	-	60.9	39.1	0.0	-	-	68.9	31.1	0.0	-	-	-
Total %	11.4	43.0	0.0	-	54.4	9.4	6.0	0.0	-	15.4	20.8	9.4	0.0	-	30.2	-
PHF	0.850	0.667	0.000	-	0.698	0.500	0.750	0.000	-	0.639	0.517	0.583	0.000	-	0.625	0.793
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	17	63	0	-	80	13	9	0	-	22	28	14	0	-	42	144
% Cars & Light Goods	100.0	98.4	-	-	98.8	92.9	100.0	-	-	95.7	90.3	100.0	-	-	93.3	96.6
Buses	0	0	0	-	0	1	0	0	-	1	2	0	0	-	2	3
% Buses	0.0	0.0	-	-	0.0	7.1	0.0	-	-	4.3	6.5	0.0	-	-	4.4	2.0
Single-Unit Trucks	0	1	0	-	1	0	0	0	-	0	1	0	0	-	1	2
% Single-Unit Trucks	0.0	1.6	-	-	1.2	0.0	0.0	-	-	0.0	3.2	0.0	-	-	2.2	1.3
Articulated Trucks	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
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	49	-	-	-	-	8	-	-	-	-	3	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
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Count Name: Bower Street & Willow Street N
Site Code: 240109
Start Date: 04/01/2025



Turning Movement Peak Hour Data Plot (3:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Main Street & Mill Street
Site Code: 240109
Start Date: 02/27/2025

Turning Movement Data

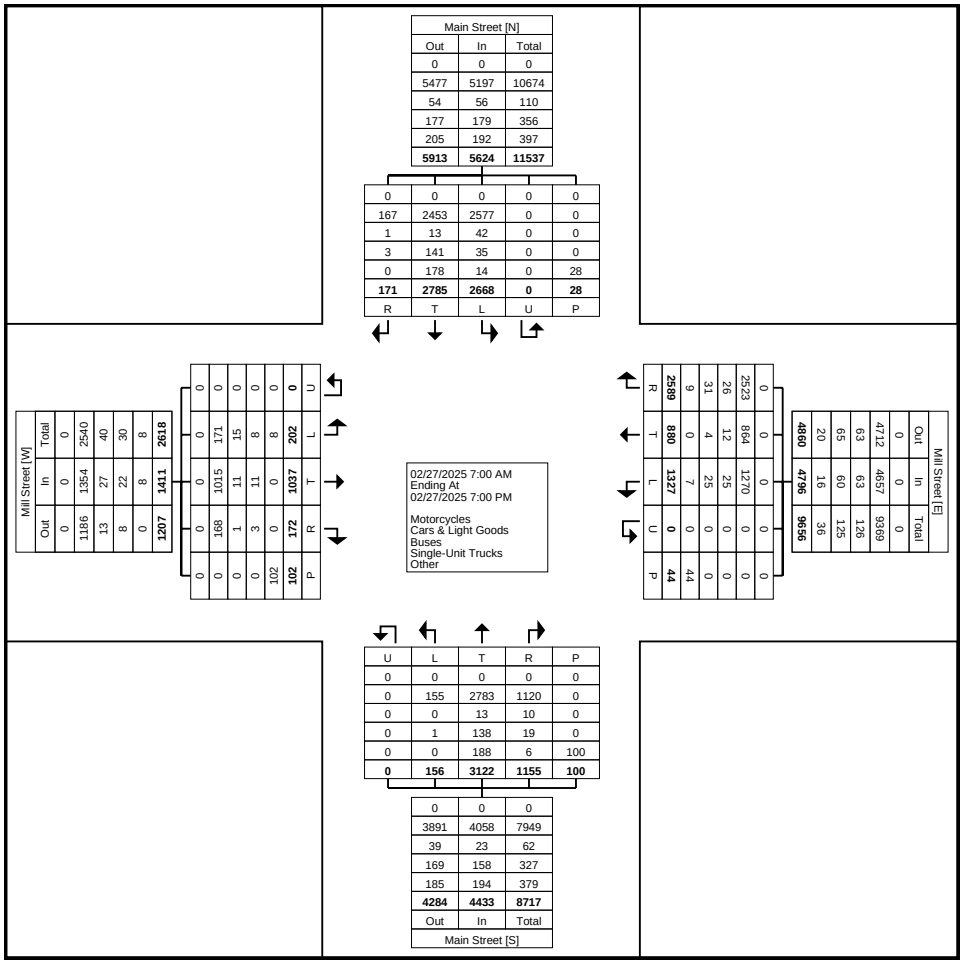
Start Time	Mill Street Eastbound						Mill Street Westbound						Main Street Northbound						Main Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	3	10	7	0	0	20	37	3	21	0	0	61	0	29	22	0	0	51	63	91	2	0	0	156	288
7:15 AM	4	15	0	0	2	19	35	8	20	0	0	63	0	32	16	0	1	48	60	94	2	0	0	156	286
7:30 AM	6	11	1	0	0	18	34	12	40	0	1	86	2	34	20	0	2	56	72	94	1	0	0	167	327
7:45 AM	7	19	3	0	1	29	33	13	44	0	0	90	2	64	21	0	0	87	67	99	1	0	0	167	373
Hourly Total	20	55	11	0	3	86	139	36	125	0	1	300	4	159	79	0	3	242	262	378	6	0	0	646	1274
8:00 AM	5	16	5	0	1	26	22	17	41	0	0	80	1	38	14	0	0	53	55	89	3	0	1	147	306
8:15 AM	2	23	1	0	1	26	24	15	40	0	1	79	2	58	27	0	0	87	58	70	1	0	0	129	321
8:30 AM	3	18	4	0	0	25	29	16	37	0	0	82	4	45	23	0	1	72	43	84	4	0	0	131	310
8:45 AM	8	38	5	0	5	51	26	43	43	0	1	112	1	48	31	0	2	80	51	85	9	0	0	145	388
Hourly Total	18	95	15	0	7	128	101	91	161	0	2	353	8	189	95	0	3	292	207	328	17	0	1	552	1325
9:00 AM	11	45	3	0	3	59	23	19	43	0	4	85	6	80	24	0	2	110	64	73	3	0	1	140	394
9:15 AM	3	28	8	0	1	39	32	17	42	0	0	91	3	36	32	0	1	71	63	64	5	0	1	132	333
9:30 AM	2	21	6	0	2	29	26	15	32	0	2	73	4	38	21	0	4	63	34	53	3	0	1	90	255
9:45 AM	2	17	4	0	1	23	30	7	34	0	3	71	1	40	21	0	4	62	52	65	3	0	2	120	276
Hourly Total	18	111	21	0	7	150	111	58	151	0	9	320	14	194	98	0	11	306	213	255	14	0	5	482	1258
10:00 AM	4	10	2	0	3	16	24	17	46	0	1	87	1	30	25	0	2	56	44	49	1	0	0	94	253
10:15 AM	2	17	3	0	1	22	20	10	43	0	0	73	3	46	25	0	3	74	52	44	3	0	0	99	268
10:30 AM	2	21	3	0	0	26	17	11	49	0	1	77	1	40	13	0	0	54	42	41	1	0	0	84	241
10:45 AM	3	14	3	0	0	20	19	16	43	0	0	78	5	46	21	0	0	72	55	48	2	0	0	105	275
Hourly Total	11	62	11	0	4	84	80	54	181	0	2	315	10	162	84	0	5	256	193	182	7	0	0	382	1037
11:00 AM	4	16	6	0	4	26	24	20	39	0	1	83	3	32	13	0	4	48	54	47	1	0	0	102	259
11:15 AM	1	15	4	0	2	20	25	9	44	0	1	78	4	59	30	0	3	93	53	53	2	0	0	108	299
11:30 AM	0	18	8	0	5	26	20	13	48	0	3	81	2	53	26	0	7	81	55	51	1	0	0	107	295
11:45 AM	7	13	2	0	5	22	29	13	49	0	1	91	6	35	31	0	2	72	51	38	4	0	2	93	278
Hourly Total	12	62	20	0	16	94	98	55	180	0	6	333	15	179	100	0	16	294	213	189	8	0	2	410	1131
12:00 PM	2	16	3	0	1	21	19	13	49	0	0	81	3	58	31	0	1	92	61	53	4	0	0	118	312
12:15 PM	5	25	2	0	0	32	20	20	45	0	1	85	5	53	25	0	2	83	67	42	2	0	0	111	311
12:30 PM	5	20	4	0	1	29	19	17	53	0	0	89	1	50	30	0	3	81	49	51	1	0	0	101	300
12:45 PM	3	19	0	0	1	22	32	15	47	0	1	94	3	58	25	0	1	86	54	43	2	0	1	99	301
Hourly Total	15	80	9	0	3	104	90	65	194	0	2	349	12	219	111	0	7	342	231	189	9	0	1	429	1224
1:00 PM	1	23	3	0	4	27	25	16	63	0	0	104	1	48	31	0	3	80	56	50	3	0	2	109	320
1:15 PM	7	17	6	0	2	30	21	18	51	0	1	90	3	62	23	0	0	88	62	41	4	0	3	107	315
1:30 PM	7	13	2	0	1	22	24	12	71	0	0	107	2	55	20	0	3	77	69	43	1	0	0	113	319
1:45 PM	4	17	4	0	2	25	25	24	60	0	3	109	3	49	16	0	2	68	60	39	4	0	1	103	305
Hourly Total	19	70	15	0	9	104	95	70	245	0	4	410	9	214	90	0	8	313	247	173	12	0	6	432	1259

2:00 PM	3	11	3	0	3	17	27	14	53	0	0	94	2	48	21	0	3	71	52	45	3	0	0	100	282
2:15 PM	2	17	4	0	0	23	33	13	63	0	1	109	4	50	15	0	0	69	40	44	4	0	0	88	289
2:30 PM	3	17	3	0	1	23	23	20	52	0	0	95	1	64	24	0	2	89	49	48	3	0	0	100	307
2:45 PM	3	18	5	0	1	26	22	16	59	0	2	97	5	65	33	0	4	103	52	49	4	0	0	105	331
Hourly Total	11	63	15	0	5	89	105	63	227	0	3	395	12	227	93	0	9	332	193	186	14	0	0	393	1209
3:00 PM	3	22	6	0	1	31	22	39	65	0	1	126	2	78	35	0	4	115	66	48	3	0	1	117	389
3:15 PM	5	16	3	0	4	24	22	17	73	0	0	112	5	113	27	0	4	145	40	34	7	0	0	81	362
3:30 PM	11	48	4	0	5	63	39	24	58	0	2	121	2	91	29	0	1	122	61	73	6	0	1	140	446
3:45 PM	12	31	1	0	3	44	27	26	71	0	0	124	3	90	18	0	3	111	50	67	9	0	4	126	405
Hourly Total	31	117	14	0	13	162	110	106	267	0	3	483	12	372	109	0	12	493	217	222	25	0	6	464	1602
4:00 PM	6	30	1	0	1	37	36	19	70	0	0	125	3	123	26	0	0	152	66	64	4	0	1	134	448
4:15 PM	5	26	4	0	4	35	35	26	82	0	1	143	2	103	22	0	1	127	65	53	8	0	1	126	431
4:30 PM	4	22	5	0	3	31	41	25	73	0	0	139	5	127	19	0	1	151	63	74	3	0	0	140	461
4:45 PM	5	31	3	0	3	39	24	30	82	0	2	136	1	118	24	0	1	143	58	74	4	0	0	136	454
Hourly Total	20	109	13	0	11	142	136	100	307	0	3	543	11	471	91	0	3	573	252	265	19	0	2	536	1794
5:00 PM	9	33	4	0	1	46	36	33	77	0	0	146	5	101	12	0	3	118	59	57	5	0	2	121	431
5:15 PM	3	39	6	0	3	48	27	27	69	0	3	123	8	113	31	0	1	152	53	63	5	0	1	121	444
5:30 PM	3	22	4	0	4	29	42	25	63	0	0	130	3	100	21	0	2	124	51	71	7	0	0	129	412
5:45 PM	4	31	1	0	3	36	27	17	70	0	2	114	1	96	23	0	3	120	49	55	4	0	2	108	378
Hourly Total	19	125	15	0	11	159	132	102	279	0	5	513	17	410	87	0	9	514	212	246	21	0	5	479	1665
6:00 PM	4	24	5	0	5	33	32	25	72	0	1	129	11	119	26	0	3	156	53	59	3	0	0	115	433
6:15 PM	1	26	3	0	4	30	29	16	74	0	0	119	8	72	32	0	7	112	72	41	2	0	0	115	376
6:30 PM	1	22	3	0	2	26	33	23	72	0	2	128	7	80	35	0	2	122	56	40	3	0	0	99	375
6:45 PM	2	16	2	0	2	20	36	16	54	0	1	106	6	55	25	0	2	86	47	32	11	0	0	90	302
Hourly Total	8	88	13	0	13	109	130	80	272	0	4	482	32	326	118	0	14	476	228	172	19	0	0	419	1486
Grand Total	202	1037	172	0	102	1411	1327	880	2589	0	44	4796	156	3122	1155	0	100	4433	2668	2785	171	0	28	5624	16264
Approach %	14.3	73.5	12.2	0.0	-	-	27.7	18.3	54.0	0.0	-	-	3.5	70.4	26.1	0.0	-	-	47.4	49.5	3.0	0.0	-	-	-
Total %	1.2	6.4	1.1	0.0	-	8.7	8.2	5.4	15.9	0.0	-	29.5	1.0	19.2	7.1	0.0	-	27.3	16.4	17.1	1.1	0.0	-	34.6	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	171	1015	168	0	-	1354	1270	864	2523	0	-	4657	155	2783	1120	0	-	4058	2577	2453	167	0	-	5197	15266
% Cars & Light Goods	84.7	97.9	97.7	-	-	96.0	95.7	98.2	97.5	-	-	97.1	99.4	89.1	97.0	-	-	91.5	96.6	88.1	97.7	-	-	92.4	93.9
Buses	15	11	1	0	-	27	25	12	26	0	-	63	0	13	10	0	-	23	42	13	1	0	-	56	169
% Buses	7.4	1.1	0.6	-	-	1.9	1.9	1.4	1.0	-	-	1.3	0.0	0.4	0.9	-	-	0.5	1.6	0.5	0.6	-	-	1.0	1.0
Single-Unit Trucks	8	11	3	0	-	22	25	4	31	0	-	60	1	138	19	0	-	158	35	141	3	0	-	179	419
% Single-Unit Trucks	4.0	1.1	1.7	-	-	1.6	1.9	0.5	1.2	-	-	1.3	0.6	4.4	1.6	-	-	3.6	1.3	5.1	1.8	-	-	3.2	2.6
Articulated Trucks	8	0	0	0	-	8	7	0	9	0	-	16	0	187	6	0	-	193	12	178	0	0	-	190	407
% Articulated Trucks	4.0	0.0	0.0	-	-	0.6	0.5	0.0	0.3	-	-	0.3	0.0	6.0	0.5	-	-	4.4	0.4	6.4	0.0	-	-	3.4	2.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	2	0	0	0	-	2	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	2.3	-	-	-	-	-	0.0	-	-	-	-	-	7.1	-	-
Pedestrians	-	-	-	-	102	-	-	-	-	-	43	-	-	-	-	-	100	-	-	-	-	-	26	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	97.7	-	-	-	-	-	100.0	-	-	-	-	-	92.9	-	-

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Count Name: Main Street & Mill Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Data Plot

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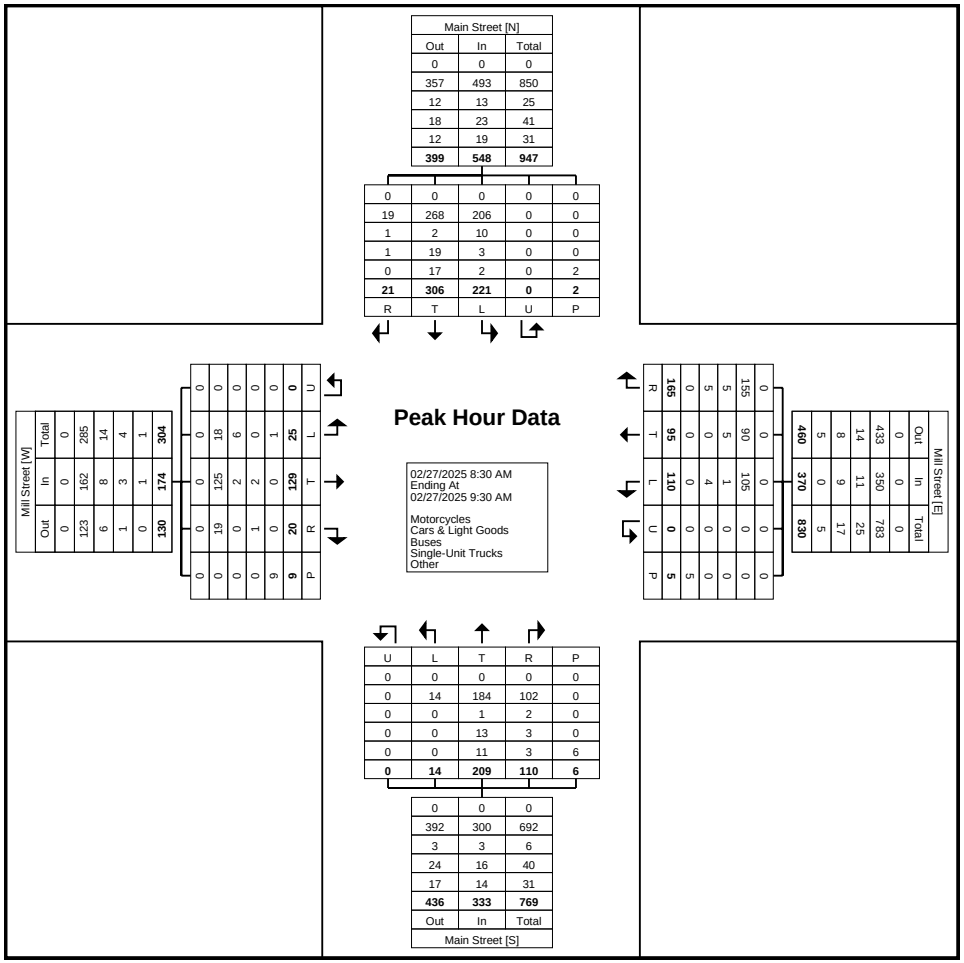
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Main Street Northbound						Main Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:30 AM	3	18	4	0	0	25	29	16	37	0	0	82	4	45	23	0	1	72	43	84	4	0	0	131	310
8:45 AM	8	38	5	0	5	51	26	43	43	0	1	112	1	48	31	0	2	80	51	85	9	0	0	145	388
9:00 AM	11	45	3	0	3	59	23	19	43	0	4	85	6	80	24	0	2	110	64	73	3	0	1	140	394
9:15 AM	3	28	8	0	1	39	32	17	42	0	0	91	3	36	32	0	1	71	63	64	5	0	1	132	333
Total	25	129	20	0	9	174	110	95	165	0	5	370	14	209	110	0	6	333	221	306	21	0	2	548	1425
Approach %	14.4	74.1	11.5	0.0	-	-	29.7	25.7	44.6	0.0	-	-	4.2	62.8	33.0	0.0	-	-	40.3	55.8	3.8	0.0	-	-	-
Total %	1.8	9.1	1.4	0.0	-	12.2	7.7	6.7	11.6	0.0	-	26.0	1.0	14.7	7.7	0.0	-	23.4	15.5	21.5	1.5	0.0	-	38.5	-
PHF	0.568	0.717	0.625	0.000	-	0.737	0.859	0.552	0.959	0.000	-	0.826	0.583	0.653	0.859	0.000	-	0.757	0.863	0.900	0.583	0.000	-	0.945	0.904
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	18	125	19	0	-	162	105	90	155	0	-	350	14	184	102	0	-	300	206	268	19	0	-	493	1305
% Cars & Light Goods	72.0	96.9	95.0	-	-	93.1	95.5	94.7	93.9	-	-	94.6	100.0	88.0	92.7	-	-	90.1	93.2	87.6	90.5	-	-	90.0	91.6
Buses	6	2	0	0	-	8	1	5	5	0	-	11	0	1	2	0	-	3	10	2	1	0	-	13	35
% Buses	24.0	1.6	0.0	-	-	4.6	0.9	5.3	3.0	-	-	3.0	0.0	0.5	1.8	-	-	0.9	4.5	0.7	4.8	-	-	2.4	2.5
Single-Unit Trucks	0	2	1	0	-	3	4	0	5	0	-	9	0	13	3	0	-	16	3	19	1	0	-	23	51
% Single-Unit Trucks	0.0	1.6	5.0	-	-	1.7	3.6	0.0	3.0	-	-	2.4	0.0	6.2	2.7	-	-	4.8	1.4	6.2	4.8	-	-	4.2	3.6
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	11	3	0	-	14	2	17	0	0	-	19	34
% Articulated Trucks	4.0	0.0	0.0	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	5.3	2.7	-	-	4.2	0.9	5.6	0.0	-	-	3.5	2.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	9	-	-	-	-	-	5	-	-	-	-	-	6	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Main Street & Mill Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Peak Hour Data Plot (8:30 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Main Street & Mill Street
Site Code: 240109
Start Date: 02/27/2025

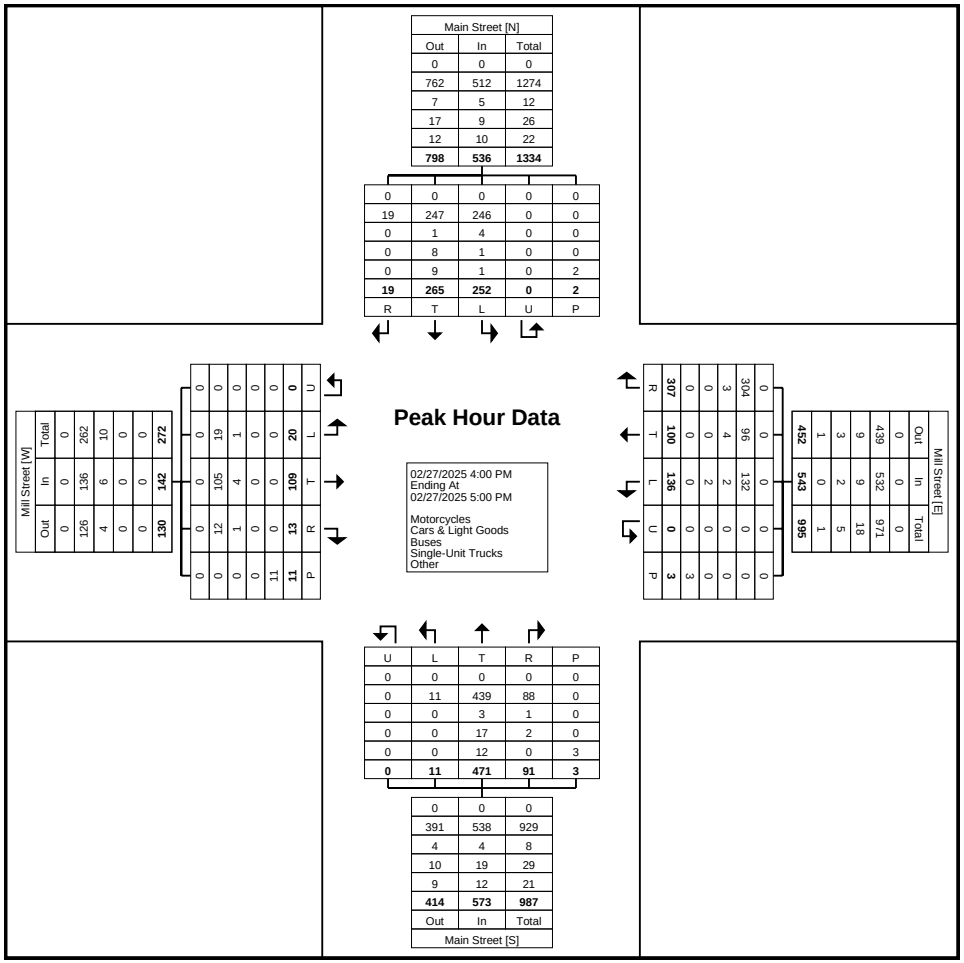
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Main Street Northbound						Main Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:00 PM	6	30	1	0	1	37	36	19	70	0	0	125	3	123	26	0	0	152	66	64	4	0	1	134	448
4:15 PM	5	26	4	0	4	35	35	26	82	0	1	143	2	103	22	0	1	127	65	53	8	0	1	126	431
4:30 PM	4	22	5	0	3	31	41	25	73	0	0	139	5	127	19	0	1	151	63	74	3	0	0	140	461
4:45 PM	5	31	3	0	3	39	24	30	82	0	2	136	1	118	24	0	1	143	58	74	4	0	0	136	454
Total	20	109	13	0	11	142	136	100	307	0	3	543	11	471	91	0	3	573	252	265	19	0	2	536	1794
Approach %	14.1	76.8	9.2	0.0	-	-	25.0	18.4	56.5	0.0	-	-	1.9	82.2	15.9	0.0	-	-	47.0	49.4	3.5	0.0	-	-	-
Total %	1.1	6.1	0.7	0.0	-	7.9	7.6	5.6	17.1	0.0	-	30.3	0.6	26.3	5.1	0.0	-	31.9	14.0	14.8	1.1	0.0	-	29.9	-
PHF	0.833	0.879	0.650	0.000	-	0.910	0.829	0.833	0.936	0.000	-	0.949	0.550	0.927	0.875	0.000	-	0.942	0.955	0.895	0.594	0.000	-	0.957	0.973
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	19	105	12	0	-	136	132	96	304	0	-	532	11	439	88	0	-	538	246	247	19	0	-	512	1718
% Cars & Light Goods	95.0	96.3	92.3	-	-	95.8	97.1	96.0	99.0	-	-	98.0	100.0	93.2	96.7	-	-	93.9	97.6	93.2	100.0	-	-	95.5	95.8
Buses	1	4	1	0	-	6	2	4	3	0	-	9	0	3	1	0	-	4	4	1	0	0	-	5	24
% Buses	5.0	3.7	7.7	-	-	4.2	1.5	4.0	1.0	-	-	1.7	0.0	0.6	1.1	-	-	0.7	1.6	0.4	0.0	-	-	0.9	1.3
Single-Unit Trucks	0	0	0	0	-	0	2	0	0	0	-	2	0	17	2	0	-	19	1	8	0	0	-	9	30
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	1.5	0.0	0.0	-	-	0.4	0.0	3.6	2.2	-	-	3.3	0.4	3.0	0.0	-	-	1.7	1.7
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	12	0	0	-	12	1	9	0	0	-	10	22
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.5	0.0	-	-	2.1	0.4	3.4	0.0	-	-	1.9	1.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
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Count Name: Main Street & Mill Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Peak Hour Data Plot (4:00 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Bower Street
Site Code: 240109
Start Date: 02/27/2025

Turning Movement Data

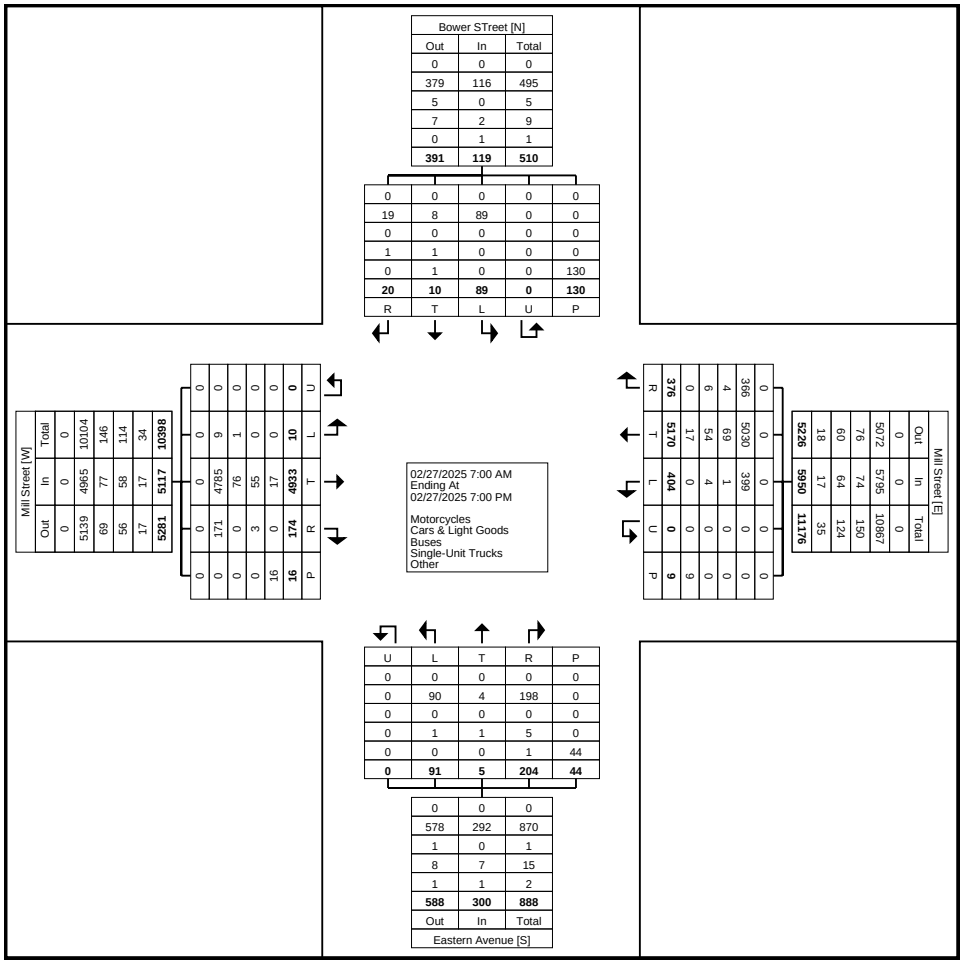
Start Time	Mill Street Eastbound						Mill Street Westbound						Eastern Avenue Northbound						Bower STreet Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	68	15	0	0	83	16	68	3	0	3	87	2	0	1	0	1	3	0	2	0	0	0	2	175
7:15 AM	0	84	7	0	0	91	5	72	2	0	0	79	1	0	0	0	0	1	1	0	0	0	2	1	172
7:30 AM	1	99	12	0	0	112	2	80	4	0	1	86	3	0	6	0	1	9	1	1	1	0	0	3	210
7:45 AM	1	97	3	0	0	101	3	100	6	0	0	109	1	0	1	0	1	2	1	0	2	0	2	3	215
Hourly Total	2	348	37	0	0	387	26	320	15	0	4	361	7	0	8	0	3	15	3	3	3	0	4	9	772
8:00 AM	0	90	3	0	1	93	6	77	1	0	0	84	1	0	2	0	1	3	0	0	0	0	5	0	180
8:15 AM	0	109	3	0	0	112	8	99	2	0	0	109	0	0	2	0	1	2	1	0	1	0	8	2	225
8:30 AM	0	86	2	0	2	88	8	102	10	0	0	120	2	0	4	0	0	6	1	0	1	0	3	2	216
8:45 AM	1	107	3	0	0	111	8	115	13	0	0	136	1	0	2	0	0	3	2	1	0	0	4	3	253
Hourly Total	1	392	11	0	3	404	30	393	26	0	0	449	4	0	10	0	2	14	4	1	2	0	20	7	874
9:00 AM	1	130	6	0	1	137	10	112	8	0	0	130	3	0	3	0	1	6	1	0	1	0	5	2	275
9:15 AM	0	116	7	0	0	123	11	103	5	0	0	119	1	0	4	0	0	5	5	0	0	0	5	5	252
9:30 AM	0	91	3	0	0	94	6	78	4	0	0	88	0	0	1	0	0	1	0	0	0	0	1	0	183
9:45 AM	0	79	2	0	0	81	12	81	15	0	0	108	2	0	4	0	0	6	2	0	0	0	3	2	197
Hourly Total	1	416	18	0	1	435	39	374	32	0	0	445	6	0	12	0	1	18	8	0	1	0	14	9	907
10:00 AM	0	79	6	0	0	85	6	84	7	0	0	97	1	0	5	0	1	6	3	0	0	0	0	3	191
10:15 AM	0	80	6	0	0	86	5	92	3	0	0	100	2	0	4	0	0	6	1	0	0	0	2	1	193
10:30 AM	0	66	3	0	0	69	1	80	3	0	0	84	2	2	1	0	0	5	2	0	0	0	1	2	160
10:45 AM	0	100	6	0	0	106	5	95	7	0	0	107	0	0	4	0	0	4	2	1	0	0	1	3	220
Hourly Total	0	325	21	0	0	346	17	351	20	0	0	388	5	2	14	0	1	21	8	1	0	0	4	9	764
11:00 AM	0	96	4	0	0	100	5	88	7	0	0	100	0	0	3	0	1	3	5	0	0	0	1	5	208
11:15 AM	2	88	4	0	0	94	10	85	7	0	0	102	1	0	1	0	1	2	2	1	0	0	0	3	201
11:30 AM	0	101	1	0	1	102	10	82	7	0	0	99	1	0	4	0	3	5	2	0	0	0	3	2	208
11:45 AM	0	91	4	0	0	95	8	100	9	0	0	117	0	0	6	0	1	6	2	0	0	0	3	2	220
Hourly Total	2	376	13	0	1	391	33	355	30	0	0	418	2	0	14	0	6	16	11	1	0	0	7	12	837
12:00 PM	1	103	3	0	2	107	12	86	7	0	0	105	3	0	8	0	0	11	0	0	2	0	3	2	225
12:15 PM	0	134	5	0	1	139	3	109	11	0	0	123	4	0	3	0	2	7	2	1	0	0	1	3	272
12:30 PM	0	95	2	0	1	97	10	108	6	0	1	124	0	0	6	0	0	6	5	0	1	0	2	6	233
12:45 PM	0	99	2	0	2	101	10	105	10	0	1	125	2	0	3	0	1	5	3	0	0	0	0	3	234
Hourly Total	1	431	12	0	6	444	35	408	34	0	2	477	9	0	20	0	3	29	10	1	3	0	6	14	964
1:00 PM	0	119	3	0	0	122	7	107	8	0	1	122	1	1	1	0	0	3	3	0	0	0	3	3	250
1:15 PM	0	107	2	0	0	109	4	106	8	0	0	118	1	0	1	0	1	2	0	1	0	0	1	1	230
1:30 PM	0	91	6	0	2	97	6	104	13	0	0	123	0	0	2	0	1	2	1	0	0	0	4	1	223
1:45 PM	0	105	4	0	0	109	9	117	13	0	0	139	2	0	3	0	0	5	1	0	0	0	0	1	254
Hourly Total	0	422	15	0	2	437	26	434	42	0	1	502	4	1	7	0	2	12	5	1	0	0	8	6	957

2:00 PM	0	98	2	0	0	100	10	105	8	0	0	123	1	0	5	0	0	6	3	0	0	0	0	3	232
2:15 PM	0	86	2	0	1	88	8	115	11	0	0	134	2	0	5	0	2	7	0	1	0	0	0	1	230
2:30 PM	0	92	1	0	0	93	7	101	9	0	0	117	2	0	6	0	1	8	1	0	0	0	2	1	219
2:45 PM	1	95	1	0	0	97	11	92	12	0	0	115	0	1	1	0	1	2	0	1	0	0	2	1	215
Hourly Total	1	371	6	0	1	378	36	413	40	0	0	489	5	1	17	0	4	23	4	2	0	0	4	6	896
3:00 PM	0	133	6	0	0	139	10	150	6	0	0	166	1	0	7	0	0	8	0	0	0	0	1	0	313
3:15 PM	0	98	1	0	0	99	13	129	10	0	0	152	1	0	10	0	0	11	3	0	0	0	4	3	265
3:30 PM	0	152	3	0	0	155	14	142	18	0	0	174	2	0	6	0	1	8	4	0	1	0	10	5	342
3:45 PM	0	101	2	0	0	103	16	134	13	0	0	163	1	0	7	0	3	8	4	0	0	0	13	4	278
Hourly Total	0	484	12	0	0	496	53	555	47	0	0	655	5	0	30	0	4	35	11	0	1	0	28	12	1198
4:00 PM	0	133	5	0	2	138	7	133	11	0	0	151	3	0	2	0	0	5	3	0	1	0	1	4	298
4:15 PM	1	116	3	0	0	120	13	160	13	0	0	186	2	0	8	0	0	10	3	0	0	0	2	3	319
4:30 PM	0	108	3	0	0	111	14	159	7	0	0	180	5	1	4	0	2	10	4	0	1	0	0	5	306
4:45 PM	0	131	5	0	0	136	11	134	13	0	0	158	4	0	12	0	6	16	1	0	0	0	5	1	311
Hourly Total	1	488	16	0	2	505	45	586	44	0	0	675	14	1	26	0	8	41	11	0	2	0	8	13	1234
5:00 PM	0	123	3	0	0	126	9	133	5	0	0	147	6	0	6	0	2	12	3	0	0	0	2	3	288
5:15 PM	0	126	2	0	0	128	10	133	8	0	1	151	6	0	11	0	3	17	2	0	0	0	4	2	298
5:30 PM	0	91	1	0	0	92	13	134	6	0	0	153	3	0	5	0	1	8	0	0	1	0	4	1	254
5:45 PM	0	94	1	0	0	95	7	116	9	0	1	132	3	0	7	0	0	10	1	0	2	0	0	3	240
Hourly Total	0	434	7	0	0	441	39	516	28	0	2	583	18	0	29	0	6	47	6	0	3	0	10	9	1080
6:00 PM	1	124	2	0	0	127	9	104	5	0	0	118	5	0	4	0	2	9	1	0	0	0	8	1	255
6:15 PM	0	116	3	0	0	119	3	116	5	0	0	124	5	0	9	0	0	14	2	0	1	0	4	3	260
6:30 PM	0	113	0	0	0	113	4	122	6	0	0	132	2	0	3	0	1	5	2	0	0	0	0	2	252
6:45 PM	0	93	1	0	0	94	9	123	2	0	0	134	0	0	1	0	1	1	3	0	4	0	5	7	236
Hourly Total	1	446	6	0	0	453	25	465	18	0	0	508	12	0	17	0	4	29	8	0	5	0	17	13	1003
Grand Total	10	4933	174	0	16	5117	404	5170	376	0	9	5950	91	5	204	0	44	300	89	10	20	0	130	119	11486
Approach %	0.2	96.4	3.4	0.0	-	-	6.8	86.9	6.3	0.0	-	-	30.3	1.7	68.0	0.0	-	-	74.8	8.4	16.8	0.0	-	-	-
Total %	0.1	42.9	1.5	0.0	-	44.5	3.5	45.0	3.3	0.0	-	51.8	0.8	0.0	1.8	0.0	-	2.6	0.8	0.1	0.2	0.0	-	1.0	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	9	4785	171	0	-	4965	399	5030	366	0	-	5795	90	4	198	0	-	292	89	8	19	0	-	116	11168
% Cars & Light Goods	90.0	97.0	98.3	-	-	97.0	98.8	97.3	97.3	-	-	97.4	98.9	80.0	97.1	-	-	97.3	100.0	80.0	95.0	-	-	97.5	97.2
Buses	1	76	0	0	-	77	1	69	4	0	-	74	0	0	0	0	-	0	0	0	0	0	-	0	151
% Buses	10.0	1.5	0.0	-	-	1.5	0.2	1.3	1.1	-	-	1.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	1.3
Single-Unit Trucks	0	55	3	0	-	58	4	54	6	0	-	64	1	1	5	0	-	7	0	1	1	0	-	2	131
% Single-Unit Trucks	0.0	1.1	1.7	-	-	1.1	1.0	1.0	1.6	-	-	1.1	1.1	20.0	2.5	-	-	2.3	0.0	10.0	5.0	-	-	1.7	1.1
Articulated Trucks	0	17	0	0	-	17	0	17	0	0	-	17	0	0	0	0	-	0	0	1	0	0	-	1	35
% Articulated Trucks	0.0	0.3	0.0	-	-	0.3	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	10.0	0.0	-	-	0.8	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.5	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	2.3	-	-	-	-	-	4.6	-	-
Pedestrians	-	-	-	-	16	-	-	-	-	-	9	-	-	-	-	-	43	-	-	-	-	-	124	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	97.7	-	-	-	-	-	95.4	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Bower Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Bower Street
Site Code: 240109
Start Date: 02/27/2025

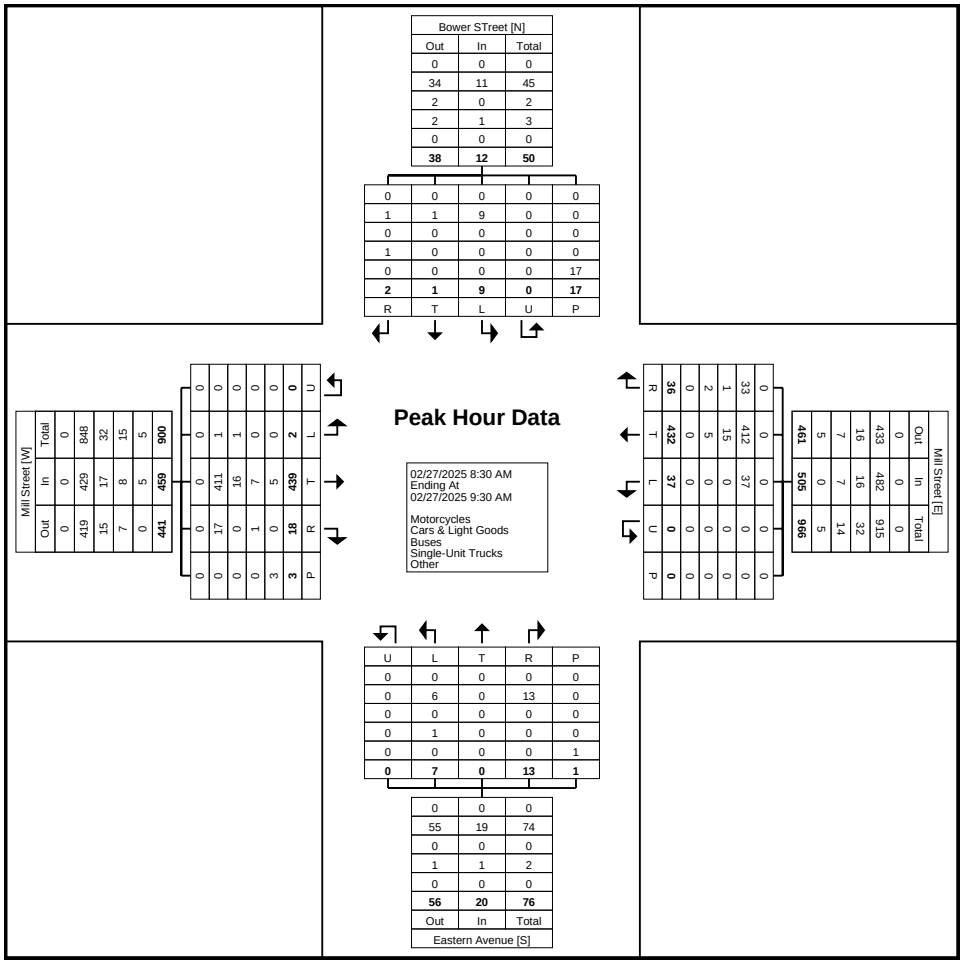
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Eastern Avenue Northbound						Bower STreet Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:30 AM	0	86	2	0	2	88	8	102	10	0	0	120	2	0	4	0	0	6	1	0	1	0	3	2	216
8:45 AM	1	107	3	0	0	111	8	115	13	0	0	136	1	0	2	0	0	3	2	1	0	0	4	3	253
9:00 AM	1	130	6	0	1	137	10	112	8	0	0	130	3	0	3	0	1	6	1	0	1	0	5	2	275
9:15 AM	0	116	7	0	0	123	11	103	5	0	0	119	1	0	4	0	0	5	5	0	0	0	5	5	252
Total	2	439	18	0	3	459	37	432	36	0	0	505	7	0	13	0	1	20	9	1	2	0	17	12	996
Approach %	0.4	95.6	3.9	0.0	-	-	7.3	85.5	7.1	0.0	-	-	35.0	0.0	65.0	0.0	-	-	75.0	8.3	16.7	0.0	-	-	-
Total %	0.2	44.1	1.8	0.0	-	46.1	3.7	43.4	3.6	0.0	-	50.7	0.7	0.0	1.3	0.0	-	2.0	0.9	0.1	0.2	0.0	-	1.2	-
PHF	0.500	0.844	0.643	0.000	-	0.838	0.841	0.939	0.692	0.000	-	0.928	0.583	0.000	0.813	0.000	-	0.833	0.450	0.250	0.500	0.000	-	0.600	0.905
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	1	411	17	0	-	429	37	412	33	0	-	482	6	0	13	0	-	19	9	1	1	0	-	11	941
% Cars & Light Goods	50.0	93.6	94.4	-	-	93.5	100.0	95.4	91.7	-	-	95.4	85.7	-	100.0	-	-	95.0	100.0	100.0	50.0	-	-	91.7	94.5
Buses	1	16	0	0	-	17	0	15	1	0	-	16	0	0	0	0	-	0	0	0	0	0	-	0	33
% Buses	50.0	3.6	0.0	-	-	3.7	0.0	3.5	2.8	-	-	3.2	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	3.3
Single-Unit Trucks	0	7	1	0	-	8	0	5	2	0	-	7	1	0	0	0	-	1	0	0	1	0	-	1	17
% Single-Unit Trucks	0.0	1.6	5.6	-	-	1.7	0.0	1.2	5.6	-	-	1.4	14.3	-	0.0	-	-	5.0	0.0	0.0	50.0	-	-	8.3	1.7
Articulated Trucks	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5
% Articulated Trucks	0.0	1.1	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	17	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Bower Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Peak Hour Data Plot (8:30 AM)

Paradigm Transportation Solutions Limited
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Count Name: Mill Street & Bower Street
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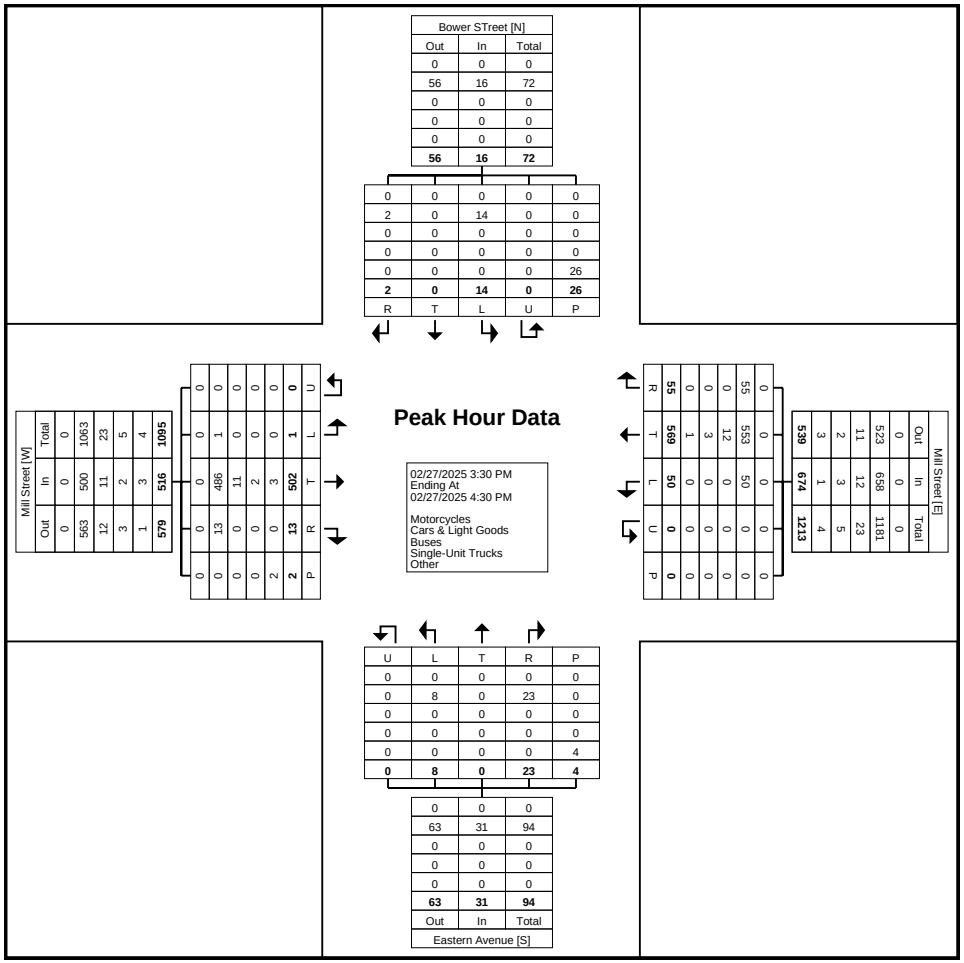
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Eastern Avenue Northbound						Bower STreet Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 PM	0	152	3	0	0	155	14	142	18	0	0	174	2	0	6	0	1	8	4	0	1	0	10	5	342
3:45 PM	0	101	2	0	0	103	16	134	13	0	0	163	1	0	7	0	3	8	4	0	0	0	13	4	278
4:00 PM	0	133	5	0	2	138	7	133	11	0	0	151	3	0	2	0	0	5	3	0	1	0	1	4	298
4:15 PM	1	116	3	0	0	120	13	160	13	0	0	186	2	0	8	0	0	10	3	0	0	0	2	3	319
Total	1	502	13	0	2	516	50	569	55	0	0	674	8	0	23	0	4	31	14	0	2	0	26	16	1237
Approach %	0.2	97.3	2.5	0.0	-	-	7.4	84.4	8.2	0.0	-	-	25.8	0.0	74.2	0.0	-	-	87.5	0.0	12.5	0.0	-	-	-
Total %	0.1	40.6	1.1	0.0	-	41.7	4.0	46.0	4.4	0.0	-	54.5	0.6	0.0	1.9	0.0	-	2.5	1.1	0.0	0.2	0.0	-	1.3	-
PHF	0.250	0.826	0.650	0.000	-	0.832	0.781	0.889	0.764	0.000	-	0.906	0.667	0.000	0.719	0.000	-	0.775	0.875	0.000	0.500	0.000	-	0.800	0.904
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	1	486	13	0	-	500	50	553	55	0	-	658	8	0	23	0	-	31	14	0	2	0	-	16	1205
% Cars & Light Goods	100.0	96.8	100.0	-	-	96.9	100.0	97.2	100.0	-	-	97.6	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	97.4
Buses	0	11	0	0	-	11	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	23
% Buses	0.0	2.2	0.0	-	-	2.1	0.0	2.1	0.0	-	-	1.8	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.9
Single-Unit Trucks	0	2	0	0	-	2	0	3	0	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	5
% Single-Unit Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.5	0.0	-	-	0.4	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.4
Articulated Trucks	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.6	0.0	-	-	0.6	0.0	0.2	0.0	-	-	0.1	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	3.8	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	25	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	96.2	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Bower Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Peak Hour Data Plot (3:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025

Turning Movement Data

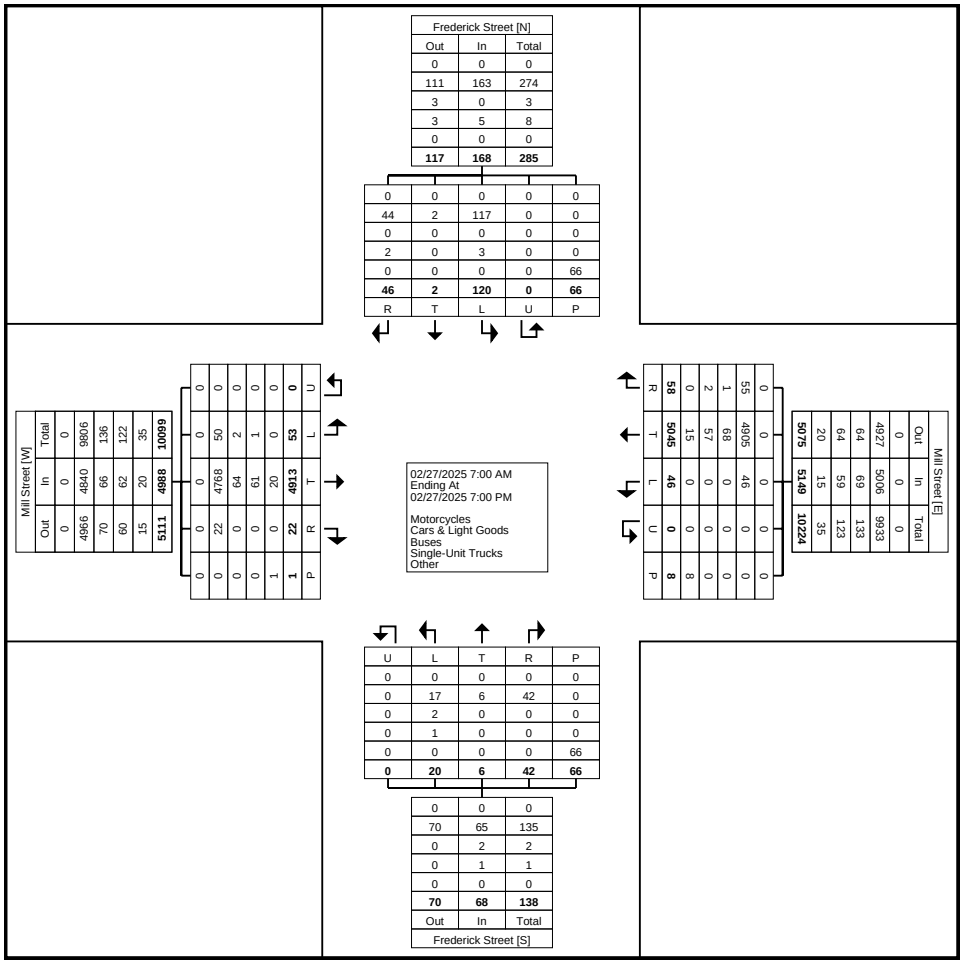
Start Time	Mill Street Eastbound						Mill Street Westbound						Frederick Street Northbound						Frederick Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	86	0	0	0	86	0	67	0	0	0	67	0	0	0	0	0	0	1	0	0	0	1	1	154
7:15 AM	0	97	0	0	0	97	1	71	0	0	1	72	0	0	0	0	3	0	1	0	0	0	0	1	170
7:30 AM	1	107	0	0	0	108	0	86	0	0	0	86	1	0	0	0	0	1	4	0	0	0	0	4	199
7:45 AM	2	96	0	0	0	98	0	94	0	0	0	94	0	0	1	0	0	1	3	0	0	0	0	3	196
Hourly Total	3	386	0	0	0	389	1	318	0	0	1	319	1	0	1	0	3	2	9	0	0	0	1	9	719
8:00 AM	0	96	0	0	0	96	1	81	1	0	2	83	1	0	0	0	2	1	0	0	1	0	3	1	181
8:15 AM	0	106	1	0	0	107	1	96	0	0	0	97	0	0	1	0	1	1	6	0	1	0	2	7	212
8:30 AM	3	78	0	0	0	81	0	101	2	0	0	103	0	0	0	0	1	0	3	0	1	0	1	4	188
8:45 AM	3	110	0	0	0	113	0	108	5	0	0	113	0	0	0	0	1	0	5	0	2	0	0	7	233
Hourly Total	6	390	1	0	0	397	2	386	8	0	2	396	1	0	1	0	5	2	14	0	5	0	6	19	814
9:00 AM	1	131	1	0	0	133	0	111	0	0	0	111	2	0	0	0	2	2	5	0	1	0	1	6	252
9:15 AM	3	113	1	0	0	117	1	93	4	0	0	98	1	2	2	0	0	5	3	0	1	0	3	4	224
9:30 AM	1	84	1	0	0	86	1	73	4	0	0	78	1	0	0	0	0	1	1	0	2	0	3	3	168
9:45 AM	2	82	0	0	0	84	2	62	5	0	0	69	1	0	0	0	2	1	0	0	2	0	1	2	156
Hourly Total	7	410	3	0	0	420	4	339	13	0	0	356	5	2	2	0	4	9	9	0	6	0	8	15	800
10:00 AM	2	83	1	0	0	86	0	86	1	0	0	87	0	0	1	0	1	1	3	0	2	0	2	5	179
10:15 AM	2	91	0	0	0	93	0	86	3	0	0	89	0	0	0	0	1	0	0	0	2	0	0	2	184
10:30 AM	2	73	1	0	0	76	0	82	0	0	0	82	0	0	1	0	0	1	4	0	1	0	0	5	164
10:45 AM	2	92	0	0	0	94	1	83	1	0	0	85	0	0	2	0	2	2	1	0	0	0	1	1	182
Hourly Total	8	339	2	0	0	349	1	337	5	0	0	343	0	0	4	0	4	4	8	0	5	0	3	13	709
11:00 AM	1	96	0	0	0	97	0	93	0	0	0	93	0	0	0	0	1	0	4	0	0	0	1	4	194
11:15 AM	1	93	0	0	0	94	1	81	2	0	0	84	0	0	0	0	2	0	2	0	1	0	1	3	181
11:30 AM	1	97	0	0	0	98	0	83	0	0	0	83	0	0	2	0	1	2	4	0	2	0	1	6	189
11:45 AM	2	95	0	0	0	97	0	95	1	0	0	96	0	0	1	0	4	1	0	0	2	0	2	2	196
Hourly Total	5	381	0	0	0	386	1	352	3	0	0	356	0	0	3	0	8	3	10	0	5	0	5	15	760
12:00 PM	1	111	1	0	0	113	1	83	1	0	0	85	0	0	1	0	0	1	3	0	2	0	3	5	204
12:15 PM	1	129	1	0	0	131	1	94	1	0	0	96	0	0	0	0	2	0	2	0	2	0	0	4	231
12:30 PM	1	93	0	0	0	94	2	105	3	0	0	110	1	0	0	0	0	1	1	0	1	0	0	2	207
12:45 PM	0	94	0	0	0	94	3	104	0	0	0	107	0	0	0	0	1	0	4	0	0	0	0	4	205
Hourly Total	3	427	2	0	0	432	7	386	5	0	0	398	1	0	1	0	3	2	10	0	5	0	3	15	847
1:00 PM	0	112	1	0	0	113	2	101	3	0	0	106	0	0	1	0	4	1	3	0	3	0	4	6	226
1:15 PM	0	100	0	0	0	100	1	101	0	0	0	102	1	0	2	0	0	3	4	0	2	0	0	6	211
1:30 PM	1	101	0	0	0	102	0	111	0	0	0	111	0	0	0	0	3	0	4	0	0	0	0	4	217
1:45 PM	0	97	0	0	0	97	1	103	2	0	0	106	0	0	1	0	0	1	6	0	0	0	1	6	210
Hourly Total	1	410	1	0	0	412	4	416	5	0	0	425	1	0	4	0	7	5	17	0	5	0	5	22	864

2:00 PM	1	92	1	0	0	94	1	102	3	0	0	106	1	0	0	0	0	1	1	1	0	0	0	2	203
2:15 PM	1	82	0	0	0	83	0	115	0	0	0	115	0	0	1	0	0	1	2	0	1	0	0	3	202
2:30 PM	0	87	0	0	0	87	2	96	0	0	0	98	1	0	0	0	1	1	1	0	1	0	1	2	188
2:45 PM	1	96	0	0	0	97	2	94	1	0	1	97	0	0	3	0	3	3	1	0	0	0	1	1	198
Hourly Total	3	357	1	0	0	361	5	407	4	0	1	416	2	0	4	0	4	6	5	1	2	0	2	8	791
3:00 PM	1	139	0	0	0	140	2	135	2	0	0	139	0	0	0	0	3	0	3	0	1	0	0	4	283
3:15 PM	0	87	0	0	0	87	0	125	2	0	0	127	1	0	1	0	1	2	4	0	0	0	0	4	220
3:30 PM	2	152	0	0	0	154	1	128	1	0	0	130	1	0	0	0	1	1	5	0	1	0	6	6	291
3:45 PM	3	105	0	0	0	108	0	135	1	0	0	136	0	1	2	0	2	3	1	0	1	0	3	2	249
Hourly Total	6	483	0	0	0	489	3	523	6	0	0	532	2	1	3	0	7	6	13	0	3	0	9	16	1043
4:00 PM	0	127	0	0	0	127	3	134	0	0	1	137	1	1	1	0	0	3	8	0	1	0	4	9	276
4:15 PM	0	118	1	0	0	119	2	155	1	0	0	158	0	0	3	0	2	3	1	0	0	0	1	1	281
4:30 PM	0	106	2	0	0	108	1	149	0	0	2	150	1	1	0	0	1	2	5	0	1	0	2	6	266
4:45 PM	1	121	1	0	0	123	4	131	0	0	0	135	1	0	2	0	4	3	0	1	1	0	2	2	263
Hourly Total	1	472	4	0	0	477	10	569	1	0	3	580	3	2	6	0	7	11	14	1	3	0	9	18	1086
5:00 PM	3	109	0	0	0	112	0	141	2	0	0	143	0	0	2	0	2	2	3	0	2	0	2	5	262
5:15 PM	1	120	4	0	0	125	0	134	2	0	0	136	0	1	2	0	2	3	4	0	2	0	1	6	270
5:30 PM	1	91	0	0	0	92	3	132	2	0	0	137	1	0	2	0	0	3	1	0	0	0	1	1	233
5:45 PM	0	102	0	0	0	102	3	112	0	0	0	115	1	0	3	0	6	4	1	0	0	0	1	1	222
Hourly Total	5	422	4	0	0	431	6	519	6	0	0	531	2	1	9	0	10	12	9	0	4	0	5	13	987
6:00 PM	0	110	0	0	1	110	0	133	1	0	0	134	0	0	2	0	1	2	0	0	0	0	4	0	246
6:15 PM	1	122	2	0	0	125	0	125	1	0	0	126	0	0	0	0	0	0	1	0	0	0	3	1	252
6:30 PM	3	115	2	0	0	120	0	121	0	0	0	121	1	0	2	0	2	3	0	0	2	0	1	2	246
6:45 PM	1	89	0	0	0	90	2	114	0	0	1	116	1	0	0	0	1	1	1	0	1	0	2	2	209
Hourly Total	5	436	4	0	1	445	2	493	2	0	1	497	2	0	4	0	4	6	2	0	3	0	10	5	953
Grand Total	53	4913	22	0	1	4988	46	5045	58	0	8	5149	20	6	42	0	66	68	120	2	46	0	66	168	10373
Approach %	1.1	98.5	0.4	0.0	-	-	0.9	98.0	1.1	0.0	-	-	29.4	8.8	61.8	0.0	-	-	71.4	1.2	27.4	0.0	-	-	-
Total %	0.5	47.4	0.2	0.0	-	48.1	0.4	48.6	0.6	0.0	-	49.6	0.2	0.1	0.4	0.0	-	0.7	1.2	0.0	0.4	0.0	-	1.6	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	50	4768	22	0	-	4840	46	4905	55	0	-	5006	17	6	42	0	-	65	117	2	44	0	-	163	10074
% Cars & Light Goods	94.3	97.0	100.0	-	-	97.0	100.0	97.2	94.8	-	-	97.2	85.0	100.0	100.0	-	-	95.6	97.5	100.0	95.7	-	-	97.0	97.1
Buses	2	64	0	0	-	66	0	68	1	0	-	69	2	0	0	0	-	2	0	0	0	0	-	0	137
% Buses	3.8	1.3	0.0	-	-	1.3	0.0	1.3	1.7	-	-	1.3	10.0	0.0	0.0	-	-	2.9	0.0	0.0	0.0	-	-	0.0	1.3
Single-Unit Trucks	1	61	0	0	-	62	0	57	2	0	-	59	1	0	0	0	-	1	3	0	2	0	-	5	127
% Single-Unit Trucks	1.9	1.2	0.0	-	-	1.2	0.0	1.1	3.4	-	-	1.1	5.0	0.0	0.0	-	-	1.5	2.5	0.0	4.3	-	-	3.0	1.2
Articulated Trucks	0	18	0	0	-	18	0	14	0	0	-	14	0	0	0	0	-	0	0	0	0	0	-	0	32
% Articulated Trucks	0.0	0.4	0.0	-	-	0.4	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.3
Bicycles on Road	0	2	0	0	-	2	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	3.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	8	-	-	-	-	-	66	-	-	-	-	-	64	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	97.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Data Plot

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Count Name: Mill Street & Frederick Street
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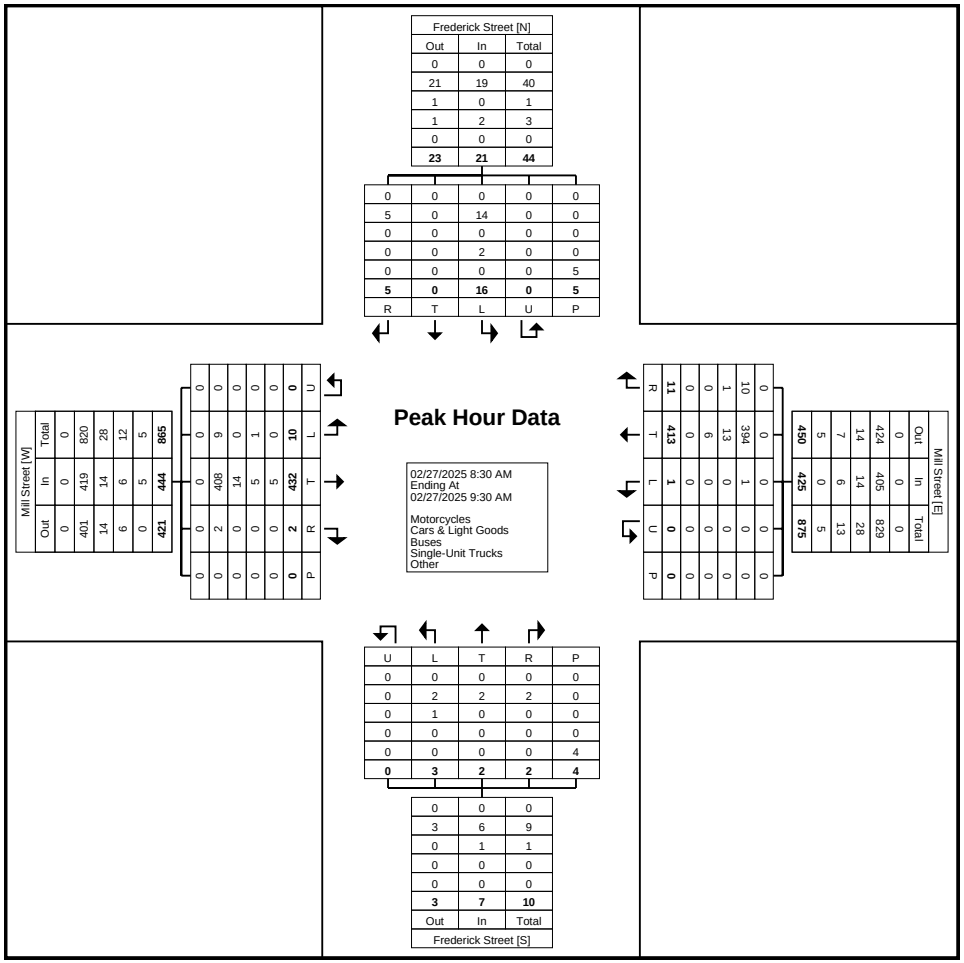
Turning Movement Peak Hour Data (8:30 AM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Frederick Street Northbound						Frederick Street Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:30 AM	3	78	0	0	0	81	0	101	2	0	0	103	0	0	0	0	1	0	3	0	1	0	1	4	188
8:45 AM	3	110	0	0	0	113	0	108	5	0	0	113	0	0	0	0	1	0	5	0	2	0	0	7	233
9:00 AM	1	131	1	0	0	133	0	111	0	0	0	111	2	0	0	0	2	2	5	0	1	0	1	6	252
9:15 AM	3	113	1	0	0	117	1	93	4	0	0	98	1	2	2	0	0	5	3	0	1	0	3	4	224
Total	10	432	2	0	0	444	1	413	11	0	0	425	3	2	2	0	4	7	16	0	5	0	5	21	897
Approach %	2.3	97.3	0.5	0.0	-	-	0.2	97.2	2.6	0.0	-	-	42.9	28.6	28.6	0.0	-	-	76.2	0.0	23.8	0.0	-	-	-
Total %	1.1	48.2	0.2	0.0	-	49.5	0.1	46.0	1.2	0.0	-	47.4	0.3	0.2	0.2	0.0	-	0.8	1.8	0.0	0.6	0.0	-	2.3	-
PHF	0.833	0.824	0.500	0.000	-	0.835	0.250	0.930	0.550	0.000	-	0.940	0.375	0.250	0.250	0.000	-	0.350	0.800	0.000	0.625	0.000	-	0.750	0.890
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	9	408	2	0	-	419	1	394	10	0	-	405	2	2	2	0	-	6	14	0	5	0	-	19	849
% Cars & Light Goods	90.0	94.4	100.0	-	-	94.4	100.0	95.4	90.9	-	-	95.3	66.7	100.0	100.0	-	-	85.7	87.5	-	100.0	-	-	90.5	94.6
Buses	0	14	0	0	-	14	0	13	1	0	-	14	1	0	0	0	-	1	0	0	0	0	-	0	29
% Buses	0.0	3.2	0.0	-	-	3.2	0.0	3.1	9.1	-	-	3.3	33.3	0.0	0.0	-	-	14.3	0.0	-	0.0	-	-	0.0	3.2
Single-Unit Trucks	1	5	0	0	-	6	0	6	0	0	-	6	0	0	0	0	-	0	2	0	0	0	-	2	14
% Single-Unit Trucks	10.0	1.2	0.0	-	-	1.4	0.0	1.5	0.0	-	-	1.4	0.0	0.0	0.0	-	-	0.0	12.5	-	0.0	-	-	9.5	1.6
Articulated Trucks	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5
% Articulated Trucks	0.0	1.2	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Peak Hour Data Plot (8:30 AM)

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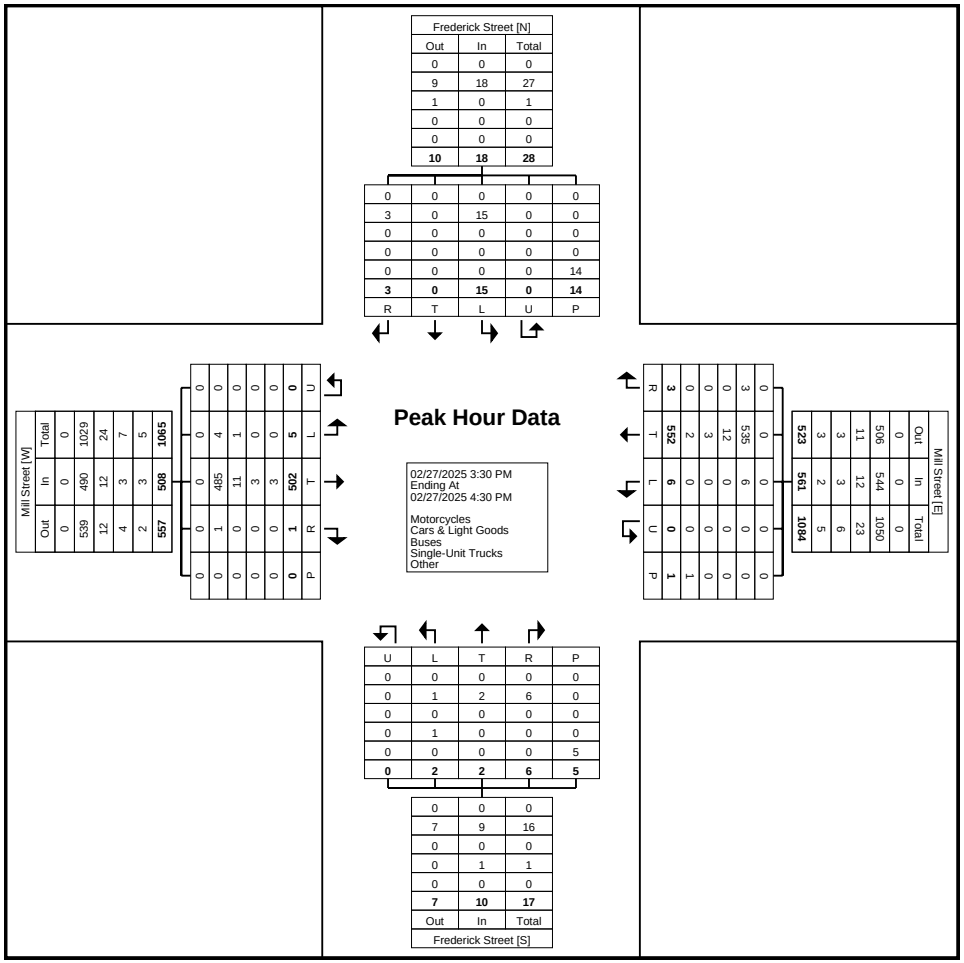
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Frederick Street Northbound						Frederick Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 PM	2	152	0	0	0	154	1	128	1	0	0	130	1	0	0	0	1	1	5	0	1	0	6	6	291
3:45 PM	3	105	0	0	0	108	0	135	1	0	0	136	0	1	2	0	2	3	1	0	1	0	3	2	249
4:00 PM	0	127	0	0	0	127	3	134	0	0	1	137	1	1	1	0	0	3	8	0	1	0	4	9	276
4:15 PM	0	118	1	0	0	119	2	155	1	0	0	158	0	0	3	0	2	3	1	0	0	0	1	1	281
Total	5	502	1	0	0	508	6	552	3	0	1	561	2	2	6	0	5	10	15	0	3	0	14	18	1097
Approach %	1.0	98.8	0.2	0.0	-	-	1.1	98.4	0.5	0.0	-	-	20.0	20.0	60.0	0.0	-	-	83.3	0.0	16.7	0.0	-	-	-
Total %	0.5	45.8	0.1	0.0	-	46.3	0.5	50.3	0.3	0.0	-	51.1	0.2	0.2	0.5	0.0	-	0.9	1.4	0.0	0.3	0.0	-	1.6	-
PHF	0.417	0.826	0.250	0.000	-	0.825	0.500	0.890	0.750	0.000	-	0.888	0.500	0.500	0.500	0.000	-	0.833	0.469	0.000	0.750	0.000	-	0.500	0.942
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	4	485	1	0	-	490	6	535	3	0	-	544	1	2	6	0	-	9	15	0	3	0	-	18	1061
% Cars & Light Goods	80.0	96.6	100.0	-	-	96.5	100.0	96.9	100.0	-	-	97.0	50.0	100.0	100.0	-	-	90.0	100.0	-	100.0	-	-	100.0	96.7
Buses	1	11	0	0	-	12	0	12	0	0	-	12	0	0	0	0	-	0	0	0	0	0	-	0	24
% Buses	20.0	2.2	0.0	-	-	2.4	0.0	2.2	0.0	-	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	2.2
Single-Unit Trucks	0	3	0	0	-	3	0	3	0	0	-	3	1	0	0	0	-	1	0	0	0	0	-	0	7
% Single-Unit Trucks	0.0	0.6	0.0	-	-	0.6	0.0	0.5	0.0	-	-	0.5	50.0	0.0	0.0	-	-	10.0	0.0	-	0.0	-	-	0.0	0.6
Articulated Trucks	0	3	0	0	-	3	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	0.0	0.6	0.0	-	-	0.6	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.4
Bicycles on Road	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	14	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Mill Street & Frederick Street
Site Code: 240109
Start Date: 02/27/2025



Turning Movement Peak Hour Data Plot (3:30 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: St Albans Dr & Main Street N
Site Code: 240109
Start Date: 04/01/2025

Turning Movement Data

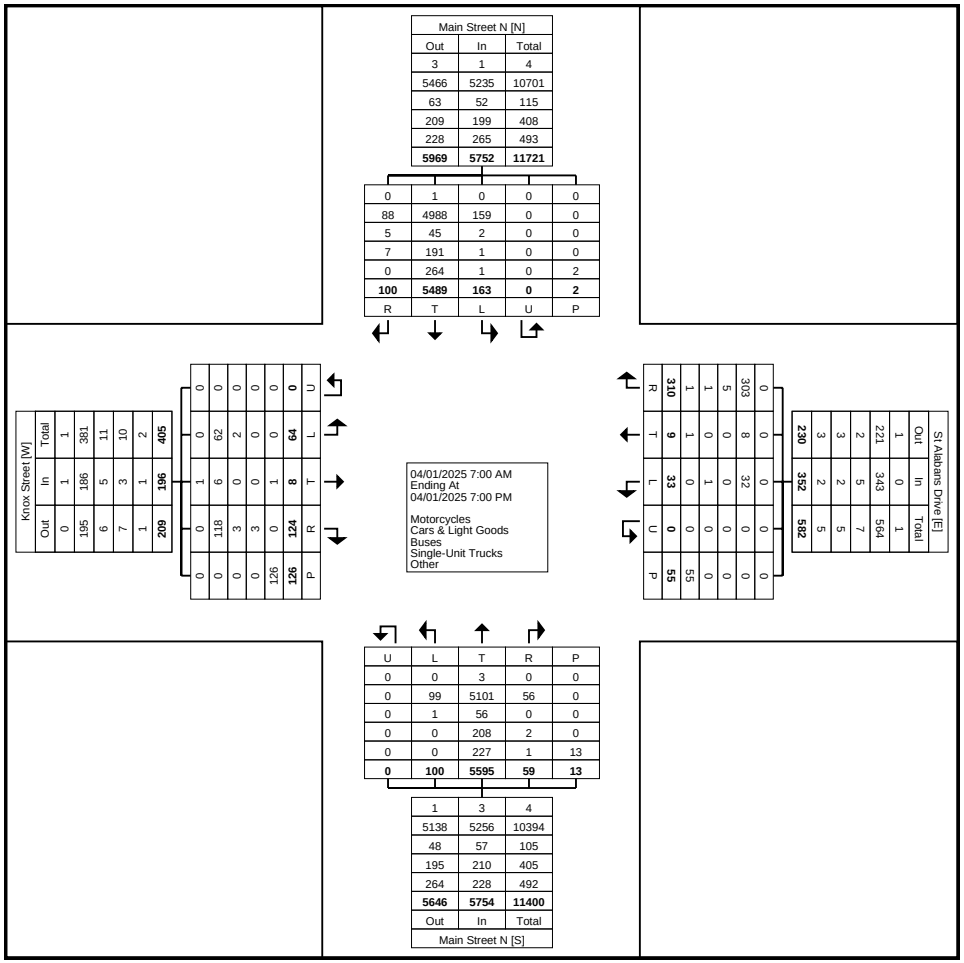
Start Time	Knox Street Eastbound						St Alabans Drive Westbound						Main Street N Northbound						Main Street N Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	1	0	0	0	0	1	1	0	0	0	2	1	0	57	0	0	0	57	3	156	0	0	0	159	218
7:15 AM	1	0	2	0	0	3	1	0	2	0	0	3	0	77	0	0	0	77	7	148	2	0	0	157	240
7:30 AM	0	0	1	0	1	1	0	0	5	0	1	5	0	104	0	0	0	104	6	170	0	0	0	176	286
7:45 AM	1	0	2	0	2	3	0	0	3	0	0	3	1	107	1	0	0	109	2	191	3	0	0	196	311
Hourly Total	3	0	5	0	3	8	2	0	10	0	3	12	1	345	1	0	0	347	18	665	5	0	0	688	1055
8:00 AM	2	0	4	0	0	6	0	0	2	0	2	2	0	101	0	0	0	101	3	167	1	0	0	171	280
8:15 AM	1	0	0	0	2	1	1	0	5	0	0	6	0	85	1	0	0	86	2	141	0	0	0	143	236
8:30 AM	0	1	3	0	1	4	1	0	7	0	0	8	1	103	1	0	0	105	6	130	2	0	0	138	255
8:45 AM	4	2	1	0	4	7	0	0	9	0	2	9	4	101	2	0	0	107	5	138	9	0	0	152	275
Hourly Total	7	3	8	0	7	18	2	0	23	0	4	25	5	390	4	0	0	399	16	576	12	0	0	604	1046
9:00 AM	4	0	2	0	2	6	0	1	7	0	2	8	1	103	0	0	0	104	3	142	1	0	0	146	264
9:15 AM	1	0	3	0	1	4	0	0	3	0	3	3	4	86	1	0	0	91	7	132	4	0	0	143	241
9:30 AM	1	0	4	0	1	5	2	0	2	0	0	4	3	94	2	0	0	99	3	95	0	0	0	98	206
9:45 AM	1	0	1	0	4	2	0	0	9	0	4	9	0	79	1	0	0	80	2	109	2	0	0	113	204
Hourly Total	7	0	10	0	8	17	2	1	21	0	9	24	8	362	4	0	0	374	15	478	7	0	0	500	915
10:00 AM	0	1	2	0	3	3	0	0	5	0	1	5	1	76	1	0	0	78	3	97	2	0	1	102	188
10:15 AM	0	0	0	0	3	0	2	0	2	0	0	4	2	89	0	0	0	91	1	89	0	0	0	90	185
10:30 AM	1	0	2	0	0	3	0	0	6	0	0	6	2	75	0	0	0	77	5	95	1	0	0	101	187
10:45 AM	2	0	1	0	4	3	0	0	7	0	0	7	1	75	4	0	0	80	5	97	0	0	0	102	192
Hourly Total	3	1	5	0	10	9	2	0	20	0	1	22	6	315	5	0	0	326	14	378	3	0	1	395	752
11:00 AM	0	0	4	0	1	4	0	1	11	0	1	12	2	95	1	0	0	98	3	116	1	0	0	120	234
11:15 AM	2	0	5	0	0	7	2	1	6	0	0	9	0	81	3	0	0	84	3	100	1	0	0	104	204
11:30 AM	0	0	2	0	4	2	0	0	5	0	0	5	3	81	2	0	0	86	4	98	3	0	0	105	198
11:45 AM	0	1	3	0	1	4	2	0	9	0	3	11	1	73	3	0	0	77	2	105	2	0	0	109	201
Hourly Total	2	1	14	0	6	17	4	2	31	0	4	37	6	330	9	0	0	345	12	419	7	0	0	438	837
12:00 PM	2	0	4	0	0	6	4	2	5	0	1	11	2	93	3	0	0	98	1	121	0	0	0	122	237
12:15 PM	1	0	1	0	0	2	0	1	6	0	0	7	3	104	1	0	0	108	4	109	2	0	0	115	232
12:30 PM	1	0	2	0	3	3	0	0	2	0	1	2	1	99	1	0	1	101	2	88	3	0	0	93	199
12:45 PM	1	0	4	0	1	5	3	0	3	0	1	6	5	86	2	0	0	93	3	89	3	0	0	95	199
Hourly Total	5	0	11	0	4	16	7	3	16	0	3	26	11	382	7	0	1	400	10	407	8	0	0	425	867
1:00 PM	4	0	4	0	3	8	0	0	7	0	0	7	2	86	2	0	1	90	3	92	2	0	0	97	202
1:15 PM	3	1	5	0	6	9	1	0	8	0	2	9	0	98	0	0	0	98	4	88	2	0	0	94	210
1:30 PM	2	0	2	0	2	4	0	0	7	0	0	7	1	98	3	0	1	102	4	90	2	0	0	96	209
1:45 PM	0	0	3	0	5	3	0	0	3	0	1	3	3	103	1	0	1	107	2	104	1	0	0	107	220
Hourly Total	9	1	14	0	16	24	1	0	25	0	3	26	6	385	6	0	3	397	13	374	7	0	0	394	841

2:00 PM	1	1	4	0	1	6	1	0	6	0	2	7	4	107	2	0	2	113	3	101	3	0	0	107	233
2:15 PM	0	0	0	0	5	0	1	0	8	0	1	9	4	135	1	0	1	140	1	98	1	0	0	100	249
2:30 PM	1	0	2	0	2	3	0	0	8	0	2	8	1	131	3	0	0	135	4	108	2	0	0	114	260
2:45 PM	2	0	3	0	5	5	1	0	7	0	1	8	2	120	0	0	0	122	1	97	1	0	0	99	234
Hourly Total	4	1	9	0	13	14	3	0	29	0	6	32	11	493	6	0	3	510	9	404	7	0	0	420	976
3:00 PM	0	0	0	0	2	0	0	0	8	0	0	8	2	140	2	0	0	144	1	146	3	0	0	150	302
3:15 PM	4	0	1	0	4	5	2	0	16	0	3	18	2	155	1	0	0	158	3	91	0	0	0	94	275
3:30 PM	5	0	2	0	7	7	2	0	7	0	0	9	0	150	1	0	2	151	9	127	3	0	0	139	306
3:45 PM	1	0	2	0	5	3	2	0	11	0	3	13	2	147	2	0	0	151	6	121	4	0	0	131	298
Hourly Total	10	0	5	0	18	15	6	0	42	0	6	48	6	592	6	0	2	604	19	485	10	0	0	514	1181
4:00 PM	1	0	1	0	3	2	2	1	7	0	1	10	3	181	1	0	0	185	6	128	2	0	0	136	333
4:15 PM	1	0	3	0	7	4	0	0	6	0	0	6	0	190	1	0	0	191	3	101	2	0	1	106	307
4:30 PM	0	0	2	0	4	2	0	0	9	0	2	9	3	165	1	0	0	169	6	141	4	0	0	151	331
4:45 PM	0	0	6	0	3	6	1	1	8	0	5	10	2	172	0	0	0	174	2	111	1	0	0	114	304
Hourly Total	2	0	12	0	17	14	3	2	30	0	8	35	8	708	3	0	0	719	17	481	9	0	1	507	1275
5:00 PM	3	1	1	0	7	5	0	0	11	0	1	11	0	182	1	0	0	183	6	137	6	0	0	149	348
5:15 PM	2	0	3	0	5	5	0	0	17	0	5	17	2	191	1	0	0	194	3	112	2	0	0	117	333
5:30 PM	1	0	4	0	1	5	0	1	5	0	0	6	5	199	0	0	0	204	4	138	2	0	0	144	359
5:45 PM	2	0	3	0	2	5	1	0	9	0	0	10	12	169	1	0	0	182	3	100	3	0	0	106	303
Hourly Total	8	1	11	0	15	20	1	1	42	0	6	44	19	741	3	0	0	763	16	487	13	0	0	516	1343
6:00 PM	1	0	6	0	1	7	0	0	7	0	0	7	2	186	2	0	1	190	1	96	2	0	0	99	303
6:15 PM	1	0	3	0	4	4	0	0	5	0	0	5	4	117	1	0	0	122	0	85	2	0	0	87	218
6:30 PM	0	0	6	0	3	6	0	0	5	0	1	5	3	152	1	0	1	156	2	73	7	0	0	82	249
6:45 PM	2	0	5	0	1	7	0	0	4	0	1	4	4	97	1	0	2	102	1	81	1	0	0	83	196
Hourly Total	4	0	20	0	9	24	0	0	21	0	2	21	13	552	5	0	4	570	4	335	12	0	0	351	966
Grand Total	64	8	124	0	126	196	33	9	310	0	55	352	100	5595	59	0	13	5754	163	5489	100	0	2	5752	12054
Approach %	32.7	4.1	63.3	0.0	-	-	9.4	2.6	88.1	0.0	-	-	1.7	97.2	1.0	0.0	-	-	2.8	95.4	1.7	0.0	-	-	-
Total %	0.5	0.1	1.0	0.0	-	1.6	0.3	0.1	2.6	0.0	-	2.9	0.8	46.4	0.5	0.0	-	47.7	1.4	45.5	0.8	0.0	-	47.7	-
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	0	3	0	0	-	3	0	1	0	0	-	1	5
% Motorcycles	0.0	12.5	0.0	-	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	62	6	118	0	-	186	32	8	303	0	-	343	99	5101	56	0	-	5256	159	4988	88	0	-	5235	11020
% Cars & Light Goods	96.9	75.0	95.2	-	-	94.9	97.0	88.9	97.7	-	-	97.4	99.0	91.2	94.9	-	-	91.3	97.5	90.9	88.0	-	-	91.0	91.4
Buses	2	0	3	0	-	5	0	0	5	0	-	5	1	56	0	0	-	57	2	45	5	0	-	52	119
% Buses	3.1	0.0	2.4	-	-	2.6	0.0	0.0	1.6	-	-	1.4	1.0	1.0	0.0	-	-	1.0	1.2	0.8	5.0	-	-	0.9	1.0
Single-Unit Trucks	0	0	3	0	-	3	1	0	1	0	-	2	0	208	2	0	-	210	1	191	7	0	-	199	414
% Single-Unit Trucks	0.0	0.0	2.4	-	-	1.5	3.0	0.0	0.3	-	-	0.6	0.0	3.7	3.4	-	-	3.6	0.6	3.5	7.0	-	-	3.5	3.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	226	1	0	-	227	0	264	0	0	-	264	491
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	4.0	1.7	-	-	3.9	0.0	4.8	0.0	-	-	4.6	4.1
Bicycles on Road	0	1	0	0	-	1	0	1	1	0	-	2	0	1	0	0	-	1	1	0	0	0	-	1	5
% Bicycles on Road	0.0	12.5	0.0	-	-	0.5	0.0	11.1	0.3	-	-	0.6	0.0	0.0	0.0	-	-	0.0	0.6	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.8	-	-	-	-	-	3.6	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	125	-	-	-	-	-	53	-	-	-	-	-	13	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	99.2	-	-	-	-	-	96.4	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: St Albans Dr & Main Street N
Site Code: 240109
Start Date: 04/01/2025



Turning Movement Data Plot

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Count Name: St Albans Dr & Main Street N
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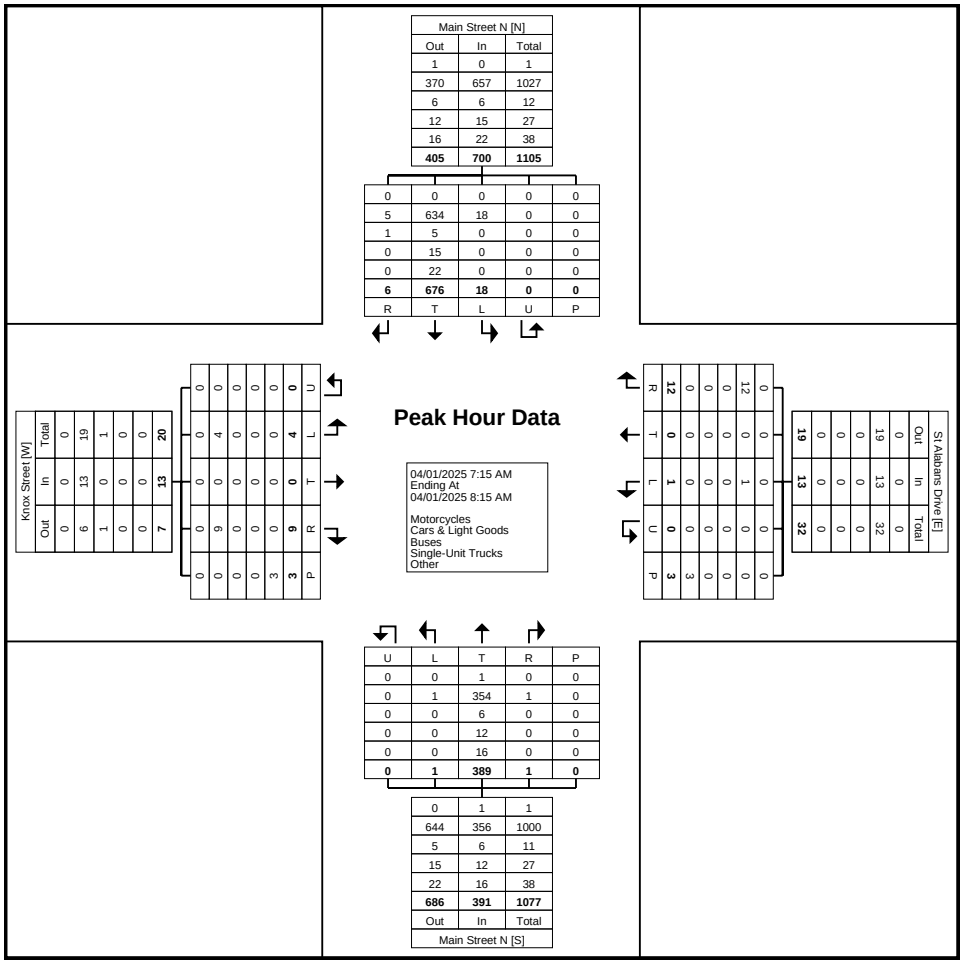
Turning Movement Peak Hour Data (7:15 AM)

Start Time	Knox Street Eastbound						St Alabans Drive Westbound						Main Street N Northbound						Main Street N Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:15 AM	1	0	2	0	0	3	1	0	2	0	0	3	0	77	0	0	0	77	7	148	2	0	0	157	240
7:30 AM	0	0	1	0	1	1	0	0	5	0	1	5	0	104	0	0	0	104	6	170	0	0	0	176	286
7:45 AM	1	0	2	0	2	3	0	0	3	0	0	3	1	107	1	0	0	109	2	191	3	0	0	196	311
8:00 AM	2	0	4	0	0	6	0	0	2	0	2	2	0	101	0	0	0	101	3	167	1	0	0	171	280
Total	4	0	9	0	3	13	1	0	12	0	3	13	1	389	1	0	0	391	18	676	6	0	0	700	1117
Approach %	30.8	0.0	69.2	0.0	-	-	7.7	0.0	92.3	0.0	-	-	0.3	99.5	0.3	0.0	-	-	2.6	96.6	0.9	0.0	-	-	-
Total %	0.4	0.0	0.8	0.0	-	1.2	0.1	0.0	1.1	0.0	-	1.2	0.1	34.8	0.1	0.0	-	35.0	1.6	60.5	0.5	0.0	-	62.7	-
PHF	0.500	0.000	0.563	0.000	-	0.542	0.250	0.000	0.600	0.000	-	0.650	0.250	0.909	0.250	0.000	-	0.897	0.643	0.885	0.500	0.000	-	0.893	0.898
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	4	0	9	0	-	13	1	0	12	0	-	13	1	354	1	0	-	356	18	634	5	0	-	657	1039
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	100.0	91.0	100.0	-	-	91.0	100.0	93.8	83.3	-	-	93.9	93.0
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	6	0	0	-	6	0	5	1	0	-	6	12
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	1.5	0.0	-	-	1.5	0.0	0.7	16.7	-	-	0.9	1.1
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	12	0	0	-	12	0	15	0	0	-	15	27
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	3.1	0.0	-	-	3.1	0.0	2.2	0.0	-	-	2.1	2.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	16	0	0	-	16	0	22	0	0	-	22	38
% Articulated Trucks	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	4.1	0.0	-	-	4.1	0.0	3.3	0.0	-	-	3.1	3.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
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Count Name: St Albans Dr & Main Street N
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Start Date: 04/01/2025



Turning Movement Peak Hour Data Plot (7:15 AM)

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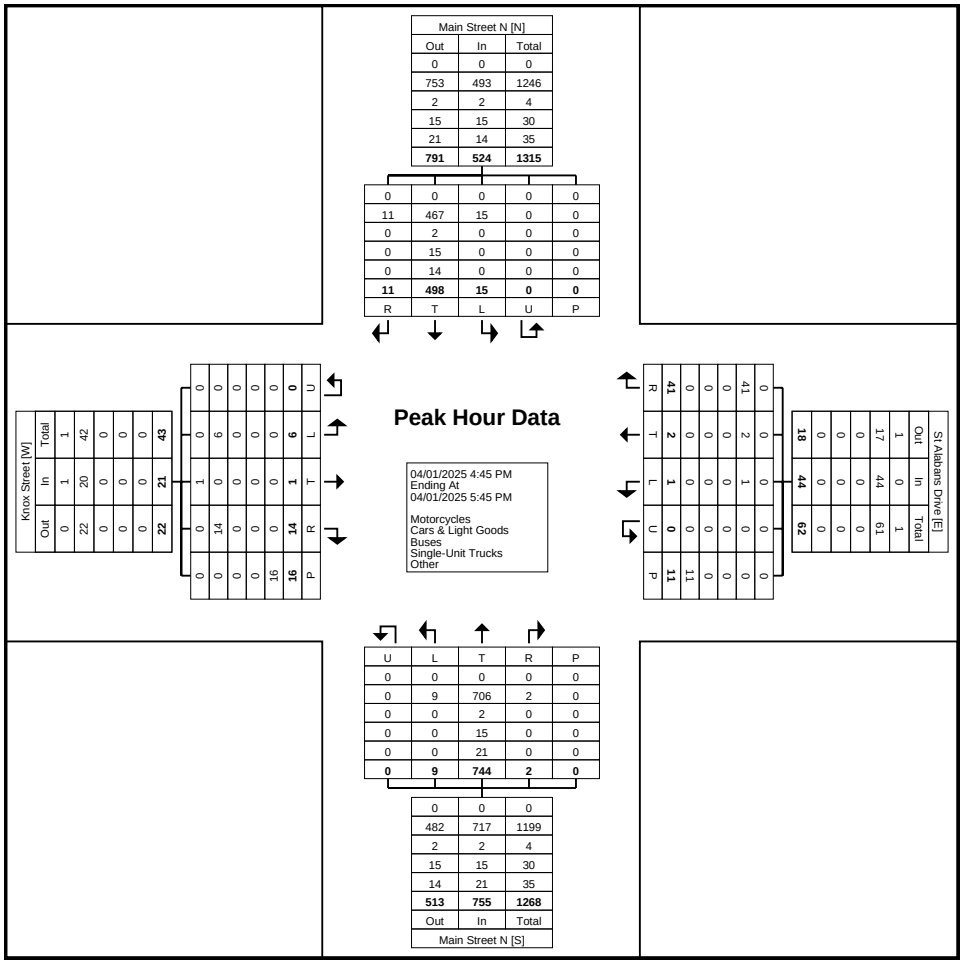
Turning Movement Peak Hour Data (4:45 PM)

Start Time	Knox Street Eastbound						St Alabans Drive Westbound						Main Street N Northbound						Main Street N Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	0	0	6	0	3	6	1	1	8	0	5	10	2	172	0	0	0	174	2	111	1	0	0	114	304
5:00 PM	3	1	1	0	7	5	0	0	11	0	1	11	0	182	1	0	0	183	6	137	6	0	0	149	348
5:15 PM	2	0	3	0	5	5	0	0	17	0	5	17	2	191	1	0	0	194	3	112	2	0	0	117	333
5:30 PM	1	0	4	0	1	5	0	1	5	0	0	6	5	199	0	0	0	204	4	138	2	0	0	144	359
Total	6	1	14	0	16	21	1	2	41	0	11	44	9	744	2	0	0	755	15	498	11	0	0	524	1344
Approach %	28.6	4.8	66.7	0.0	-	-	2.3	4.5	93.2	0.0	-	-	1.2	98.5	0.3	0.0	-	-	2.9	95.0	2.1	0.0	-	-	-
Total %	0.4	0.1	1.0	0.0	-	1.6	0.1	0.1	3.1	0.0	-	3.3	0.7	55.4	0.1	0.0	-	56.2	1.1	37.1	0.8	0.0	-	39.0	-
PHF	0.500	0.250	0.583	0.000	-	0.875	0.250	0.500	0.603	0.000	-	0.647	0.450	0.935	0.500	0.000	-	0.925	0.625	0.902	0.458	0.000	-	0.879	0.936
Motorcycles	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	0.0	100.0	0.0	-	-	4.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	6	0	14	0	-	20	1	2	41	0	-	44	9	706	2	0	-	717	15	467	11	0	-	493	1274
% Cars & Light Goods	100.0	0.0	100.0	-	-	95.2	100.0	100.0	100.0	-	-	100.0	100.0	94.9	100.0	-	-	95.0	100.0	93.8	100.0	-	-	94.1	94.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	2	0	0	-	2	4
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.3	0.0	-	-	0.3	0.0	0.4	0.0	-	-	0.4	0.3
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	15	0	0	-	15	0	15	0	0	-	15	30
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.0	0.0	-	-	2.0	0.0	3.0	0.0	-	-	2.9	2.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	21	0	0	-	21	0	14	0	0	-	14	35
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	2.8	0.0	-	-	2.8	0.0	2.8	0.0	-	-	2.7	2.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	16	-	-	-	-	-	11	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: St Albans Dr & Main Street N
Site Code: 240109
Start Date: 04/01/2025



Turning Movement Peak Hour Data Plot (4:45 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Willow Street N & Mill Street E
Site Code: 240109
Start Date: 04/01/2025

Turning Movement Data

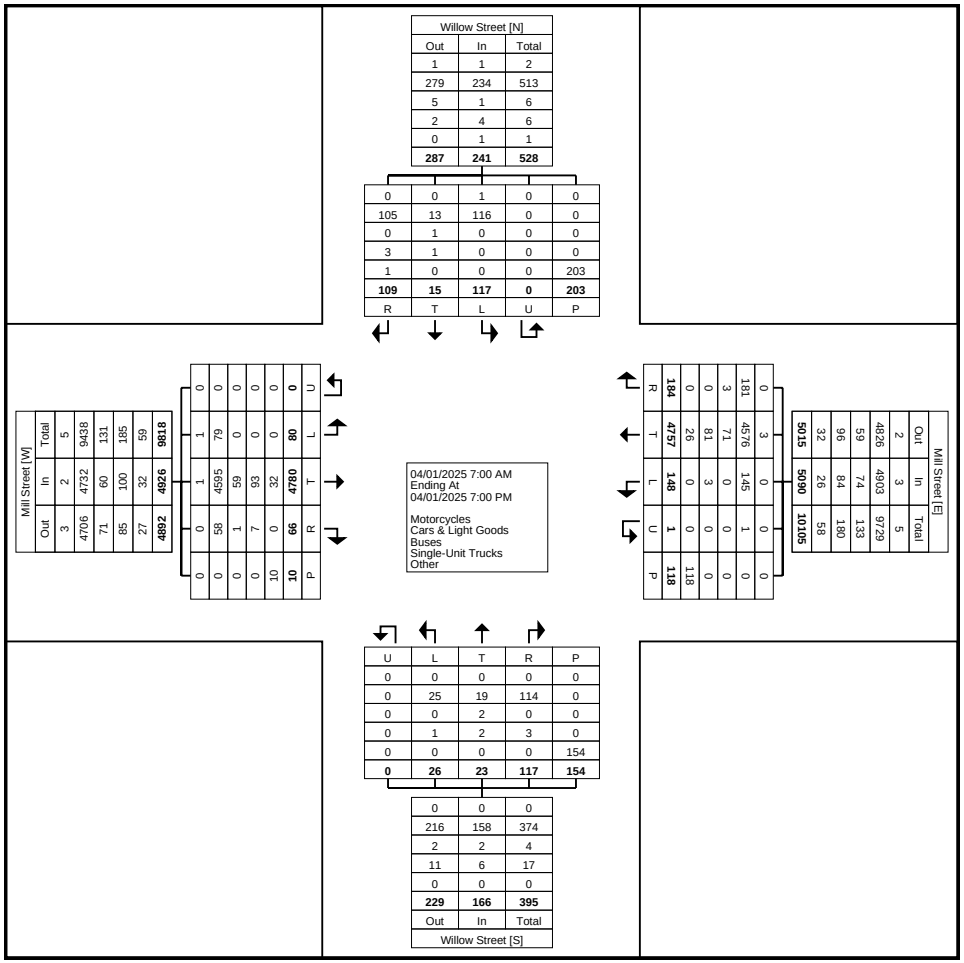
Start Time	Mill Street Eastbound						Mill Street Westbound						Willow Street Northbound						Willow Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	2	97	0	0	0	99	3	64	2	0	2	69	0	0	0	0	0	0	1	0	0	0	1	1	169
7:15 AM	2	100	2	0	0	104	1	74	3	0	2	78	0	0	0	0	1	0	0	0	1	0	3	1	183
7:30 AM	2	104	0	0	1	106	0	99	1	0	0	100	1	1	3	0	1	5	1	0	1	0	1	2	213
7:45 AM	0	106	0	0	1	106	1	86	1	0	0	88	0	1	3	0	1	4	0	0	2	0	3	2	200
Hourly Total	6	407	2	0	2	415	5	323	7	0	4	335	1	2	6	0	3	9	2	0	4	0	8	6	765
8:00 AM	0	91	0	0	0	91	1	116	1	0	0	118	0	0	2	0	2	2	1	1	0	0	7	2	213
8:15 AM	2	116	1	0	0	119	2	83	4	0	0	89	0	0	0	0	0	0	1	0	1	0	2	2	210
8:30 AM	2	112	1	0	0	115	2	92	0	0	1	94	0	1	1	0	1	2	0	1	1	0	0	2	213
8:45 AM	3	136	3	0	0	142	4	103	7	0	1	114	1	1	2	0	0	4	1	0	2	0	1	3	263
Hourly Total	7	455	5	0	0	467	9	394	12	0	2	415	1	2	5	0	3	8	3	2	4	0	10	9	899
9:00 AM	4	131	1	0	0	136	2	96	3	0	3	101	0	0	1	0	1	1	2	2	2	0	0	6	244
9:15 AM	1	96	2	0	0	99	4	87	5	0	1	96	1	0	1	0	2	2	2	0	4	0	2	6	203
9:30 AM	2	83	0	0	0	85	4	80	2	0	5	86	1	0	1	0	5	2	2	0	1	0	5	3	176
9:45 AM	1	86	2	0	0	89	3	86	1	0	6	90	0	0	3	0	3	3	6	0	1	0	5	7	189
Hourly Total	8	396	5	0	0	409	13	349	11	0	15	373	2	0	6	0	11	8	12	2	8	0	12	22	812
10:00 AM	1	95	0	0	0	96	4	72	1	0	1	77	1	0	4	0	3	5	4	0	1	0	2	5	183
10:15 AM	1	79	0	0	0	80	2	85	2	0	1	89	1	0	3	0	4	4	2	0	3	0	7	5	178
10:30 AM	3	87	5	0	0	95	2	67	5	0	0	74	0	1	1	0	3	2	3	0	4	0	1	7	178
10:45 AM	1	78	1	0	0	80	4	82	5	0	0	91	0	0	2	0	3	2	3	1	2	0	2	6	179
Hourly Total	6	339	6	0	0	351	12	306	13	0	2	331	2	1	10	0	13	13	12	1	10	0	12	23	718
11:00 AM	4	91	6	0	1	101	4	69	2	0	1	75	1	1	1	0	4	3	3	1	2	0	4	6	185
11:15 AM	4	82	2	0	0	88	3	71	14	0	3	88	0	0	4	0	3	4	2	1	5	0	3	8	188
11:30 AM	1	88	0	0	1	89	7	101	4	0	1	112	1	0	3	0	2	4	6	0	5	0	6	11	216
11:45 AM	3	101	1	0	0	105	7	79	2	0	0	88	1	0	5	0	8	6	3	0	1	0	9	4	203
Hourly Total	12	362	9	0	2	383	21	320	22	0	5	363	3	1	13	0	17	17	14	2	13	0	22	29	792
12:00 PM	1	105	2	0	0	108	2	107	4	0	4	113	0	0	5	0	4	5	3	1	0	0	6	4	230
12:15 PM	1	91	2	0	0	94	4	93	1	0	3	98	0	1	3	0	0	4	2	0	1	0	4	3	199
12:30 PM	2	83	1	0	0	86	2	97	5	0	1	104	0	0	1	0	1	1	1	0	4	0	2	5	196
12:45 PM	1	98	1	0	0	100	2	103	4	0	0	109	1	0	4	0	1	5	6	1	2	0	5	9	223
Hourly Total	5	377	6	0	0	388	10	400	14	0	8	424	1	1	13	0	6	15	12	2	7	0	17	21	848
1:00 PM	0	86	0	0	0	86	4	99	5	0	1	108	1	0	3	0	7	4	2	0	1	0	6	3	201
1:15 PM	0	90	0	0	0	90	5	87	3	0	2	95	2	1	1	0	0	4	6	0	3	0	5	9	198
1:30 PM	1	78	1	0	1	80	6	70	4	1	1	81	0	0	2	0	1	2	2	0	1	0	2	3	166
1:45 PM	1	109	1	0	0	111	1	96	7	0	1	104	0	1	2	0	6	3	4	0	2	0	4	6	224
Hourly Total	2	363	2	0	1	367	16	352	19	1	5	388	3	2	8	0	14	13	14	0	7	0	17	21	789

2:00 PM	1	112	1	0	1	114	0	117	2	0	1	119	0	1	4	0	3	5	1	1	4	0	4	6	244
2:15 PM	2	106	0	0	0	108	5	99	5	0	0	109	1	0	0	0	7	1	1	1	4	0	5	6	224
2:30 PM	2	110	1	0	0	113	6	106	3	0	3	115	0	1	3	0	2	4	2	0	1	0	5	3	235
2:45 PM	1	95	0	0	0	96	5	122	4	0	3	131	0	0	1	0	8	1	3	0	1	0	6	4	232
Hourly Total	6	423	2	0	1	431	16	444	14	0	7	474	1	2	8	0	20	11	7	2	10	0	20	19	935
3:00 PM	2	109	3	0	0	114	2	122	4	0	4	128	0	0	4	0	4	4	4	1	3	0	5	8	254
3:15 PM	1	107	2	0	0	110	0	112	7	0	8	119	0	0	2	0	2	2	3	2	4	0	4	9	240
3:30 PM	3	142	1	0	0	146	3	106	1	0	12	110	0	0	3	0	2	3	7	0	5	0	7	12	271
3:45 PM	0	110	3	0	0	113	0	126	2	0	7	128	1	3	3	0	6	7	4	0	4	0	12	8	256
Hourly Total	6	468	9	0	0	483	5	466	14	0	31	485	1	3	12	0	14	16	18	3	16	0	28	37	1021
4:00 PM	1	106	3	0	0	110	5	129	4	0	10	138	1	0	2	0	9	3	0	0	5	0	8	5	256
4:15 PM	1	114	0	0	0	115	3	130	4	0	4	137	3	0	2	0	2	5	2	0	2	0	8	4	261
4:30 PM	3	101	1	0	2	105	2	112	9	0	10	123	1	1	3	0	4	5	5	0	2	0	3	7	240
4:45 PM	1	107	1	0	0	109	5	125	3	0	10	133	1	1	10	0	5	12	3	0	1	0	4	4	258
Hourly Total	6	428	5	0	2	439	15	496	20	0	34	531	6	2	17	0	20	25	10	0	10	0	23	20	1015
5:00 PM	1	99	1	0	2	101	5	128	2	0	0	135	1	2	6	0	8	9	2	0	0	0	10	2	247
5:15 PM	3	105	4	0	0	112	2	136	6	0	0	144	2	2	4	0	0	8	1	0	5	0	5	6	270
5:30 PM	4	97	0	0	0	101	3	128	3	0	0	134	0	1	2	0	1	3	2	0	4	0	1	6	244
5:45 PM	1	103	3	0	0	107	2	108	9	0	0	119	1	0	0	0	7	1	1	0	3	0	3	4	231
Hourly Total	9	404	8	0	2	421	12	500	20	0	0	532	4	5	12	0	16	21	6	0	12	0	19	18	992
6:00 PM	1	90	2	0	0	93	2	127	7	0	1	136	0	1	2	0	1	3	1	1	5	0	2	7	239
6:15 PM	2	88	1	0	0	91	5	92	2	0	1	99	0	0	2	0	10	2	1	0	1	0	3	2	194
6:30 PM	3	84	2	0	0	89	5	95	4	0	1	104	0	0	2	0	3	2	3	0	0	0	3	3	198
6:45 PM	1	96	2	0	0	99	2	93	5	0	2	100	1	1	1	0	3	3	2	0	2	0	7	4	206
Hourly Total	7	358	7	0	0	372	14	407	18	0	5	439	1	2	7	0	17	10	7	1	8	0	15	16	837
Grand Total	80	4780	66	0	10	4926	148	4757	184	1	118	5090	26	23	117	0	154	166	117	15	109	0	203	241	10423
Approach %	1.6	97.0	1.3	0.0	-	-	2.9	93.5	3.6	0.0	-	-	15.7	13.9	70.5	0.0	-	-	48.5	6.2	45.2	0.0	-	-	-
Total %	0.8	45.9	0.6	0.0	-	47.3	1.4	45.6	1.8	0.0	-	48.8	0.2	0.2	1.1	0.0	-	1.6	1.1	0.1	1.0	0.0	-	2.3	-
Motorcycles	1	1	0	0	-	2	0	3	0	0	-	3	0	0	0	0	-	0	1	0	0	0	-	1	6
% Motorcycles	1.3	0.0	0.0	-	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	-	-	0.0	0.9	0.0	0.0	-	-	0.4	0.1
Cars & Light Goods	79	4595	58	0	-	4732	145	4576	181	1	-	4903	25	19	114	0	-	158	116	13	105	0	-	234	10027
% Cars & Light Goods	98.8	96.1	87.9	-	-	96.1	98.0	96.2	98.4	100.0	-	96.3	96.2	82.6	97.4	-	-	95.2	99.1	86.7	96.3	-	-	97.1	96.2
Buses	0	59	1	0	-	60	0	71	3	0	-	74	0	2	0	0	-	2	0	1	0	0	-	1	137
% Buses	0.0	1.2	1.5	-	-	1.2	0.0	1.5	1.6	0.0	-	1.5	0.0	8.7	0.0	-	-	1.2	0.0	6.7	0.0	-	-	0.4	1.3
Single-Unit Trucks	0	93	7	0	-	100	3	81	0	0	-	84	1	2	3	0	-	6	0	1	3	0	-	4	194
% Single-Unit Trucks	0.0	1.9	10.6	-	-	2.0	2.0	1.7	0.0	0.0	-	1.7	3.8	8.7	2.6	-	-	3.6	0.0	6.7	2.8	-	-	1.7	1.9
Articulated Trucks	0	32	0	0	-	32	0	26	0	0	-	26	0	0	0	0	-	0	0	0	1	0	-	1	59
% Articulated Trucks	0.0	0.7	0.0	-	-	0.6	0.0	0.5	0.0	0.0	-	0.5	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.9	-	-	0.4	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	7	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	1.3	-	-	-	-	-	3.4	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	118	-	-	-	-	-	152	-	-	-	-	-	196	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	98.7	-	-	-	-	-	96.6	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Willow Street N & Mill Street E
Site Code: 240109
Start Date: 04/01/2025
Page No: 3



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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519-896-3163 cbowness@ptsl.com

Count Name: Willow Street N & Mill Street E
Site Code: 240109
Start Date: 04/01/2025

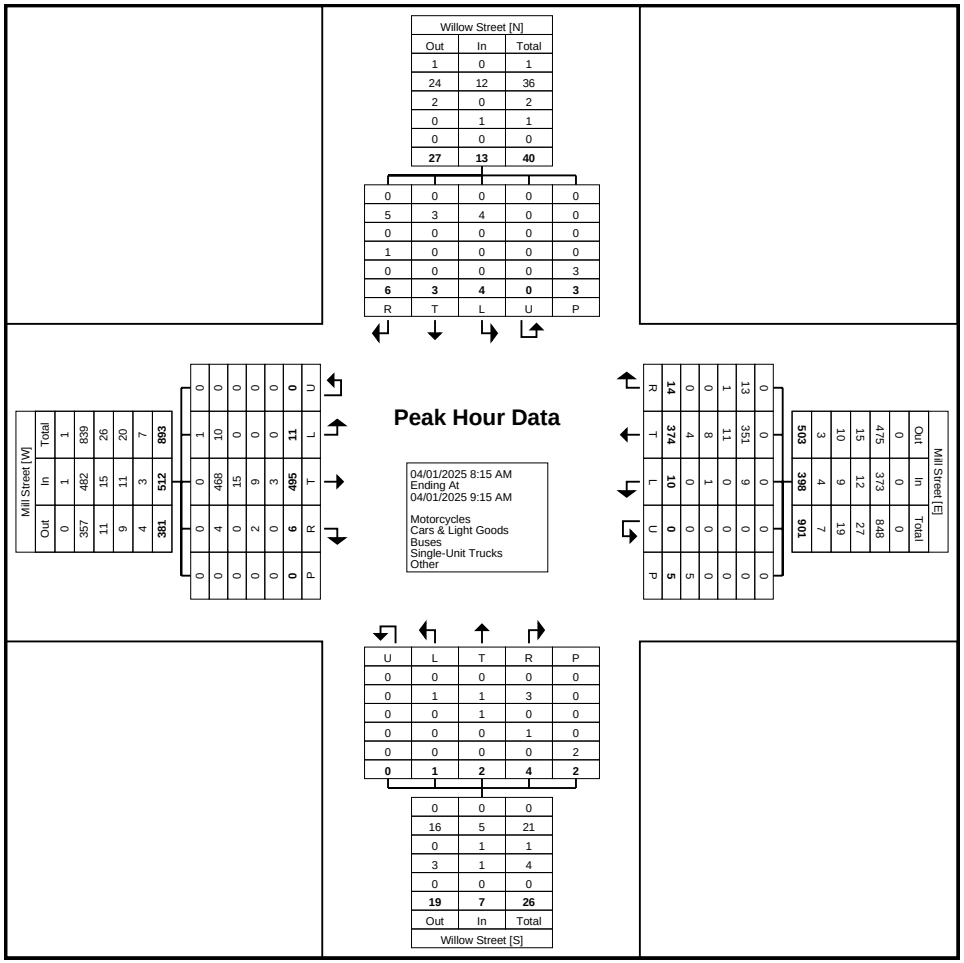
Turning Movement Peak Hour Data (8:15 AM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Willow Street Northbound						Willow Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:15 AM	2	116	1	0	0	119	2	83	4	0	0	89	0	0	0	0	0	0	1	0	1	0	2	2	210
8:30 AM	2	112	1	0	0	115	2	92	0	0	1	94	0	1	1	0	1	2	0	1	1	0	0	2	213
8:45 AM	3	136	3	0	0	142	4	103	7	0	1	114	1	1	2	0	0	4	1	0	2	0	1	3	263
9:00 AM	4	131	1	0	0	136	2	96	3	0	3	101	0	0	1	0	1	1	2	2	2	0	0	6	244
Total	11	495	6	0	0	512	10	374	14	0	5	398	1	2	4	0	2	7	4	3	6	0	3	13	930
Approach %	2.1	96.7	1.2	0.0	-	-	2.5	94.0	3.5	0.0	-	-	14.3	28.6	57.1	0.0	-	-	30.8	23.1	46.2	0.0	-	-	-
Total %	1.2	53.2	0.6	0.0	-	55.1	1.1	40.2	1.5	0.0	-	42.8	0.1	0.2	0.4	0.0	-	0.8	0.4	0.3	0.6	0.0	-	1.4	-
PHF	0.688	0.910	0.500	0.000	-	0.901	0.625	0.908	0.500	0.000	-	0.873	0.250	0.500	0.500	0.000	-	0.438	0.500	0.375	0.750	0.000	-	0.542	0.884
Motorcycles	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Motorcycles	9.1	0.0	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	10	468	4	0	-	482	9	351	13	0	-	373	1	1	3	0	-	5	4	3	5	0	-	12	872
% Cars & Light Goods	90.9	94.5	66.7	-	-	94.1	90.0	93.9	92.9	-	-	93.7	100.0	50.0	75.0	-	-	71.4	100.0	100.0	83.3	-	-	92.3	93.8
Buses	0	15	0	0	-	15	0	11	1	0	-	12	0	1	0	0	-	1	0	0	0	0	-	0	28
% Buses	0.0	3.0	0.0	-	-	2.9	0.0	2.9	7.1	-	-	3.0	0.0	50.0	0.0	-	-	14.3	0.0	0.0	0.0	-	-	0.0	3.0
Single-Unit Trucks	0	9	2	0	-	11	1	8	0	0	-	9	0	0	1	0	-	1	0	0	1	0	-	1	22
% Single-Unit Trucks	0.0	1.8	33.3	-	-	2.1	10.0	2.1	0.0	-	-	2.3	0.0	0.0	25.0	-	-	14.3	0.0	0.0	16.7	-	-	7.7	2.4
Articulated Trucks	0	3	0	0	-	3	0	4	0	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	7
% Articulated Trucks	0.0	0.6	0.0	-	-	0.6	0.0	1.1	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.8
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	2	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Start Date: 04/01/2025



Turning Movement Peak Hour Data Plot (8:15 AM)

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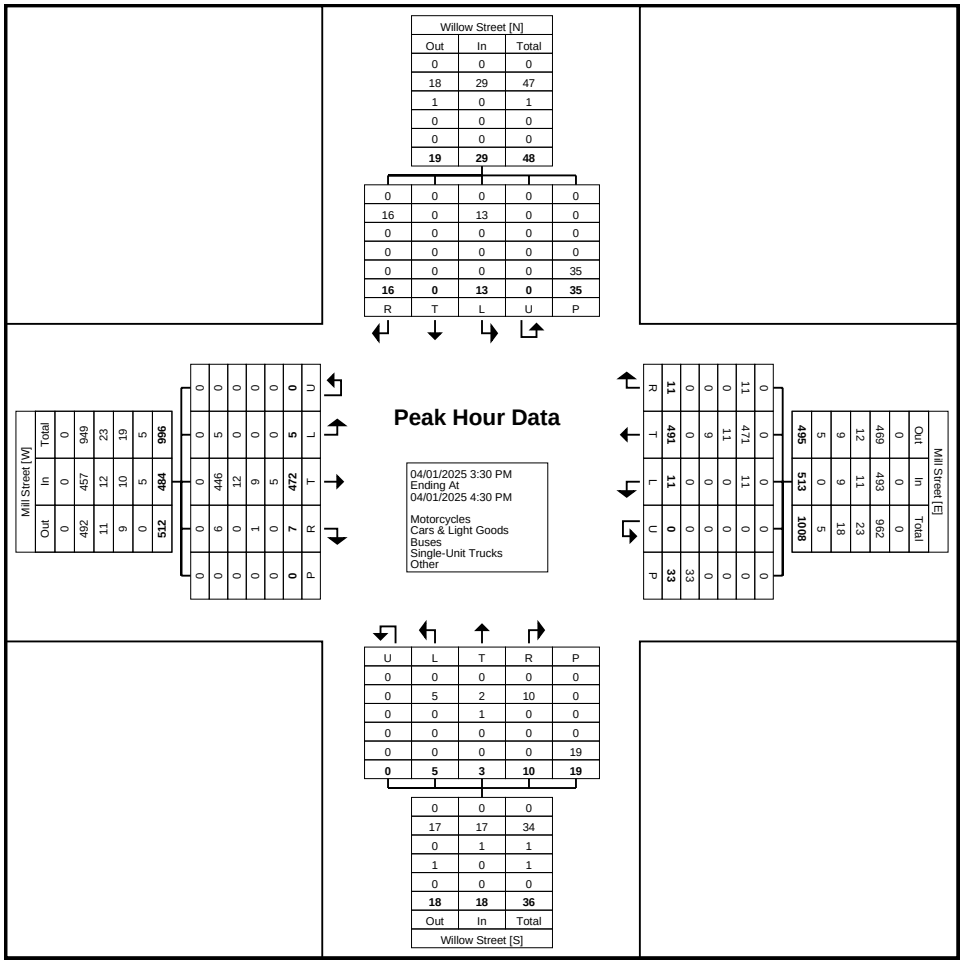
Turning Movement Peak Hour Data (3:30 PM)

Start Time	Mill Street Eastbound						Mill Street Westbound						Willow Street Northbound						Willow Street Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:30 PM	3	142	1	0	0	146	3	106	1	0	12	110	0	0	3	0	2	3	7	0	5	0	7	12	271
3:45 PM	0	110	3	0	0	113	0	126	2	0	7	128	1	3	3	0	6	7	4	0	4	0	12	8	256
4:00 PM	1	106	3	0	0	110	5	129	4	0	10	138	1	0	2	0	9	3	0	0	5	0	8	5	256
4:15 PM	1	114	0	0	0	115	3	130	4	0	4	137	3	0	2	0	2	5	2	0	2	0	8	4	261
Total	5	472	7	0	0	484	11	491	11	0	33	513	5	3	10	0	19	18	13	0	16	0	35	29	1044
Approach %	1.0	97.5	1.4	0.0	-	-	2.1	95.7	2.1	0.0	-	-	27.8	16.7	55.6	0.0	-	-	44.8	0.0	55.2	0.0	-	-	-
Total %	0.5	45.2	0.7	0.0	-	46.4	1.1	47.0	1.1	0.0	-	49.1	0.5	0.3	1.0	0.0	-	1.7	1.2	0.0	1.5	0.0	-	2.8	-
PHF	0.417	0.831	0.583	0.000	-	0.829	0.550	0.944	0.688	0.000	-	0.929	0.417	0.250	0.833	0.000	-	0.643	0.464	0.000	0.800	0.000	-	0.604	0.963
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Cars & Light Goods	5	446	6	0	-	457	11	471	11	0	-	493	5	2	10	0	-	17	13	0	16	0	-	29	996
% Cars & Light Goods	100.0	94.5	85.7	-	-	94.4	100.0	95.9	100.0	-	-	96.1	100.0	66.7	100.0	-	-	94.4	100.0	-	100.0	-	-	100.0	95.4
Buses	0	12	0	0	-	12	0	11	0	0	-	11	0	1	0	0	-	1	0	0	0	0	-	0	24
% Buses	0.0	2.5	0.0	-	-	2.5	0.0	2.2	0.0	-	-	2.1	0.0	33.3	0.0	-	-	5.6	0.0	-	0.0	-	-	0.0	2.3
Single-Unit Trucks	0	9	1	0	-	10	0	9	0	0	-	9	0	0	0	0	-	0	0	0	0	0	-	0	19
% Single-Unit Trucks	0.0	1.9	14.3	-	-	2.1	0.0	1.8	0.0	-	-	1.8	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	1.8
Articulated Trucks	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5
% Articulated Trucks	0.0	1.1	0.0	-	-	1.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	33	-	-	-	-	-	19	-	-	-	-	-	35	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Willow Street N & Mill Street E
Site Code: 240109
Start Date: 04/01/2025



Turning Movement Peak Hour Data Plot (3:30 PM)

TRAFFIC SIGNAL Timing Form

TOWN OF HALTON HILLS
ENGINEERING & PUBLIC WORKS DEPARTMENT
Working Together Working for You!

Date: **March 24, 2025**

Intersection:. **Main St. @ Mill St. (Acton)**

		Ph 1	Ph 2	Ph 3	Ph 4	Ph 5	Ph 6	Ph 7	Ph 8
	Dir>	*SB Adv.*	*N | S*		*E | W*		N/S		E/W
Min Grn		5	27		12		27		12
Walk			10		10		10		13
Ped Clr			17		20		17		20
Veh Ext		2.0	3.0		3.0		3.0		3.0
Max 1		15	42		33		42		33
Max 2		11	50		40		50		40
Max 3									
Yel		3.0	4.5		4.0		4.5		4.0
Red		1.0	2.0		2.5		2.0		2.5
Red Rvt									
Act B4									
Sec Act									
Max Init									
T B4 R									
Cars W									
TTR									
Min Gap									

Notes: Ph. 4 WB Primary Head Right Turn Arrow to called concurrently with Phase 1 SB Adv. G.L.T. Arrow.

Collision Details Report

From: January 1, 2019 **To:** December 31, 2024

Location ..... BOWER STREET @ WILLOW STREET NORTH **Municipality.....** ACTON

Traffic Control.... Yield sign **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
2200321218	2022-Oct-27, Thu,11:38	Clear	Turning movement	P.D. only	South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	d1 charged				North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	

Location ..... MAIN STREET NORTH @ ST. ALBANS DRIVE **Municipality.....** ACTON

Traffic Control.... Stop sign **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
21365944	2021-Dec-08, Wed,07:59	Snow	Rear end	P.D. only	North	Wet	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Other	
Comments:	d1 charged				North	Wet	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	

Location ..... MAIN STREET SOUTH @ MILL STREET **Municipality.....** GEORGETOWN

Traffic Control.... Traffic signal **Total Collisions....** 7

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
19102791	2019-Mar-30, Sat,11:32	Rain	Approaching head-on	P.D. only	South	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
20401395	2020-Dec-24, Thu,11:00	Rain	Sideswipe	Non-reportable	North	Wet	Turning right		Other motor vehicle		
Comments:					North	Wet	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
20272531	2020-Sep-01, Tue,05:00	Clear	Turning movement	Non-fatal injury	West	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Improper turn	
Comments:					East	Dry	Going ahead	Moped	Other motor vehicle	Driving properly	
20153472	2020-May-20, Wed,01:20	Clear	Angle	P.D. only	North	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:					West	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly	
2300301055	2023-Sep-19, Tue,12:40	Clear	Sideswipe	P.D. only	North	Asphalt	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	Improper lane change	
Comments:					North	Asphalt	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	

2400017086	2024-Jan-17, Wed,13:07	Clear	SMV other	Non-fatal injury	East	Wet	Turning left	Automobile, station wagon	Pedestrian	Failed to yield right-of-way
Comments:						Wet				
2400024679	2024-Jan-24, Wed,17:15	Clear	Rear end	Non-fatal injury	North	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly
Comments:					North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way

Location ..... MILL STREET EAST @ BOWER STREET **Municipality.....** ACTON

Traffic Control.... No control **Total Collisions....** 3

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
2200084737	2022-Mar-21, Mon,07:45	Clear	Rear end	P.D. only	East	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					East	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
2300170992	2023-May-31, Wed,18:33	Clear	Rear end	P.D. only	East	Asphalt	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					East	Asphalt	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
2400120432	2024-Apr-18, Thu,15:45	Clear	Other	P.D. only	South	Dry	Reversing	Pick-up truck	Other motor vehicle	Driving properly	
Comments:					South	Dry	Stopped	Passenger van	Other motor vehicle	Driving properly	

Location ..... MILL STREET EAST @ FREDERICK STREET SOUTH **Municipality.....** ACTON

Traffic Control.... No control **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
21195171	2021-Jun-25, Fri,14:39	Clear	Rear end	Non-fatal injury	West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	d1 charged				West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	

Location ..... MILL STREET EAST @ WILLOW STREET SOUTH **Municipality.....** ACTON

Traffic Control.... Traffic signal **Total Collisions....** 3

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
19158064	2019-May-15, Wed,08:33	Clear	Rear end	P.D. only	West	Dry	Going ahead	Pick-up truck	Other motor vehicle	Following too close	
Comments:					West	Dry	Stopped	Pick-up truck	Other motor vehicle	Driving properly	
19217957	2019-Jul-01, Mon,20:35	Clear	Other	Non-reportable	South	Dry	Reversing	Pick-up truck	Other motor vehicle		
Comments:					South	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	

2300364729	2023-Nov-21, Tue,17:15	Rain	Rear end	Non-fatal injury	West	Oil treated gravel	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
Comments:					West	Oil treated gravel	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly

Collision Details Report

From: January 1, 2019 **To:** December 31, 2024

Location ..... MAIN STREET SOUTH @ MILL STREET EAST **Municipality.....** ACTON

Traffic Control.... Traffic signal **Total Collisions....** 5

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
2400078674	2024-Mar-20, Wed,09:13	Clear	Turning movement	P.D. only	South	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
2200301902	2022-Oct-08, Sat,13:18	Clear	SMV other	P.D. only	West	Dry	Turning right	Truck - tractor	Other	Improper turn	
Comments:	d1 charged					Dry					
2200286183	2022-Sep-23, Fri,16:33	Clear	Turning movement	P.D. only	East	Dry	Turning left	Passenger van	Other motor vehicle	Failed to yield right-of-way	
Comments:					West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Exceeding speed limit	
2106697	2021-Jan-07, Thu,12:30	Clear	Turning movement	P.D. only	West	Dry	Turning right	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					East	Dry	Turning left	Pick-up truck	Other motor vehicle	Driving properly	
20001692	2020-Jan-02, Thu,15:00	Clear	SMV other	Non-fatal injury	South	Dry	Turning left	Automobile, station wagon	Pedestrian	Improper turn	
Comments:						Dry					

Appendix C

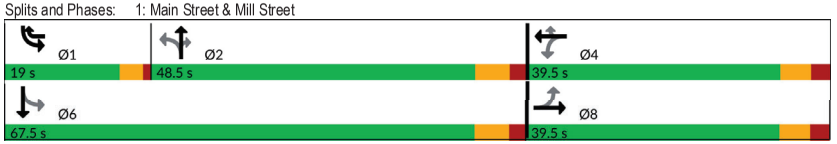
Base Year (2025) Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	129	20	110	95	165	14	209	110	221	306	21
Future Volume (vph)	25	129	20	110	95	165	14	209	110	221	306	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	0.99	1.00	
Frt		0.985				0.850			0.850		0.990	
Flt Protected		0.993			0.974			0.997		0.950		
Satd. Flow (prot)	0	1753	0	0	1782	1541	0	1722	1526	1706	1682	0
Flt Permitted		0.921			0.666			0.967		0.541		
Satd. Flow (perm)	0	1625	0	0	1214	1504	0	1669	1481	966	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				183			117		5	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Adj. Flow (vph)	28	143	22	122	106	183	16	232	122	246	340	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	193	0	0	228	183	0	248	122	246	363	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		22.3			22.3	35.0		47.1	47.1	63.8	61.3	
Actuated g/C Ratio		0.23			0.23	0.36		0.49	0.49	0.66	0.63	
v/c Ratio		0.51			0.82	0.28		0.31	0.16	0.34	0.34	
Control Delay (s/veh)		35.7			57.6	3.3		18.7	4.6	9.1	10.4	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		35.7			57.6	3.3		18.7	4.6	9.1	10.4	
LOS		D			E	A		B	A	A	B	
Approach Delay (s/veh)		35.7			33.4			14.1			9.9	
Approach LOS		D			C			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 96.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 20.1		Intersection LOS: C	
Intersection Capacity Utilization 91.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	193	228	183	248	122	246	363
v/c Ratio	0.51	0.82	0.28	0.31	0.16	0.34	0.34
Control Delay (s/veh)	35.7	57.6	3.3	18.7	4.6	9.1	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.7	57.6	3.3	18.7	4.6	9.1	10.4
Queue Length 50th (m)	30.4	40.3	0.0	26.6	0.5	16.2	28.1
Queue Length 95th (m)	50.2	66.5	10.3	56.8	11.5	35.6	57.9
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	561	416	733	813	781	753	1068
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.55	0.25	0.31	0.16	0.33	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	129	20	110	95	165	14	209	110	221	306	21
Future Volume (vph)	25	129	20	110	95	165	14	209	110	221	306	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.98			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1751			1776	1516		1721	1482	1701	1683	
Flt Permitted		0.92			0.67	1.00		0.97	1.00	0.54	1.00	
Satd. Flow (perm)		1625			1215	1516		1670	1482	969	1683	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	143	22	122	106	183	16	232	122	246	340	23
RTOR Reduction (vph)	0	5	0	0	0	121	0	0	60	0	2	0
Lane Group Flow (vph)	0	188	0	0	228	62	0	248	62	246	361	0
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		22.3			22.3	32.5		47.1	47.1	61.3	61.3	
Effective Green, g (s)		22.3			22.3	32.5		47.1	47.1	61.3	61.3	
Actuated g/C Ratio		0.23			0.23	0.34		0.49	0.49	0.63	0.63	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		375			280	510		814	722	692	1067	
v/s Ratio Prot						0.01				0.04	c0.21	
v/s Ratio Perm		0.12			c0.19	0.03		0.15	0.04	c0.19		
v/c Ratio		0.50			0.81	0.12		0.30	0.09	0.36	0.34	
Uniform Delay, d1		32.3			35.2	22.2		14.9	13.2	7.7	8.2	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.1			16.4	0.0		1.0	0.2	0.1	0.9	
Delay (s)		33.4			51.6	22.2		15.9	13.5	7.9	9.1	
Level of Service		C			D	C		B	B	A	A	
Approach Delay (s/veh)		33.4			38.5			15.1			8.6	
Approach LOS		C			D			B			A	

Intersection Summary					
HCM 2000 Control Delay (s/veh)	20.9	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.50				
Actuated Cycle Length (s)	96.6	Sum of lost time (s)		17.0	
Intersection Capacity Utilization	91.8%	ICU Level of Service		F	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	432	2	1	413	11	3	2	2	16	0	5
Future Volume (vph)	10	432	2	1	413	11	3	2	2	16	0	5
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			0.997			0.961			0.966	
Flt Protected		0.999						0.979			0.964	
Satd. Flow (prot)	0	1808	0	0	1823	0	0	1583	0	0	1630	0
Flt Permitted		0.999						0.979			0.964	
Satd. Flow (perm)	0	1808	0	0	1823	0	0	1583	0	0	1630	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	5		4	4		5						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	6%	0%	0%	5%	9%	33%	0%	0%	13%	0%	0%
Adj. Flow (vph)	11	485	2	1	464	12	3	2	2	18	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	0	477	0	0	7	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	40.4%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	432	2	1	413	11	3	2	2	16	0	5
Future Volume (Veh/h)	10	432	2	1	413	11	3	2	2	16	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	11	485	2	1	464	12	3	2	2	18	0	6
Pedestrians								4			5	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	481			491			990	995	490	988	990	475
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	481			491			990	995	490	988	990	475
tC, single (s)	4.2			4.1			7.4	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.8	4.0	3.3	3.6	4.0	3.3
p0 queue free %	99			100			98	99	100	91	100	99
cM capacity (veh/h)	1036			1079			192	242	580	209	243	591

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	498	477	7	24
Volume Left	11	1	3	18
Volume Right	2	12	2	6
cSH	1036	1079	256	250
Volume to Capacity	0.01	0.00	0.03	0.10
Queue Length 95th (m)	0.2	0.0	0.6	2.4
Control Delay (s/veh)	0.3	0.0	19.4	20.9
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.3	0.0	19.4	20.9
Approach LOS			C	C

Intersection Summary					
Average Delay	0.8				
Intersection Capacity Utilization	40.4%	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)	2	439	18	37	432	36	7	0	13	9	1	2
Future Volume (vph)	2	439	18	37	432	36	7	0	13	9	1	2
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			0.990			0.914			0.979	
Flt Protected					0.996			0.982			0.963	
Satd. Flow (prot)	0	1800	0	0	1807	0	0	1641	0	0	1682	0
Flt Permitted					0.996			0.982			0.963	
Satd. Flow (perm)	0	1800	0	0	1807	0	0	1641	0	0	1682	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	17		1	1		17	3					3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	50%	6%	6%	0%	5%	8%	14%	0%	0%	0%	0%	50%
Adj. Flow (vph)	2	482	20	41	475	40	8	0	14	10	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	504	0	0	556	0	0	22	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.5%	ICU Level of Service B	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	439	18	37	432	36	7	0	13	9	1	2
Future Volume (Veh/h)	2	439	18	37	432	36	7	0	13	9	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	482	20	41	475	40	8	0	14	10	1	2
Pedestrians		3						1			17	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	532			503			1080	1111	493	1104	1101	515
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	532			503			1080	1111	493	1104	1101	515
tC, single (s)	4.6			4.1			7.2	6.5	6.2	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.6	4.0	3.3	3.5	4.0	3.8
p0 queue free %	100			96			95	100	98	94	100	100
cM capacity (veh/h)	818			1071			175	199	580	174	201	466

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	504	556	22	13
Volume Left	2	41	8	10
Volume Right	20	40	14	2
cSH	818	1071	315	195
Volume to Capacity	0.00	0.04	0.07	0.07
Queue Length 95th (m)	0.1	0.9	1.7	1.6
Control Delay (s/veh)	0.1	1.1	17.3	24.7
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.1	1.1	17.3	24.7
Approach LOS			C	C

Intersection Summary					
Average Delay	1.2				
Intersection Capacity Utilization	63.5%	ICU Level of Service		B	
Analysis Period (min)	15				

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	16	15	4	41	9	2
Future Volume (vph)	16	15	4	41	9	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.936				0.975	
Flt Protected				0.995	0.961	
Satd. Flow (prot)	1645	0	0	1752	1652	0
Flt Permitted				0.995	0.961	
Satd. Flow (perm)	1645	0	0	1752	1652	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	276.6			95.4	99.6	
Travel Time (s)	20.7			7.2	7.5	
Confl. Peds. (#/hr)		13	13		2	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	6%	13%	0%	10%	11%	0%
Adj. Flow (vph)	23	21	6	59	13	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	0	65	16	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	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
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	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	16	15	4	41	9	2
Future Volume (Veh/h)	16	15	4	41	9	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	23	21	6	59	13	3
Pedestrians	2				13	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			57		120	47
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			57		120	47
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1541		839	1015

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	44	65	16
Volume Left	0	6	13
Volume Right	21	0	3
cSH	1700	1541	867
Volume to Capacity	0.03	0.00	0.02
Queue Length 95th (m)	0.0	0.1	0.4
Control Delay (s/veh)	0.0	0.7	9.2
Lane LOS		A	A
Approach Delay (s/veh)	0.0	0.7	9.2
Approach LOS			A

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	16.8%	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)	4	0	9	1	0	12	1	389	1	18	676	6
Future Volume (vph)	4	0	9	1	0	12	1	389	1	18	676	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.904			0.875						0.999	
Flt Protected		0.986			0.996		0.950			0.950		
Satd. Flow (prot)	0	1712	0	0	1674	0	1825	1763	0	1825	1809	0
Flt Permitted		0.986			0.996		0.950			0.950		
Satd. Flow (perm)	0	1712	0	0	1674	0	1825	1763	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							3		3	3		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	6%	17%
Adj. Flow (vph)	4	0	10	1	0	13	1	432	1	20	751	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	14	0	1	433	0	20	758	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	45.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	9	1	0	12	1	389	1	18	676	6
Future Volume (Veh/h)	4	0	9	1	0	12	1	389	1	18	676	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	10	1	0	13	1	432	1	20	751	7
Pedestrians		3			3							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	1245	1236	758	1239	1239	436	761			436		
vC1, stage 1 conf vol	798	798		438	438							
vC2, stage 2 conf vol	447	438		801	801							
vCu, unblocked vol	1227	1218	758	1221	1221	364	761			364		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	100	100	98	100			98		
cM capacity (veh/h)	330	346	409	327	347	640	858			1126		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	14	14	1	433	20	758
Volume Left	4	1	1	0	20	0
Volume Right	10	13	0	1	0	7
cSH	383	599	858	1700	1126	1700
Volume to Capacity	0.04	0.02	0.00	0.25	0.02	0.45
Queue Length 95th (m)	0.9	0.5	0.0	0.0	0.4	0.0
Control Delay (s/veh)	14.8	11.1	9.2	0.0	8.3	0.0
Lane LOS	B	B	A		A	
Approach Delay (s/veh)	14.8	11.1	0.0		0.2	
Approach LOS	B	B				

Intersection Summary					
Average Delay		0.4			
Intersection Capacity Utilization	45.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	39	8	12	28	8
Future Volume (vph)	11	39	8	12	28	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.895		0.919			
Flt Protected	0.989					0.963
Satd. Flow (prot)	1603	0	1678	0	0	1850
Flt Permitted	0.989					0.963
Satd. Flow (perm)	1603	0	1678	0	0	1850
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	1	1		23	23	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	5%	13%	0%	0%	0%
Adj. Flow (vph)	14	49	10	15	35	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	25	0	0	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	39	8	12	28	8
Future Volume (Veh/h)	11	39	8	12	28	8
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	14	49	10	15	35	10
Pedestrians	23		1			1
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	2		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	122	42			48	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	42			48	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	98	95			98	
cM capacity (veh/h)	816	997			1537	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	25	45
Volume Left	14	0	35
Volume Right	49	15	0
cSH	950	1700	1537
Volume to Capacity	0.07	0.01	0.02
Queue Length 95th (m)	1.6	0.0	0.5
Control Delay (s/veh)	9.1	0.0	5.8
Lane LOS	A		A
Approach Delay (s/veh)	9.1	0.0	5.8
Approach LOS	A		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	19.0%	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)	11	495	6	10	374	14	1	2	4	4	3	6
Future Volume (vph)	11	495	6	10	374	14	1	2	4	4	3	6
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			0.995			0.916			0.937	
Flt Protected		0.999			0.999			0.994			0.984	
Satd. Flow (prot)	0	1820	0	0	1799	0	0	1365	0	0	1641	0
Flt Permitted		0.999			0.999			0.994			0.984	
Satd. Flow (perm)	0	1820	0	0	1799	0	0	1365	0	0	1641	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	13	563	7	11	425	16	1	2	5	5	3	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	452	0	0	8	0	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	43.1%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	495	6	10	374	14	1	2	4	4	3	6
Future Volume (Veh/h)	11	495	6	10	374	14	1	2	4	4	3	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	12	562	7	11	425	16	1	2	5	5	3	7
Pedestrians					5			2			3	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	444			571			1055	1058	573	1059	1053	436
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	444			452			998	1001	453	1002	996	436
tC, single (s)	4.1			4.2			7.1	7.0	6.4	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.4	3.5	3.5	4.0	3.5
p0 queue free %	99			99			99	99	99	97	99	99
cM capacity (veh/h)	1124			944			190	174	494	189	213	588

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	581	452	8	15
Volume Left	12	11	1	5
Volume Right	7	16	5	7
cSH	1124	944	297	286
Volume to Capacity	0.01	0.01	0.03	0.05
Queue Length 95th (m)	0.2	0.3	0.6	1.3
Control Delay (s/veh)	0.3	0.4	17.4	18.3
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.3	0.4	17.4	18.3
Approach LOS			C	C

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	43.1%	ICU Level of Service	A	
Analysis Period (min)	15			

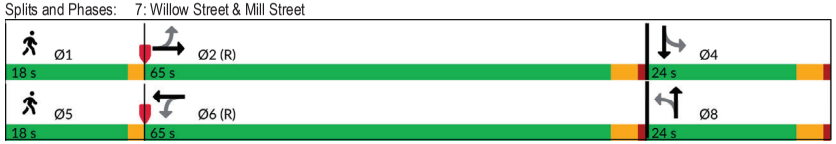
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	495	6	10	374	14	1	2	4	4	3	6
Future Volume (vph)	11	495	6	10	374	14	1	2	4	4	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			1.00	
Frt		0.998			0.995			0.916			0.937	
Flt Protected		0.999			0.999			0.994			0.984	
Satd. Flow (prot)	0	1820	0	0	1797	0	0	1336	0	0	1641	0
Flt Permitted		0.988			0.985			0.985			0.948	
Satd. Flow (perm)	0	1800	0	0	1772	0	0	1324	0	0	1573	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			5			7	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	13	563	7	11	425	16	1	2	5	5	3	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	452	0	0	8	0	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.57			0.45			0.03			0.05	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		17.7			15.3			26.4			26.9	
Queue Delay		20.6			0.0			0.0			0.0	
Total Delay (s/veh)		38.3			15.3			26.4			26.9	
LOS		D			B			C			C	
Approach Delay (s/veh)		38.3			15.3			26.4			26.9	
Approach LOS		D			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 25 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 28.2		Intersection LOS: C	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	583	452	8	15
v/c Ratio	0.57	0.45	0.03	0.05
Control Delay (s/veh)	17.7	15.3	26.4	26.9
Queue Delay	20.6	0.0	0.0	0.0
Total Delay (s/veh)	38.3	15.3	26.4	26.9
Queue Length 50th (m)	73.6	51.6	0.5	1.4
Queue Length 95th (m)	101.4	72.6	4.6	6.9
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1018	1003	245	292
Starvation Cap Reductn	437	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.45	0.03	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	495	6	10	374	14	1	2	4	4	3	6
Future Volume (vph)	11	495	6	10	374	14	1	2	4	4	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.92			0.94	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1820			1797			1335			1632	
Flt Permitted		0.99			0.99			0.98			0.95	
Satd. Flow (perm)		1801			1773			1323			1573	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	12	562	7	11	425	16	1	2	5	5	3	7
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	6	0
Lane Group Flow (vph)	0	583	0	0	451	0	0	4	0	0	9	0
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1018			1002			241			286	
v/s Ratio Prot												
v/s Ratio Perm		c0.32			0.25			0.00			c0.01	
v/c Ratio		0.57			0.45			0.02			0.03	
Uniform Delay, d1		14.9			13.6			35.9			36.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.3			1.5			0.1			0.2	
Delay (s)		17.3			15.0			36.0			36.2	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		17.3			15.0			36.0			36.2	
Approach LOS		B			B			D			D	

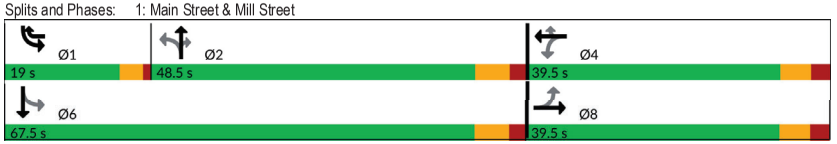
Intersection Summary					
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.37				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	54.0%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	109	13	136	100	307	11	471	91	252	265	19
Future Volume (vph)	20	109	13	136	100	307	11	471	91	252	265	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Frt		0.988				0.850			0.850		0.990	
Flt Protected		0.993			0.972			0.999		0.950		
Satd. Flow (prot)	0	1800	0	0	1806	1617	0	1796	1585	1789	1780	0
Flt Permitted		0.925			0.726			0.991		0.328		
Satd. Flow (perm)	0	1676	0	0	1346	1579	0	1781	1544	617	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				212			76		6	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Adj. Flow (vph)	21	112	13	140	103	316	11	486	94	260	273	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	146	0	0	243	316	0	497	94	260	293	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		22.1			22.1	34.9		47.1	47.1	63.8	61.3	
Actuated g/C Ratio		0.23			0.23	0.36		0.49	0.49	0.66	0.64	
v/c Ratio		0.38			0.79	0.45		0.57	0.12	0.49	0.26	
Control Delay (s/veh)		32.4			53.1	8.0		23.3	6.5	10.9	9.3	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		32.4			53.1	8.0		23.3	6.5	10.9	9.3	
LOS		C			D	A		C	A	B	A	
Approach Delay (s/veh)		32.4			27.6			20.6			10.1	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 96.5			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 20.5		Intersection LOS: C	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	146	243	316	497	94	260	293
v/c Ratio	0.38	0.79	0.45	0.57	0.12	0.49	0.26
Control Delay (s/veh)	32.4	53.1	8.0	23.3	6.5	10.9	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	53.1	8.0	23.3	6.5	10.9	9.3
Queue Length 50th (m)	22.1	42.6	12.1	62.6	1.7	17.1	20.9
Queue Length 95th (m)	38.3	68.7	26.6	123.6	12.1	37.0	44.1
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	579	462	780	868	791	591	1133
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.53	0.41	0.57	0.12	0.44	0.26

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	109	13	136	100	307	11	471	91	252	265	19
Future Volume (vph)	20	109	13	136	100	307	11	471	91	252	265	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1799			1802	1591		1796	1545	1788	1780	
Flt Permitted		0.93			0.73	1.00		0.99	1.00	0.33	1.00	
Satd. Flow (perm)		1676			1346	1591		1782	1545	617	1780	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	21	112	13	140	103	316	11	486	94	260	273	20
RTOR Reduction (vph)	0	4	0	0	0	141	0	0	39	0	2	0
Lane Group Flow (vph)	0	142	0	0	243	175	0	497	55	260	291	0
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		22.1			22.1	32.3		47.1	47.1	61.3	61.3	
Effective Green, g (s)		22.1			22.1	32.3		47.1	47.1	61.3	61.3	
Actuated g/C Ratio		0.23			0.23	0.34		0.49	0.49	0.64	0.64	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		384			308	533		870	754	516	1131	
v/s Ratio Prot						0.03				c0.05	0.16	
v/s Ratio Perm		0.08			c0.18	0.08		c0.28	0.04	0.27		
v/c Ratio		0.37			0.79	0.33		0.57	0.07	0.50	0.26	
Uniform Delay, d1		31.3			35.0	23.9		17.5	13.1	9.4	7.6	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			12.6	0.1		2.7	0.2	0.3	0.5	
Delay (s)		31.9			47.5	24.1		20.2	13.3	9.7	8.2	
Level of Service		C			D	C		C	B	A	A	
Approach Delay (s/veh)		31.9			34.3			19.1			8.9	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	502	1	6	552	3	2	2	6	15	0	3
Future Volume (vph)	5	502	1	6	552	3	2	2	6	15	0	3
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			0.919			0.979	
Flt Protected					0.999			0.990			0.960	
Satd. Flow (prot)	0	1862	0	0	1862	0	0	1589	0	0	1806	0
Flt Permitted					0.999			0.990			0.960	
Satd. Flow (perm)	0	1862	0	0	1862	0	0	1589	0	0	1806	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	14		5	5		14			1	1		
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 (%)	20%	3%	0%	0%	3%	0%	50%	0%	0%	0%	0%	0%
Adj. Flow (vph)	5	534	1	6	587	3	2	2	6	16	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	540	0	0	596	0	0	10	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	43.3%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	502	1	6	552	3	2	2	6	15	0	3
Future Volume (Veh/h)	5	502	1	6	552	3	2	2	6	15	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	534	1	6	587	3	2	2	6	16	0	3
Pedestrians					1			5			14	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	604			540			1153	1166	541	1167	1165	603
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	604			540			1153	1166	541	1167	1165	603
tC, single (s)	4.3			4.1			7.6	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			4.0	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	99	99	90	100	99
cM capacity (veh/h)	880			1034			136	190	542	163	190	496

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	540	596	10	19
Volume Left	5	6	2	16
Volume Right	1	3	6	3
cSH	880	1034	276	182
Volume to Capacity	0.01	0.01	0.04	0.10
Queue Length 95th (m)	0.1	0.1	0.9	2.6
Control Delay (s/veh)	0.2	0.2	18.6	27.1
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.2	0.2	18.6	27.1
Approach LOS			C	D

Intersection Summary					
Average Delay	0.8				
Intersection Capacity Utilization	43.3%	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)	1	502	13	50	569	55	8	0	23	14	0	2
Future Volume (vph)	1	502	13	50	569	55	8	0	23	14	0	2
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			0.989			0.900			0.985	
Flt Protected					0.996			0.987			0.957	
Satd. Flow (prot)	0	1861	0	0	1846	0	0	1707	0	0	1811	0
Flt Permitted					0.996			0.987			0.957	
Satd. Flow (perm)	0	1861	0	0	1846	0	0	1707	0	0	1811	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	26		4	4		26	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	558	14	56	632	61	9	0	26	16	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	573	0	0	749	0	0	35	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	502	13	50	569	55	8	0	23	14	0	2
Future Volume (Veh/h)	1	502	13	50	569	55	8	0	23	14	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	558	14	56	632	61	9	0	26	16	0	2
Pedestrians		2						4			26	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	719			576			1350	1402	569	1394	1379	691
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	719			576			1350	1402	569	1394	1379	691
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			92	100	95	85	100	100
cM capacity (veh/h)	869			1003			119	129	523	104	134	436

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	573	749	35	18
Volume Left	1	56	9	16
Volume Right	14	61	26	2
cSH	869	1003	280	114
Volume to Capacity	0.00	0.06	0.13	0.16
Queue Length 95th (m)	0.0	1.3	3.2	4.1
Control Delay (s/veh)	0.0	1.4	19.7	42.5
Lane LOS	A	A	C	E
Approach Delay (s/veh)	0.0	1.4	19.7	42.5
Approach LOS			C	E

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	77.5%	ICU Level of Service		D
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	22	17	1	56	6	1
Future Volume (vph)	22	17	1	56	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.941				0.985	
Flt Protected				0.999	0.957	
Satd. Flow (prot)	1808	0	0	1846	1811	0
Flt Permitted				0.999	0.957	
Satd. Flow (perm)	1808	0	0	1846	1811	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	276.6			95.4	99.6	
Travel Time (s)	20.7			7.2	7.5	
Confl. Peds. (#/hr)		8	8			
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%
Adj. Flow (vph)	30	23	1	76	8	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	77	9	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	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
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	15.7%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	22	17	1	56	6	1
Future Volume (Veh/h)	22	17	1	56	6	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	30	23	1	76	8	1
Pedestrians					8	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			61		128	50
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			61		128	50
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)			1543		864	1017

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	53	77	9
Volume Left	0	1	8
Volume Right	23	0	1
cSH	1700	1543	879
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s/veh)	0.0	0.1	9.1
Lane LOS		A	A
Approach Delay (s/veh)	0.0	0.1	9.1
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	15.7%	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)	6	1	14	1	2	41	9	744	2	15	498	11
Future Volume (vph)	6	1	14	1	2	41	9	744	2	15	498	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.908			0.874						0.997	
Flt Protected		0.987			0.999		0.950			0.950		
Satd. Flow (prot)	0	1722	0	0	1677	0	1825	1830	0	1825	1809	0
Flt Permitted		0.987			0.999		0.950			0.950		
Satd. Flow (perm)	0	1722	0	0	1677	0	1825	1830	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							16		11	11		16
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%	0%	0%	0%	0%	0%	0%	5%	0%	0%	6%	0%
Adj. Flow (vph)	6	1	15	1	2	44	10	791	2	16	530	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	47	0	10	793	0	16	542	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.7%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	14	1	2	41	9	744	2	15	498	11
Future Volume (Veh/h)	6	1	14	1	2	41	9	744	2	15	498	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	6	1	15	1	2	44	10	791	2	16	530	12
Pedestrians		16			11							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		2			1							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.81	0.81		0.81	0.81	0.81				0.81		
vC, conflicting volume	1440	1408	552	1401	1413	803	558			804		
vC1, stage 1 conf vol	584	584		823	823							
vC2, stage 2 conf vol	856	824		578	590							
vCu, unblocked vol	1426	1386	552	1377	1392	636	558			638		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	97	100	99	89	99			98		
cM capacity (veh/h)	250	294	529	292	300	384	1007			763		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	22	47	10	793	16	542
Volume Left	6	1	10	0	16	0
Volume Right	15	44	0	2	0	12
cSH	394	377	1007	1700	763	1700
Volume to Capacity	0.06	0.12	0.01	0.47	0.02	0.32
Queue Length 95th (m)	1.3	3.2	0.2	0.0	0.5	0.0
Control Delay (s/veh)	14.7	15.9	8.6	0.0	9.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s/veh)	14.7	15.9	0.1		0.3	
Approach LOS	B	C				

Intersection Summary					
Average Delay	0.9				
Intersection Capacity Utilization	50.7%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	64	14	9	31	14
Future Volume (vph)	17	64	14	9	31	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.894		0.949			
Flt Protected	0.989					0.967
Satd. Flow (prot)	1672	0	1747	0	0	1739
Flt Permitted	0.989					0.967
Satd. Flow (perm)	1672	0	1747	0	0	1739
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	8	3		49	49	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	2%	7%	0%	10%	0%
Adj. Flow (vph)	22	81	18	11	39	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	0	29	0	0	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	64	14	9	31	14
Future Volume (Veh/h)	17	64	14	9	31	14
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	22	81	18	11	39	18
Pedestrians	49		8			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	5		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	177	76			78	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	177	76			78	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	97	91			97	
cM capacity (veh/h)	751	936			1401	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	103	29	57
Volume Left	22	0	39
Volume Right	81	11	0
cSH	889	1700	1401
Volume to Capacity	0.12	0.02	0.03
Queue Length 95th (m)	3.0	0.0	0.7
Control Delay (s/veh)	9.6	0.0	5.3
Lane LOS	A		A
Approach Delay (s/veh)	9.6	0.0	5.3
Approach LOS	A		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	24.0%	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)	5	472	7	11	491	11	5	3	10	13	0	16
Future Volume (vph)	5	472	7	11	491	11	5	3	10	13	0	16
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			0.997			0.925			0.926	
Flt Protected					0.999			0.986			0.978	
Satd. Flow (prot)	0	1808	0	0	1843	0	0	1661	0	0	1740	0
Flt Permitted					0.999			0.986			0.978	
Satd. Flow (perm)	0	1808	0	0	1843	0	0	1661	0	0	1740	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	5	492	7	11	511	11	5	3	10	14	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	504	0	0	533	0	0	18	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	50.0%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	472	7	11	491	11	5	3	10	13	0	16
Future Volume (Veh/h)	5	472	7	11	491	11	5	3	10	13	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	492	7	11	511	11	5	3	10	14	0	17
Pedestrians					33			19			35	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					3			2			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	557			518			1080	1104	548	1124	1102	552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	557			415			1036	1062	447	1084	1060	552
tC, single (s)	4.1			4.1			7.1	6.8	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.3	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	98	98	91	100	97
cM capacity (veh/h)	989			1026			172	166	529	152	191	519

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	504	533	18	31
Volume Left	5	11	5	14
Volume Right	7	11	10	17
cSH	989	1026	273	249
Volume to Capacity	0.01	0.01	0.07	0.12
Queue Length 95th (m)	0.1	0.2	1.6	3.2
Control Delay (s/veh)	0.1	0.3	19.1	21.5
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.1	0.3	19.1	21.5
Approach LOS			C	C

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	50.0%	ICU Level of Service	A	
Analysis Period (min)	15			

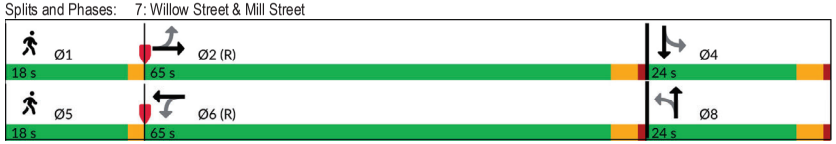
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	472	7	11	491	11	5	3	10	13	0	16
Future Volume (vph)	5	472	7	11	491	11	5	3	10	13	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.94			0.96	
Frt		0.998			0.997			0.925			0.926	
Flt Protected					0.999			0.986			0.978	
Satd. Flow (prot)	0	1806	0	0	1838	0	0	1554	0	0	1740	0
Flt Permitted		0.996			0.989			0.952			0.905	
Satd. Flow (perm)	0	1798	0	0	1819	0	0	1500	0	0	1540	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			10			36	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	5	492	7	11	511	11	5	3	10	14	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	504	0	0	533	0	0	18	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.50			0.52			0.06			0.10	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		16.1			16.5			24.6			11.3	
Queue Delay		8.4			0.0			0.0			0.0	
Total Delay (s/veh)		24.5			16.5			24.6			11.3	
LOS		C			B			C			B	
Approach Delay (s/veh)		24.5			16.5			24.6			11.3	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 22.5 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay (s/veh): 20.2		Intersection LOS: C	
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	504	533	18	31
v/c Ratio	0.50	0.52	0.06	0.10
Control Delay (s/veh)	16.1	16.5	24.6	11.3
Queue Delay	8.4	0.0	0.0	0.0
Total Delay (s/veh)	24.5	16.5	24.6	11.3
Queue Length 50th (m)	59.8	64.1	1.4	0.0
Queue Length 95th (m)	86.2	92.2	7.4	7.1
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1017	1029	281	310
Starvation Cap Reductn	468	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.92	0.52	0.06	0.10

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	472	7	11	491	11	5	3	10	13	0	16
Future Volume (vph)	5	472	7	11	491	11	5	3	10	13	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.94			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.96	
Frt		1.00			1.00			0.93			0.93	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1805			1838			1554			1664	
Flt Permitted		1.00			0.99			0.95			0.90	
Satd. Flow (perm)		1798			1819			1500			1540	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	5	492	7	11	511	11	5	3	10	14	0	17
RTOR Reduction (vph)	0	0	0	0	1	0	0	8	0	0	25	0
Lane Group Flow (vph)	0	504	0	0	532	0	0	10	0	0	6	0
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1016			1028			273			280	
v/s Ratio Prot												
v/s Ratio Perm		0.28			c0.29			c0.01			0.00	
v/c Ratio		0.50			0.52			0.04			0.02	
Uniform Delay, d1		14.0			14.3			36.0			35.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.7			1.9			0.2			0.1	
Delay (s)		15.8			16.1			36.3			36.0	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		15.8			16.1			36.3			36.0	
Approach LOS		B			B			D			D	

Intersection Summary					
HCM 2000 Control Delay (s/veh)	16.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.33				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	55.9%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Appendix D

Other Area Background Developments Site Traffic Contributions

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253 (Congregate Care Facility) or 254 (Assisted Living) than the rates identified for Affordable Housing.

The addition of less than new 12 peak hour vehicle trips is not expected to result in any significant transportation impacts on the adjacent road network. 12 peak hour vehicle trips equate to an average of 1 vehicle trip every 10 minutes during the peak hour.

TABLE 3.1: SITE TRIP GENERATION

ITE Land Use Code	AM Peak Hour			PM Peak Hour		
	In	Out	Sum	In	Out	Sum
223 - Affordable Housing, Income Limits (Dwelling Units) – Average Rate	8	4	**12**	3	4	**7**
253 - Congregate Care Facility (Dwelling Units)						
Average Rates	1	0	**1**	1	1	**2**
Fitted Curve Equation	2	1	**3**	4	3	**7**
254 - Assisted Living						
GFA/1,000 sq.ft. – Average Rate	3	1	**4**	1	3	**4**
Number of Beds – Average Rate	1	1	**2**	1	2	**3**

3.4 Vehicle Site Circulation

On-site vehicle circulation for the site's parking area has been assessed using AutoTURN swept path analysis software. The design vehicle is a Transportation Association of Canada (TAC) Passenger Car (P). Waste collection and fire access is expected to be accommodated by the municipal streets of Maria Street and York Street.

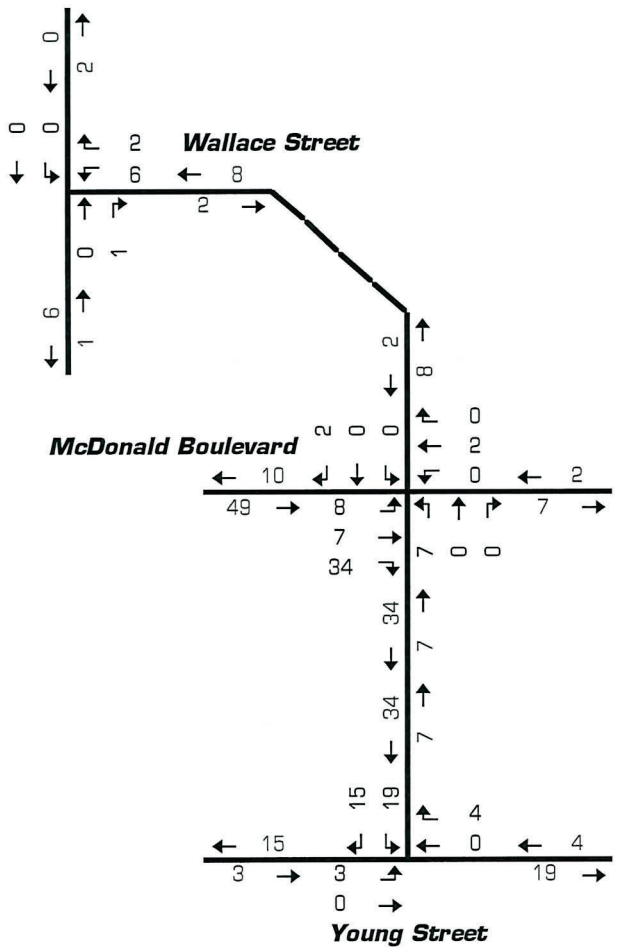
The five standard parking spaces measure 5.50 x 2.75 metres and are located to the rear of the building and accessed by the private driveway to Maria Street. The space closest to York Street is located immediately adjacent to the building. For this space to function an additional 0.30 m of space is needed between the space and the building for door swing.

The accessible parking space measures 5.70 x 4.25 metres and is located at the end of the site driveway to York Street.

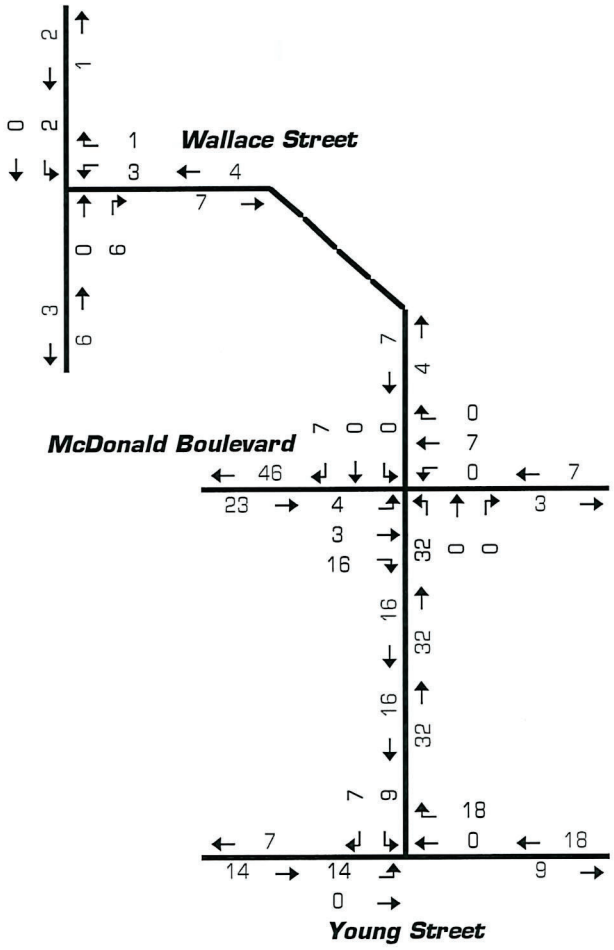
Figure 3.2 illustrates the swept paths for a passenger car turning into and out of the site driveway from York Street. A right-turn radius of at least 2 metres is suggested on the driveway approach.

SEE SIGNED ORIGINAL

Project North



AM Peak Hour



PM Peak Hour

125 McDonald Boulevard
Traffic Impact Study Update

Paradigm
www.ptsl.com

Figure 4.2
Site Generated AM & PM Peak Hour Traffic Volumes

Appendix E

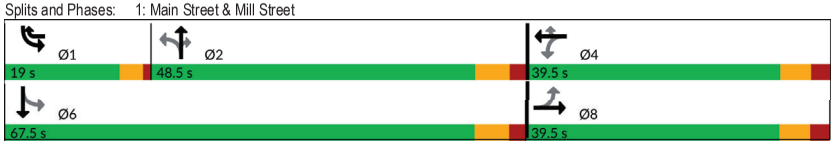
Future Background Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	139	21	125	108	175	15	222	118	235	325	22
Future Volume (vph)	27	139	21	125	108	175	15	222	118	235	325	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	0.99	1.00	
Frt		0.985				0.850			0.850		0.991	
Flt Protected		0.993			0.974			0.997		0.950		
Satd. Flow (prot)	0	1753	0	0	1782	1541	0	1722	1526	1706	1684	0
Flt Permitted		0.884			0.654			0.965		0.519		
Satd. Flow (perm)	0	1560	0	0	1192	1504	0	1666	1481	926	1684	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				194			118		5	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Adj. Flow (vph)	30	154	23	139	120	194	17	247	131	261	361	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	207	0	0	259	194	0	264	131	261	385	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		24.8			24.8	38.2		46.3	46.3	63.8	61.2	
Actuated g/C Ratio		0.25			0.25	0.39		0.47	0.47	0.64	0.62	
v/c Ratio		0.53			0.87	0.28		0.34	0.17	0.38	0.37	
Control Delay (s/veh)		35.7			63.2	3.1		20.6	5.4	10.3	11.6	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		35.7			63.2	3.1		20.6	5.4	10.3	11.6	
LOS		D			E	A		C	A	B	B	
Approach Delay (s/veh)		35.7			37.5			15.6			11.1	
Approach LOS		D			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 99.1			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 22.1		Intersection LOS: C	
Intersection Capacity Utilization 93.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	207	259	194	264	131	261	385
v/c Ratio	0.53	0.87	0.28	0.34	0.17	0.38	0.37
Control Delay (s/veh)	35.7	63.2	3.1	20.6	5.4	10.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.7	63.2	3.1	20.6	5.4	10.3	11.6
Queue Length 50th (m)	33.2	47.6	0.0	31.6	1.3	19.7	34.0
Queue Length 95th (m)	54.4	#79.0	10.5	60.8	13.1	37.9	62.0
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	525	398	759	778	755	714	1042
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.65	0.26	0.34	0.17	0.37	0.37

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	139	21	125	108	175	15	222	118	235	325	22
Future Volume (vph)	27	139	21	125	108	175	15	222	118	235	325	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1752			1776	1516		1721	1482	1701	1683	
Flt Permitted		0.88			0.65	1.00		0.96	1.00	0.52	1.00	
Satd. Flow (perm)		1560			1194	1516		1666	1482	929	1683	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	154	23	139	120	194	17	247	131	261	361	24
RTOR Reduction (vph)	0	4	0	0	0	124	0	0	63	0	2	0
Lane Group Flow (vph)	0	203	0	0	259	70	0	264	68	261	383	0
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		24.8			24.8	35.7		46.4	46.4	61.3	61.3	
Effective Green, g (s)		24.8			24.8	35.7		46.4	46.4	61.3	61.3	
Actuated g/C Ratio		0.25			0.25	0.36		0.47	0.47	0.62	0.62	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		390			298	546		780	693	659	1041	
v/s Ratio Prot						0.01				c0.04	0.23	
v/s Ratio Perm		0.13			c0.22	0.03		0.16	0.05	c0.20		
v/c Ratio		0.52			0.87	0.13		0.34	0.10	0.40	0.37	
Uniform Delay, d1		32.0			35.6	21.3		16.7	14.7	8.8	9.3	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.2			22.5	0.0		1.2	0.3	0.1	1.0	
Delay (s)		33.2			58.1	21.3		17.8	15.0	8.9	10.3	
Level of Service		C			E	C		B	B	A	B	
Approach Delay (s/veh)		33.2			42.3			16.9			9.8	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	99.1	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	461	2	1	453	12	3	2	2	17	0	5
Future Volume (vph)	11	461	2	1	453	12	3	2	2	17	0	5
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			0.997			0.961			0.968	
Flt Protected		0.999						0.979			0.963	
Satd. Flow (prot)	0	1808	0	0	1823	0	0	1583	0	0	1630	0
Flt Permitted		0.999						0.979			0.963	
Satd. Flow (perm)	0	1808	0	0	1823	0	0	1583	0	0	1630	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	5		4	4		5						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	6%	0%	0%	5%	9%	33%	0%	0%	13%	0%	0%
Adj. Flow (vph)	12	518	2	1	509	13	3	2	2	19	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	532	0	0	523	0	0	7	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.7%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	461	2	1	453	12	3	2	2	17	0	5
Future Volume (Veh/h)	11	461	2	1	453	12	3	2	2	17	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	12	518	2	1	509	13	3	2	2	19	0	6
Pedestrians								4			5	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	527			524			1071	1076	523	1069	1071	521
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	527			524			1071	1076	523	1069	1071	521
tC, single (s)	4.2			4.1			7.4	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.8	4.0	3.3	3.6	4.0	3.3
p0 queue free %	99			100			98	99	100	90	100	99
cM capacity (veh/h)	996			1049			168	216	556	184	218	557

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	532	523	7	25
Volume Left	12	1	3	19
Volume Right	2	13	2	6
cSH	996	1049	228	219
Volume to Capacity	0.01	0.00	0.03	0.11
Queue Length 95th (m)	0.3	0.0	0.7	2.9
Control Delay (s/veh)	0.3	0.0	21.3	23.5
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.3	0.0	21.3	23.5
Approach LOS			C	C

Intersection Summary					
Average Delay		0.9			
Intersection Capacity Utilization		42.7%	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)	2	469	19	39	473	38	7	0	14	10	1	2
Future Volume (vph)	2	469	19	39	473	38	7	0	14	10	1	2
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			0.991			0.912			0.981	
Flt Protected					0.996			0.983			0.962	
Satd. Flow (prot)	0	1801	0	0	1808	0	0	1642	0	0	1692	0
Flt Permitted					0.996			0.983			0.962	
Satd. Flow (perm)	0	1801	0	0	1808	0	0	1642	0	0	1692	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	17		1	1		17	3					3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	50%	6%	6%	0%	5%	8%	14%	0%	0%	0%	0%	50%
Adj. Flow (vph)	2	515	21	43	520	42	8	0	15	11	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	538	0	0	605	0	0	23	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	469	19	39	473	38	7	0	14	10	1	2
Future Volume (Veh/h)	2	469	19	39	473	38	7	0	14	10	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	515	21	43	520	42	8	0	15	11	1	2
Pedestrians		3						1			17	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	579			537			1163	1196	527	1189	1185	561
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	579			537			1163	1196	527	1189	1185	561
tC, single (s)	4.6			4.1			7.2	6.5	6.2	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.6	4.0	3.3	3.5	4.0	3.8
p0 queue free %	100			96			95	100	97	93	99	100
cM capacity (veh/h)	783			1040			153	176	555	152	179	438

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	538	605	23	14
Volume Left	2	43	8	11
Volume Right	21	42	15	2
cSH	783	1040	290	170
Volume to Capacity	0.00	0.04	0.08	0.08
Queue Length 95th (m)	0.1	1.0	1.9	2.0
Control Delay (s/veh)	0.1	1.1	18.5	28.1
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.1	1.1	18.5	28.1
Approach LOS			C	D

Intersection Summary					
Average Delay	1.3				
Intersection Capacity Utilization	67.4%	ICU Level of Service		C	
Analysis Period (min)	15				

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	17	16	4	44	10	2
Future Volume (vph)	17	16	4	44	10	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.934				0.976	
Flt Protected				0.996	0.960	
Satd. Flow (prot)	1640	0	0	1753	1650	0
Flt Permitted				0.996	0.960	
Satd. Flow (perm)	1640	0	0	1753	1650	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	276.6			95.4	99.6	
Travel Time (s)	20.7			7.2	7.5	
Confl. Peds. (#/hr)		13	13		2	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	6%	13%	0%	10%	11%	0%
Adj. Flow (vph)	24	23	6	63	14	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	69	17	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	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
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	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	17	16	4	44	10	2
Future Volume (Veh/h)	17	16	4	44	10	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	24	23	6	63	14	3
Pedestrians	2				13	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			60		126	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			60		126	49
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1537		833	1013

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	47	69	17
Volume Left	0	6	14
Volume Right	23	0	3
cSH	1700	1537	860
Volume to Capacity	0.03	0.00	0.02
Queue Length 95th (m)	0.0	0.1	0.5
Control Delay (s/veh)	0.0	0.7	9.3
Lane LOS		A	A
Approach Delay (s/veh)	0.0	0.7	9.3
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	16.8%	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)	4	0	10	1	0	13	1	413	1	19	717	6
Future Volume (vph)	4	0	10	1	0	13	1	413	1	19	717	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.901			0.874						0.999	
Flt Protected		0.987			0.997		0.950			0.950		
Satd. Flow (prot)	0	1708	0	0	1674	0	1825	1763	0	1825	1809	0
Flt Permitted		0.987			0.997		0.950			0.950		
Satd. Flow (perm)	0	1708	0	0	1674	0	1825	1763	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							3		3	3		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	6%	17%
Adj. Flow (vph)	4	0	11	1	0	14	1	459	1	21	797	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	15	0	1	460	0	21	804	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	48.1%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	10	1	0	13	1	413	1	19	717	6
Future Volume (Veh/h)	4	0	10	1	0	13	1	413	1	19	717	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	11	1	0	14	1	459	1	21	797	7
Pedestrians		3			3							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	1321	1311	804	1315	1314	463	807			463		
vC1, stage 1 conf vol	846	846		465	465							
vC2, stage 2 conf vol	475	465		850	849							
vCu, unblocked vol	1306	1295	804	1299	1298	378	807			378		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	97	100	100	98	100			98		
cM capacity (veh/h)	309	327	385	305	328	621	824			1098		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	15	15	1	460	21	804
Volume Left	4	1	1	0	21	0
Volume Right	11	14	0	1	0	7
cSH	361	581	824	1700	1098	1700
Volume to Capacity	0.04	0.03	0.00	0.27	0.02	0.47
Queue Length 95th (m)	1.0	0.6	0.0	0.0	0.4	0.0
Control Delay (s/veh)	15.4	11.4	9.4	0.0	8.3	0.0
Lane LOS	C	B	A		A	
Approach Delay (s/veh)	15.4	11.4	0.0		0.2	
Approach LOS	C	B				

Intersection Summary					
Average Delay	0.4				
Intersection Capacity Utilization	48.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	41	8	13	30	8
Future Volume (vph)	12	41	8	13	30	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.896		0.917			
Flt Protected	0.989					0.962
Satd. Flow (prot)	1604	0	1678	0	0	1848
Flt Permitted	0.989					0.962
Satd. Flow (perm)	1604	0	1678	0	0	1848
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	1	1		23	23	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	5%	13%	0%	0%	0%
Adj. Flow (vph)	15	51	10	16	38	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	66	0	26	0	0	48
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	41	8	13	30	8
Future Volume (Veh/h)	12	41	8	13	30	8
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	15	51	10	16	38	10
Pedestrians	23		1			1
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	2		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	128	42			49	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	128	42			49	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	98	95			98	
cM capacity (veh/h)	807	996			1535	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	66	26	48
Volume Left	15	0	38
Volume Right	51	16	0
cSH	946	1700	1535
Volume to Capacity	0.07	0.02	0.02
Queue Length 95th (m)	1.7	0.0	0.6
Control Delay (s/veh)	9.1	0.0	5.9
Lane LOS	A		A
Approach Delay (s/veh)	9.1	0.0	5.9
Approach LOS	A		

Intersection Summary				
Average Delay		6.3		
Intersection Capacity Utilization		19.1%	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	528	6	11	412	15	1	2	4	4	3	6
Future Volume (vph)	12	528	6	11	412	15	1	2	4	4	3	6
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			0.995			0.916			0.937	
Flt Protected		0.999			0.999			0.994			0.984	
Satd. Flow (prot)	0	1821	0	0	1799	0	0	1365	0	0	1641	0
Flt Permitted		0.999			0.999			0.994			0.984	
Satd. Flow (perm)	0	1821	0	0	1799	0	0	1365	0	0	1641	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	14	600	7	13	468	17	1	2	5	5	3	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	621	0	0	498	0	0	8	0	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.3%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	528	6	11	412	15	1	2	4	4	3	6
Future Volume (Veh/h)	12	528	6	11	412	15	1	2	4	4	3	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	14	600	7	12	468	17	1	2	5	5	3	7
Pedestrians					5			2			3	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	488			609			1143	1146	611	1146	1141	480
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	488			477			1089	1093	478	1093	1087	480
tC, single (s)	4.1			4.2			7.1	7.0	6.4	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.4	3.5	3.5	4.0	3.5
p0 queue free %	99			99			99	99	99	97	98	99
cM capacity (veh/h)	1082			908			161	149	469	160	184	555

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	621	497	8	15
Volume Left	14	12	1	5
Volume Right	7	17	5	7
cSH	1082	908	264	249
Volume to Capacity	0.01	0.01	0.03	0.06
Queue Length 95th (m)	0.3	0.3	0.7	1.5
Control Delay (s/veh)	0.4	0.4	19.1	20.4
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.4	0.4	19.1	20.4
Approach LOS			C	C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		



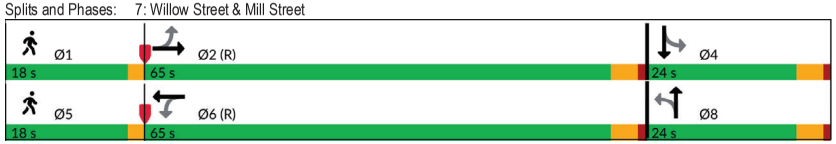
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	528	6	11	412	15	1	2	4	4	3	6
Future Volume (vph)	12	528	6	11	412	15	1	2	4	4	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			1.00	
Frt		0.998			0.995			0.916			0.937	
Flt Protected		0.999			0.999			0.994			0.984	
Satd. Flow (prot)	0	1820	0	0	1797	0	0	1336	0	0	1641	0
Flt Permitted		0.987			0.982			0.985			0.948	
Satd. Flow (perm)	0	1798	0	0	1767	0	0	1324	0	0	1573	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			5			7	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	14	600	7	13	468	17	1	2	5	5	3	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	621	0	0	498	0	0	8	0	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.61			0.50			0.03			0.05	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		18.6			16.1			26.4			26.9	
Queue Delay		31.3			0.0			0.0			0.0	
Total Delay (s/veh)		49.9			16.1			26.4			26.9	
LOS		D			B			C			C	
Approach Delay (s/veh)		49.9			16.1			26.4			26.9	
Approach LOS		D			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 25 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 34.7		Intersection LOS: C	
Intersection Capacity Utilization 56.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	621	498	8	15
v/c Ratio	0.61	0.50	0.03	0.05
Control Delay (s/veh)	18.6	16.1	26.4	26.9
Queue Delay	31.3	0.0	0.0	0.0
Total Delay (s/veh)	49.9	16.1	26.4	26.9
Queue Length 50th (m)	81.0	59.0	0.5	1.4
Queue Length 95th (m)	111.4	82.5	4.6	6.9
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1017	1000	245	292
Starvation Cap Reductn	421	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.04	0.50	0.03	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	528	6	11	412	15	1	2	4	4	3	6
Future Volume (vph)	12	528	6	11	412	15	1	2	4	4	3	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.92			0.94	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1821			1797			1335			1632	
Flt Permitted		0.99			0.98			0.98			0.95	
Satd. Flow (perm)		1799			1767			1323			1573	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	14	600	7	12	468	17	1	2	5	5	3	7
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	6	0
Lane Group Flow (vph)	0	621	0	0	497	0	0	4	0	0	9	0
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1017			999			241			286	
v/s Ratio Prot												
v/s Ratio Perm		c0.35			0.28			0.00			c0.01	
v/c Ratio		0.61			0.50			0.02			0.03	
Uniform Delay, d1		15.4			14.1			35.9			36.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.7			1.8			0.1			0.2	
Delay (s)		18.2			15.8			36.0			36.2	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		18.2			15.8			36.0			36.2	
Approach LOS		B			B			D			D	

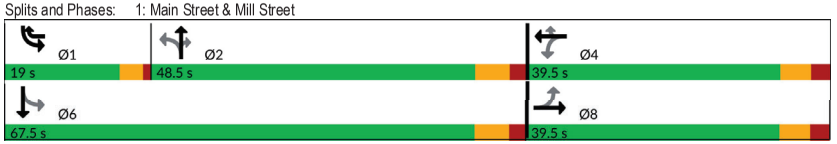
Intersection Summary					
HCM 2000 Control Delay (s/veh)	17.5	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.39				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	11.0		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	124	14	148	109	326	12	500	103	267	281	20
Future Volume (vph)	21	124	14	148	109	326	12	500	103	267	281	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Frt		0.988				0.850			0.850		0.990	
Flt Protected		0.993			0.972			0.999		0.950		
Satd. Flow (prot)	0	1800	0	0	1806	1617	0	1796	1585	1789	1780	0
Flt Permitted		0.928			0.700			0.990		0.292		
Satd. Flow (perm)	0	1682	0	0	1298	1579	0	1780	1544	549	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				191			76		6	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Adj. Flow (vph)	22	128	14	153	112	336	12	515	106	275	290	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	265	336	0	527	106	275	311	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		24.1			24.1	37.4		46.4	46.4	63.8	61.3	
Actuated g/C Ratio		0.24			0.24	0.38		0.47	0.47	0.65	0.62	
v/c Ratio		0.40			0.84	0.47		0.63	0.14	0.56	0.28	
Control Delay (s/veh)		32.4			57.4	9.5		26.1	7.7	12.9	10.2	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		32.4			57.4	9.5		26.1	7.7	12.9	10.2	
LOS		C			E	A		C	A	B	B	
Approach Delay (s/veh)		32.4			30.6			23.0			11.5	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 98.4			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 22.7		Intersection LOS: C	
Intersection Capacity Utilization 97.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	164	265	336	527	106	275	311
v/c Ratio	0.40	0.84	0.47	0.63	0.14	0.56	0.28
Control Delay (s/veh)	32.4	57.4	9.5	26.1	7.7	12.9	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	57.4	9.5	26.1	7.7	12.9	10.2
Queue Length 50th (m)	25.2	47.8	17.1	73.4	3.0	20.0	24.6
Queue Length 95th (m)	42.6	76.7	33.7	134.2	14.5	39.6	47.2
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	569	437	784	840	768	545	1110
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.61	0.43	0.63	0.14	0.50	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	124	14	148	109	326	12	500	103	267	281	20
Future Volume (vph)	21	124	14	148	109	326	12	500	103	267	281	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1801			1802	1591		1796	1545	1788	1780	
Flt Permitted		0.93			0.70	1.00		0.99	1.00	0.29	1.00	
Satd. Flow (perm)		1682			1298	1591		1780	1545	550	1780	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	22	128	14	153	112	336	12	515	106	275	290	21
RTOR Reduction (vph)	0	4	0	0	0	123	0	0	40	0	2	0
Lane Group Flow (vph)	0	160	0	0	265	213	0	527	66	275	309	0
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		24.1			24.1	34.9		46.5	46.5	61.3	61.3	
Effective Green, g (s)		24.1			24.1	34.9		46.5	46.5	61.3	61.3	
Actuated g/C Ratio		0.24			0.24	0.35		0.47	0.47	0.62	0.62	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		411			317	564		841	730	478	1108	
v/s Ratio Prot						0.04				c0.06	0.17	
v/s Ratio Perm		0.10			c0.20	0.09		c0.30	0.04	0.29		
v/c Ratio		0.39			0.84	0.38		0.63	0.09	0.58	0.28	
Uniform Delay, d1		31.0			35.3	23.7		19.4	14.3	10.9	8.5	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			17.1	0.2		3.5	0.2	1.0	0.6	
Delay (s)		31.6			52.4	23.8		23.0	14.5	12.0	9.1	
Level of Service		C			D	C		C	B	B	A	
Approach Delay (s/veh)		31.6			36.4			21.6			10.4	
Approach LOS		C			D			C			B	

Intersection Summary				
HCM 2000 Control Delay (s/veh)	23.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	97.5%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	547	1	6	593	3	2	2	6	16	0	3
Future Volume (vph)	5	547	1	6	593	3	2	2	6	16	0	3
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			0.919			0.980	
Flt Protected								0.990			0.959	
Satd. Flow (prot)	0	1863	0	0	1864	0	0	1589	0	0	1805	0
Flt Permitted								0.990			0.959	
Satd. Flow (perm)	0	1863	0	0	1864	0	0	1589	0	0	1805	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	14		5	5		14			1	1		
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 (%)	20%	3%	0%	0%	3%	0%	50%	0%	0%	0%	0%	0%
Adj. Flow (vph)	5	582	1	6	631	3	2	2	6	17	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	588	0	0	640	0	0	10	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			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	547	1	6	593	3	2	2	6	16	0	3
Future Volume (Veh/h)	5	547	1	6	593	3	2	2	6	16	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	5	582	1	6	631	3	2	2	6	17	0	3
Pedestrians					1			5			14	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	648			588			1245	1258	589	1259	1257	647
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	648			588			1245	1258	589	1259	1257	647
tC, single (s)	4.3			4.1			7.6	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			4.0	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	88	100	99
cM capacity (veh/h)	846			992			117	167	509	140	168	468

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	588	640	10	20
Volume Left	5	6	2	17
Volume Right	1	3	6	3
cSH	846	992	245	157
Volume to Capacity	0.01	0.01	0.04	0.13
Queue Length 95th (m)	0.1	0.1	1.0	3.3
Control Delay (s/veh)	0.2	0.2	20.3	31.3
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.2	0.2	20.3	31.3
Approach LOS			C	D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	45.5%	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)	1	547	14	53	611	58	8	0	24	15	0	2
Future Volume (vph)	1	547	14	53	611	58	8	0	24	15	0	2
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			0.989			0.899			0.986	
Flt Protected					0.996			0.988			0.957	
Satd. Flow (prot)	0	1861	0	0	1846	0	0	1706	0	0	1813	0
Flt Permitted					0.996			0.988			0.957	
Satd. Flow (perm)	0	1861	0	0	1846	0	0	1706	0	0	1813	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	26		4	4		26	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	608	16	59	679	64	9	0	27	17	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	625	0	0	802	0	0	36	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	547	14	53	611	58	8	0	24	15	0	2
Future Volume (Veh/h)	1	547	14	53	611	58	8	0	24	15	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	608	16	59	679	64	9	0	27	17	0	2
Pedestrians		2						4			26	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	769			628			1455	1509	620	1500	1485	739
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	769			628			1455	1509	620	1500	1485	739
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			91	100	94	80	100	100
cM capacity (veh/h)	833			960			100	111	490	87	115	409

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	625	802	36	19
Volume Left	1	59	9	17
Volume Right	16	64	27	2
cSH	833	960	249	95
Volume to Capacity	0.00	0.06	0.14	0.20
Queue Length 95th (m)	0.0	1.5	3.8	5.3
Control Delay (s/veh)	0.0	1.6	21.9	52.2
Lane LOS	A	A	C	F
Approach Delay (s/veh)	0.0	1.6	21.9	52.2
Approach LOS			C	F

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	82.5%	ICU Level of Service		E
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	23	18	1	59	6	1
Future Volume (vph)	23	18	1	59	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.941				0.985	
Flt Protected				0.999	0.957	
Satd. Flow (prot)	1808	0	0	1846	1811	0
Flt Permitted				0.999	0.957	
Satd. Flow (perm)	1808	0	0	1846	1811	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	276.6			95.4	99.6	
Travel Time (s)	20.7			7.2	7.5	
Confl. Peds. (#/hr)		8	8			
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%
Adj. Flow (vph)	31	24	1	80	8	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	0	81	9	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	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
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	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	23	18	1	59	6	1
Future Volume (Veh/h)	23	18	1	59	6	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	31	24	1	80	8	1
Pedestrians					8	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			63		133	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			63		133	51
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)			1540		858	1015

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	55	81	9
Volume Left	0	1	8
Volume Right	24	0	1
cSH	1700	1540	873
Volume to Capacity	0.03	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.2
Control Delay (s/veh)	0.0	0.1	9.2
Lane LOS		A	A
Approach Delay (s/veh)	0.0	0.1	9.2
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	15.7%	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)	6	1	15	1	2	44	10	790	2	16	528	12
Future Volume (vph)	6	1	15	1	2	44	10	790	2	16	528	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.906			0.873						0.997	
Flt Protected		0.987			0.999		0.950			0.950		
Satd. Flow (prot)	0	1718	0	0	1675	0	1825	1830	0	1825	1809	0
Flt Permitted		0.987			0.999		0.950			0.950		
Satd. Flow (perm)	0	1718	0	0	1675	0	1825	1830	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							16		11	11		16
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%	0%	0%	0%	0%	0%	0%	5%	0%	0%	6%	0%
Adj. Flow (vph)	6	1	16	1	2	47	11	840	2	17	562	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	50	0	11	842	0	17	575	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	53.2%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	15	1	2	44	10	790	2	16	528	12
Future Volume (Veh/h)	6	1	15	1	2	44	10	790	2	16	528	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	6	1	16	1	2	47	11	840	2	17	562	13
Pedestrians		16			11							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		2			1							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.78	0.78		0.78	0.78	0.78				0.78		
vC, conflicting volume	1529	1494	585	1487	1499	852	591			853		
vC1, stage 1 conf vol	619	619		874	874							
vC2, stage 2 conf vol	910	875		613	625							
vCu, unblocked vol	1536	1492	585	1483	1499	672	591			673		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	97	100	99	87	99			98		
cM capacity (veh/h)	223	272	507	268	278	356	979			718		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	23	50	11	842	17	575
Volume Left	6	1	11	0	17	0
Volume Right	16	47	0	2	0	13
cSH	370	349	979	1700	718	1700
Volume to Capacity	0.06	0.14	0.01	0.50	0.02	0.34
Queue Length 95th (m)	1.5	3.8	0.3	0.0	0.6	0.0
Control Delay (s/veh)	15.4	17.0	8.7	0.0	10.1	0.0
Lane LOS	C	C	A		B	
Approach Delay (s/veh)	15.4	17.0	0.1		0.3	
Approach LOS	C	C				

Intersection Summary					
Average Delay	1.0				
Intersection Capacity Utilization	53.2%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	68	15	10	33	15
Future Volume (vph)	18	68	15	10	33	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.893		0.945			
Flt Protected	0.990					0.967
Satd. Flow (prot)	1672	0	1743	0	0	1738
Flt Permitted	0.990					0.967
Satd. Flow (perm)	1672	0	1743	0	0	1738
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	8	3		49	49	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	2%	7%	0%	10%	0%
Adj. Flow (vph)	23	86	19	13	42	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	32	0	0	61
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	18	68	15	10	33	15
Future Volume (Veh/h)	18	68	15	10	33	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	23	86	19	13	42	19
Pedestrians	49		8			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	5		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	186	78			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	186	78			81	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	97	91			97	
cM capacity (veh/h)	741	933			1397	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	109	32	61
Volume Left	23	0	42
Volume Right	86	13	0
cSH	885	1700	1397
Volume to Capacity	0.12	0.02	0.03
Queue Length 95th (m)	3.2	0.0	0.7
Control Delay (s/veh)	9.6	0.0	5.3
Lane LOS	A		A
Approach Delay (s/veh)	9.6	0.0	5.3
Approach LOS	A		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	24.2%	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)	5	515	7	12	528	12	5	3	11	14	0	17
Future Volume (vph)	5	515	7	12	528	12	5	3	11	14	0	17
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			0.997			0.922			0.926	
Flt Protected					0.999			0.987			0.978	
Satd. Flow (prot)	0	1808	0	0	1843	0	0	1662	0	0	1740	0
Flt Permitted					0.999			0.987			0.978	
Satd. Flow (perm)	0	1808	0	0	1843	0	0	1662	0	0	1740	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	5	536	7	13	550	13	5	3	11	15	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	548	0	0	576	0	0	19	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	52.8%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	515	7	12	528	12	5	3	11	14	0	17
Future Volume (Veh/h)	5	515	7	12	528	12	5	3	11	14	0	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	536	7	12	550	12	5	3	11	15	0	18
Pedestrians					33			19			35	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					3			2			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	597			562			1167	1190	592	1210	1187	591
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	597			441			1124	1150	475	1173	1147	591
tC, single (s)	4.1			4.1			7.1	6.8	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.3	3.3	3.5	4.0	3.3
p0 queue free %	99			99			97	98	98	88	100	96
cM capacity (veh/h)	956			982			146	144	500	129	166	493

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	548	574	19	33
Volume Left	5	12	5	15
Volume Right	7	12	11	18
cSH	956	982	247	216
Volume to Capacity	0.01	0.01	0.08	0.15
Queue Length 95th (m)	0.1	0.3	1.9	4.0
Control Delay (s/veh)	0.1	0.3	20.8	24.7
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.1	0.3	20.8	24.7
Approach LOS			C	C

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	52.8%	ICU Level of Service	A	
Analysis Period (min)	15			



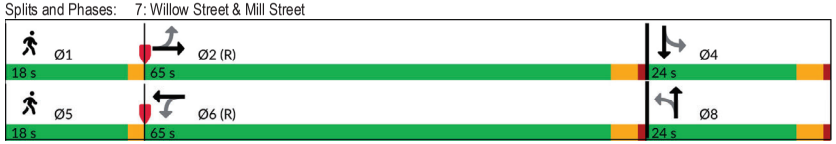
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	515	7	12	528	12	5	3	11	14	0	17
Future Volume (vph)	5	515	7	12	528	12	5	3	11	14	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.93			0.96	
Frt		0.998			0.997			0.922			0.926	
Flt Protected					0.999			0.987			0.978	
Satd. Flow (prot)	0	1806	0	0	1838	0	0	1550	0	0	1740	0
Flt Permitted		0.996			0.986			0.954			0.902	
Satd. Flow (perm)	0	1798	0	0	1813	0	0	1498	0	0	1535	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			11			36	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	5	536	7	13	550	13	5	3	11	15	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	548	0	0	576	0	0	19	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.54			0.56			0.07			0.11	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		17.0			17.4			23.8			12.0	
Queue Delay		13.8			0.0			0.0			0.0	
Total Delay (s/veh)		30.8			17.4			23.8			12.0	
LOS		C			B			C			B	
Approach Delay (s/veh)		30.8			17.4			23.8			12.0	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 22.5 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 23.6		Intersection LOS: C	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	548	576	19	33
v/c Ratio	0.54	0.56	0.07	0.11
Control Delay (s/veh)	17.0	17.4	23.8	12.0
Queue Delay	13.8	0.0	0.0	0.0
Total Delay (s/veh)	30.8	17.4	23.8	12.0
Queue Length 50th (m)	67.3	71.9	1.4	0.0
Queue Length 95th (m)	96.5	102.9	7.8	7.6
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1017	1025	281	309
Starvation Cap Reductn	451	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.97	0.56	0.07	0.11

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	515	7	12	528	12	5	3	11	14	0	17
Future Volume (vph)	5	515	7	12	528	12	5	3	11	14	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.93			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.96	
Frt		1.00			1.00			0.92			0.93	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1805			1837			1550			1665	
Flt Permitted		1.00			0.99			0.95			0.90	
Satd. Flow (perm)		1799			1813			1498			1535	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	5	536	7	12	550	12	5	3	11	15	0	18
RTOR Reduction (vph)	0	0	0	0	1	0	0	9	0	0	27	0
Lane Group Flow (vph)	0	548	0	0	575	0	0	10	0	0	6	0
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1017			1025			273			279	
v/s Ratio Prot												
v/s Ratio Perm		0.30			c0.32			c0.01			0.00	
v/c Ratio		0.54			0.56			0.04			0.02	
Uniform Delay, d1		14.5			14.8			36.0			35.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.0			2.2			0.3			0.1	
Delay (s)		16.6			17.0			36.3			36.1	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		16.6			17.0			36.3			36.1	
Approach LOS		B			B			D			D	

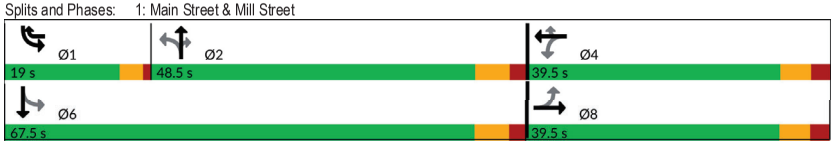
Intersection Summary					
HCM 2000 Control Delay (s/veh)	17.7	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.36				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	58.6%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	153	23	137	118	193	16	245	130	259	359	25
Future Volume (vph)	29	153	23	137	118	193	16	245	130	259	359	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	0.99	1.00	
Frt		0.985				0.850			0.850		0.990	
Flt Protected		0.993			0.974			0.997		0.950		
Satd. Flow (prot)	0	1755	0	0	1782	1541	0	1722	1526	1706	1682	0
Flt Permitted		0.868			0.636			0.962		0.483		
Satd. Flow (perm)	0	1533	0	0	1160	1504	0	1660	1481	863	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				214			118		5	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Adj. Flow (vph)	32	170	26	152	131	214	18	272	144	288	399	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	0	283	214	0	290	144	288	427	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		27.7			27.7	42.2		45.2	45.2	63.7	61.2	
Actuated g/C Ratio		0.27			0.27	0.41		0.44	0.44	0.62	0.60	
v/c Ratio		0.54			0.90	0.28		0.39	0.20	0.45	0.42	
Control Delay (s/veh)		35.7			66.9	3.0		23.2	6.6	12.0	13.3	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		35.7			66.9	3.0		23.2	6.6	12.0	13.3	
LOS		D			E	A		C	A	B	B	
Approach Delay (s/veh)		35.7			39.4			17.7			12.8	
Approach LOS		D			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 102			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 23.7		Intersection LOS: C	
Intersection Capacity Utilization 95.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	228	283	214	290	144	288	427
v/c Ratio	0.54	0.90	0.28	0.39	0.20	0.45	0.42
Control Delay (s/veh)	35.7	66.9	3.0	23.2	6.6	12.0	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.7	66.9	3.0	23.2	6.6	12.0	13.3
Queue Length 50th (m)	37.4	53.7	0.0	40.3	3.1	25.6	44.8
Queue Length 95th (m)	60.3	#96.2	11.1	67.2	15.5	42.1	70.5
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	501	376	792	736	722	663	1011
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.75	0.27	0.39	0.20	0.43	0.42

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	153	23	137	118	193	16	245	130	259	359	25
Future Volume (vph)	29	153	23	137	118	193	16	245	130	259	359	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.98			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1753			1776	1515		1720	1481	1702	1682	
Flt Permitted		0.87			0.64	1.00		0.96	1.00	0.48	1.00	
Satd. Flow (perm)		1532			1161	1515		1660	1481	865	1682	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	170	26	152	131	214	18	272	144	288	399	28
RTOR Reduction (vph)	0	4	0	0	0	131	0	0	66	0	2	0
Lane Group Flow (vph)	0	224	0	0	283	83	0	290	78	288	425	0
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		27.7			27.7	39.7		45.2	45.2	61.2	61.2	
Effective Green, g (s)		27.7			27.7	39.7		45.2	45.2	61.2	61.2	
Actuated g/C Ratio		0.27			0.27	0.39		0.44	0.44	0.60	0.60	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		416			315	590		736	656	618	1010	
v/s Ratio Prot						0.02				c0.05	0.25	
v/s Ratio Perm		0.15			c0.24	0.04		0.17	0.05	c0.22		
v/c Ratio		0.54			0.90	0.14		0.39	0.12	0.47	0.42	
Uniform Delay, d1		31.6			35.7	20.1		19.1	16.7	10.3	10.9	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.3			26.4	0.0		1.6	0.4	0.2	1.3	
Delay (s)		33.0			62.1	20.1		20.7	17.0	10.5	12.2	
Level of Service		C			E	C		C	B	B	B	
Approach Delay (s/veh)		33.0			44.1			19.5			11.5	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	509	2	1	499	13	4	2	2	19	0	6
Future Volume (vph)	12	509	2	1	499	13	4	2	2	19	0	6
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					0.996			0.966			0.966	
Flt Protected		0.999						0.976			0.964	
Satd. Flow (prot)	0	1809	0	0	1821	0	0	1555	0	0	1630	0
Flt Permitted		0.999						0.976			0.964	
Satd. Flow (perm)	0	1809	0	0	1821	0	0	1555	0	0	1630	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	5		4	4		5						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	6%	0%	0%	5%	9%	33%	0%	0%	13%	0%	0%
Adj. Flow (vph)	13	572	2	1	561	15	4	2	2	21	0	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	577	0	0	8	0	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.0%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	509	2	1	499	13	4	2	2	19	0	6
Future Volume (Veh/h)	12	509	2	1	499	13	4	2	2	19	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	13	572	2	1	561	15	4	2	2	21	0	7
Pedestrians								4			5	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	581			578			1181	1186	577	1178	1180	574
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	581			578			1181	1186	577	1178	1180	574
tC, single (s)	4.2			4.1			7.4	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.8	4.0	3.3	3.6	4.0	3.3
p0 queue free %	99			100			97	99	100	86	100	99
cM capacity (veh/h)	950			1002			140	186	518	154	188	520

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	587	577	8	28
Volume Left	13	1	4	21
Volume Right	2	15	2	7
cSH	950	1002	185	187
Volume to Capacity	0.01	0.00	0.04	0.15
Queue Length 95th (m)	0.3	0.0	1.0	3.9
Control Delay (s/veh)	0.4	0.0	25.3	27.6
Lane LOS	A	A	D	D
Approach Delay (s/veh)	0.4	0.0	25.3	27.6
Approach LOS			D	D

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	46.0%	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)	2	517	21	43	521	42	8	0	15	11	1	2
Future Volume (vph)	2	517	21	43	521	42	8	0	15	11	1	2
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			0.991			0.914			0.982	
Flt Protected					0.996			0.982			0.962	
Satd. Flow (prot)	0	1801	0	0	1808	0	0	1642	0	0	1701	0
Flt Permitted					0.996			0.982			0.962	
Satd. Flow (perm)	0	1801	0	0	1808	0	0	1642	0	0	1701	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	17		1	1		17	3					3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	50%	6%	6%	0%	5%	8%	14%	0%	0%	0%	0%	50%
Adj. Flow (vph)	2	568	23	47	573	46	9	0	16	12	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	666	0	0	25	0	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	73.5%	ICU Level of Service D		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	517	21	43	521	42	8	0	15	11	1	2
Future Volume (Veh/h)	2	517	21	43	521	42	8	0	15	11	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	568	23	47	573	46	9	0	16	12	1	2
Pedestrians		3						1			17	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	636			592			1280	1315	581	1307	1303	616
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	636			592			1280	1315	581	1307	1303	616
tC, single (s)	4.6			4.1			7.2	6.5	6.2	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.6	4.0	3.3	3.5	4.0	3.8
p0 queue free %	100			95			93	100	97	90	99	100
cM capacity (veh/h)	742			993			126	149	517	125	151	405

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	593	666	25	15
Volume Left	2	47	9	12
Volume Right	23	46	16	2
cSH	742	993	244	139
Volume to Capacity	0.00	0.05	0.10	0.11
Queue Length 95th (m)	0.1	1.1	2.6	2.7
Control Delay (s/veh)	0.1	1.2	21.4	33.9
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.1	1.2	21.4	33.9
Approach LOS			C	D

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	73.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	19	18	5	48	11	2
Future Volume (vph)	19	18	5	48	11	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.934				0.979	
Flt Protected				0.995	0.960	
Satd. Flow (prot)	1640	0	0	1752	1652	0
Flt Permitted				0.995	0.960	
Satd. Flow (perm)	1640	0	0	1752	1652	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	276.6			95.4	99.6	
Travel Time (s)	20.7			7.2	7.5	
Confl. Peds. (#/hr)		13	13		2	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	6%	13%	0%	10%	11%	0%
Adj. Flow (vph)	27	26	7	69	16	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	0	76	19	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	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
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	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	19	18	5	48	11	2
Future Volume (Veh/h)	19	18	5	48	11	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	27	26	7	69	16	3
Pedestrians	2				13	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			66		138	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			66		138	53
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1529		818	1007

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	53	76	19
Volume Left	0	7	16
Volume Right	26	0	3
cSH	1700	1529	843
Volume to Capacity	0.03	0.00	0.02
Queue Length 95th (m)	0.0	0.1	0.5
Control Delay (s/veh)	0.0	0.7	9.4
Lane LOS		A	A
Approach Delay (s/veh)	0.0	0.7	9.4
Approach LOS			A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	16.8%	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)	5	0	11	1	0	14	1	456	1	21	792	7
Future Volume (vph)	5	0	11	1	0	14	1	456	1	21	792	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.910			0.873						0.999	
Flt Protected		0.984			0.997		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1672	0	1825	1763	0	1825	1809	0
Flt Permitted		0.984			0.997		0.950			0.950		
Satd. Flow (perm)	0	1720	0	0	1672	0	1825	1763	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							3		3	3		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	6%	17%
Adj. Flow (vph)	6	0	12	1	0	16	1	507	1	23	880	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	17	0	1	508	0	23	888	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	52.1%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	11	1	0	14	1	456	1	21	792	7
Future Volume (Veh/h)	5	0	11	1	0	14	1	456	1	21	792	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	12	1	0	16	1	507	1	23	880	8
Pedestrians		3			3							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.90	0.90		0.90	0.90	0.90				0.90		
vC, conflicting volume	1458	1446	887	1451	1450	511	891			511		
vC1, stage 1 conf vol	933	933		513	513							
vC2, stage 2 conf vol	525	513		938	937							
vCu, unblocked vol	1454	1440	887	1445	1444	406	891			407		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	97	100	100	97	100			98		
cM capacity (veh/h)	274	295	345	270	296	585	767			1049		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	18	17	1	508	23	888
Volume Left	6	1	1	0	23	0
Volume Right	12	16	0	1	0	8
cSH	317	548	767	1700	1049	1700
Volume to Capacity	0.06	0.03	0.00	0.30	0.02	0.52
Queue Length 95th (m)	1.4	0.7	0.0	0.0	0.5	0.0
Control Delay (s/veh)	17.0	11.8	9.7	0.0	8.5	0.0
Lane LOS	C	B	A		A	
Approach Delay (s/veh)	17.0	11.8	0.0		0.2	
Approach LOS	C	B				

Intersection Summary					
Average Delay	0.5				
Intersection Capacity Utilization	52.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	46	9	14	33	9
Future Volume (vph)	13	46	9	14	33	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.894		0.916			
Flt Protected	0.989					0.962
Satd. Flow (prot)	1601	0	1677	0	0	1848
Flt Permitted	0.989					0.962
Satd. Flow (perm)	1601	0	1677	0	0	1848
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	1	1		23	23	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	5%	13%	0%	0%	0%
Adj. Flow (vph)	16	58	11	18	41	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	0	29	0	0	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	46	9	14	33	9
Future Volume (Veh/h)	13	46	9	14	33	9
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	16	58	11	18	41	11
Pedestrians	23		1			1
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	2		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	137	44			52	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	137	44			52	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	98	94			97	
cM capacity (veh/h)	796	994			1532	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	74	29	52
Volume Left	16	0	41
Volume Right	58	18	0
cSH	943	1700	1532
Volume to Capacity	0.08	0.02	0.03
Queue Length 95th (m)	1.9	0.0	0.6
Control Delay (s/veh)	9.1	0.0	5.9
Lane LOS	A		A
Approach Delay (s/veh)	9.1	0.0	5.9
Approach LOS	A		

Intersection Summary				
Average Delay		6.3		
Intersection Capacity Utilization		19.6%	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	583	7	12	453	16	1	2	5	5	4	7
Future Volume (vph)	13	583	7	12	453	16	1	2	5	5	4	7
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			0.996			0.910			0.943	
Flt Protected		0.999			0.999			0.994			0.984	
Satd. Flow (prot)	0	1820	0	0	1801	0	0	1360	0	0	1664	0
Flt Permitted		0.999			0.999			0.994			0.984	
Satd. Flow (perm)	0	1820	0	0	1801	0	0	1360	0	0	1664	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	15	663	8	14	515	18	1	2	6	6	5	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	686	0	0	547	0	0	9	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.7%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	583	7	12	453	16	1	2	5	5	4	7
Future Volume (Veh/h)	13	583	7	12	453	16	1	2	5	5	4	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	15	662	8	14	515	18	1	2	6	6	5	8
Pedestrians					5			2			3	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.85			0.85	0.85	0.85	0.85	0.85	
vC, conflicting volume	536			672			1261	1262	673	1263	1257	527
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	536			522			1217	1219	523	1220	1213	527
tC, single (s)	4.1			4.2			7.1	7.0	6.4	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.4	3.5	3.5	4.0	3.5
p0 queue free %	99			98			99	98	99	95	97	98
cM capacity (veh/h)	1039			849			126	120	430	126	150	521

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	685	547	9	19
Volume Left	15	14	1	6
Volume Right	8	18	6	8
cSH	1039	849	233	197
Volume to Capacity	0.01	0.02	0.04	0.10
Queue Length 95th (m)	0.3	0.4	0.9	2.4
Control Delay (s/veh)	0.4	0.5	21.1	25.2
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.4	0.5	21.1	25.2
Approach LOS			C	D

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	48.7%	ICU Level of Service	A	
Analysis Period (min)	15			



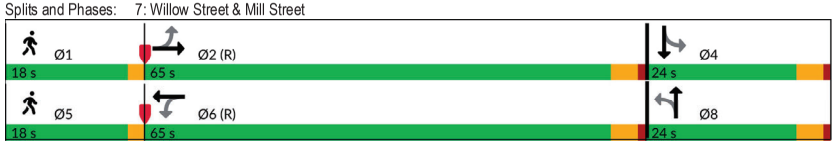
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	583	7	12	453	16	1	2	5	5	4	7
Future Volume (vph)	13	583	7	12	453	16	1	2	5	5	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			1.00	
Frt		0.998			0.996			0.910			0.943	
Flt Protected		0.999			0.999			0.994			0.984	
Satd. Flow (prot)	0	1820	0	0	1799	0	0	1329	0	0	1664	0
Flt Permitted		0.986			0.980			0.986			0.947	
Satd. Flow (perm)	0	1796	0	0	1765	0	0	1318	0	0	1594	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			6			8	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	15	663	8	14	515	18	1	2	6	6	5	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	686	0	0	547	0	0	9	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.68			0.55			0.04			0.06	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		20.5			17.1			25.4			26.8	
Queue Delay		52.0			0.0			0.0			0.0	
Total Delay (s/veh)		72.6			17.1			25.4			26.8	
LOS		E			B			C			C	
Approach Delay (s/veh)		72.6			17.1			25.4			26.8	
Approach LOS		E			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 25 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 47.5		Intersection LOS: D	
Intersection Capacity Utilization 59.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	686	547	9	19
v/c Ratio	0.68	0.55	0.04	0.06
Control Delay (s/veh)	20.5	17.1	25.4	26.8
Queue Delay	52.0	0.0	0.0	0.0
Total Delay (s/veh)	72.6	17.1	25.4	26.8
Queue Length 50th (m)	94.7	67.3	0.5	1.9
Queue Length 95th (m)	130.1	93.7	4.8	8.2
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1015	999	245	297
Starvation Cap Reductn	395	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.11	0.55	0.04	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	583	7	12	453	16	1	2	5	5	4	7
Future Volume (vph)	13	583	7	12	453	16	1	2	5	5	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.91			0.94	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1820			1798			1329			1657	
Flt Permitted		0.99			0.98			0.99			0.95	
Satd. Flow (perm)		1796			1764			1318			1594	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	15	662	8	14	515	18	1	2	6	6	5	8
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	7	0
Lane Group Flow (vph)	0	686	0	0	546	0	0	4	0	0	12	0
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1015			997			240			290	
v/s Ratio Prot												
v/s Ratio Perm		c0.38			0.31			0.00			c0.01	
v/c Ratio		0.68			0.55			0.02			0.04	
Uniform Delay, d1		16.3			14.6			35.9			36.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.6			2.2			0.1			0.3	
Delay (s)		19.9			16.8			36.0			36.3	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		19.9			16.8			36.0			36.3	
Approach LOS		B			B			D			D	

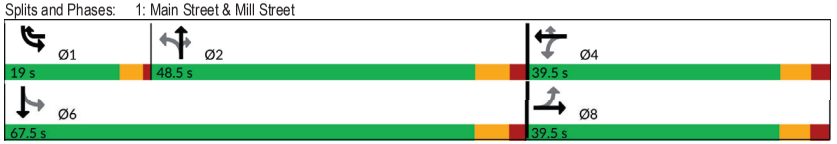
Intersection Summary					
HCM 2000 Control Delay (s/veh)	18.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.43				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	59.7%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	136	15	163	120	360	13	552	113	295	310	22
Future Volume (vph)	23	136	15	163	120	360	13	552	113	295	310	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97		1.00	
Frt		0.989				0.850			0.850		0.990	
Flt Protected		0.993			0.972			0.999		0.950		
Satd. Flow (prot)	0	1802	0	0	1805	1617	0	1796	1585	1789	1780	0
Flt Permitted		0.899			0.684			0.989		0.225		
Satd. Flow (perm)	0	1631	0	0	1268	1579	0	1778	1544	424	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				159			76		6	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Adj. Flow (vph)	24	140	15	168	124	371	13	569	116	304	320	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	179	0	0	292	371	0	582	116	304	343	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		26.7			26.7	41.5		44.9	44.9	63.7	61.2	
Actuated g/C Ratio		0.26			0.26	0.41		0.44	0.44	0.63	0.61	
v/c Ratio		0.41			0.87	0.50		0.74	0.16	0.70	0.32	
Control Delay (s/veh)		32.5			61.0	12.2		32.2	9.0	18.9	11.5	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		32.5			61.0	12.2		32.2	9.0	18.9	11.5	
LOS		C			E	B		C	A	B	B	
Approach Delay (s/veh)		32.5			33.7			28.4			14.9	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 101			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 26.3		Intersection LOS: C	
Intersection Capacity Utilization 101.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	179	292	371	582	116	304	343
v/c Ratio	0.41	0.87	0.50	0.74	0.16	0.70	0.32
Control Delay (s/veh)	32.5	61.0	12.2	32.2	9.0	18.9	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.5	61.0	12.2	32.2	9.0	18.9	11.5
Queue Length 50th (m)	28.2	54.5	25.5	95.9	4.6	25.5	31.2
Queue Length 95th (m)	47.0	#93.3	45.6	#166.2	16.4	43.9	52.8
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	537	415	787	791	729	470	1081
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.70	0.47	0.74	0.16	0.65	0.32

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	136	15	163	120	360	13	552	113	295	310	22
Future Volume (vph)	23	136	15	163	120	360	13	552	113	295	310	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802			1802	1591		1796	1545	1789	1780	
Flt Permitted		0.90			0.68	1.00		0.99	1.00	0.22	1.00	
Satd. Flow (perm)		1631			1268	1591		1778	1545	423	1780	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	24	140	15	168	124	371	13	569	116	304	320	23
RTOR Reduction (vph)	0	3	0	0	0	98	0	0	42	0	2	0
Lane Group Flow (vph)	0	176	0	0	292	273	0	582	74	304	341	0
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		26.7			26.7	39.0		45.0	45.0	61.3	61.3	
Effective Green, g (s)		26.7			26.7	39.0		45.0	45.0	61.3	61.3	
Actuated g/C Ratio		0.26			0.26	0.39		0.45	0.45	0.61	0.61	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		431			335	614		792	688	423	1080	
v/s Ratio Prot						0.05				c0.09	0.19	
v/s Ratio Perm		0.11			c0.23	0.12		0.33	0.05	c0.35		
v/c Ratio		0.41			0.87	0.45		0.73	0.11	0.72	0.32	
Uniform Delay, d1		30.6			35.5	23.0		23.1	16.3	14.0	9.6	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			21.2	0.2		6.0	0.3	4.8	0.8	
Delay (s)		31.3			56.7	23.2		29.1	16.6	18.8	10.4	
Level of Service		C			E	C		C	B	B	B	
Approach Delay (s/veh)		31.3			37.9			27.0			14.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	602	1	7	654	4	2	2	7	18	0	4
Future Volume (vph)	6	602	1	7	654	4	2	2	7	18	0	4
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			0.914			0.977	
Flt Protected								0.991			0.960	
Satd. Flow (prot)	0	1862	0	0	1864	0	0	1595	0	0	1802	0
Flt Permitted								0.991			0.960	
Satd. Flow (perm)	0	1862	0	0	1864	0	0	1595	0	0	1802	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	14		5	5		14			1	1		
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 (%)	20%	3%	0%	0%	3%	0%	50%	0%	0%	0%	0%	0%
Adj. Flow (vph)	6	640	1	7	696	4	2	2	7	19	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	647	0	0	707	0	0	11	0	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.9%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	602	1	7	654	4	2	2	7	18	0	4
Future Volume (Veh/h)	6	602	1	7	654	4	2	2	7	18	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	6	640	1	7	696	4	2	2	7	19	0	4
Pedestrians					1			5			14	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	714			646			1374	1386	647	1388	1384	712
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	714			634			1372	1384	635	1386	1382	712
tC, single (s)	4.3			4.1			7.6	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			4.0	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	83	100	99
cM capacity (veh/h)	798			941			92	138	473	112	138	430

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	647	707	11	23
Volume Left	6	7	2	19
Volume Right	1	4	7	4
cSH	798	941	216	129
Volume to Capacity	0.01	0.01	0.05	0.18
Queue Length 95th (m)	0.2	0.2	1.2	4.7
Control Delay (s/veh)	0.2	0.2	22.6	38.9
Lane LOS	A	A	C	E
Approach Delay (s/veh)	0.2	0.2	22.6	38.9
Approach LOS			C	E

Intersection Summary					
Average Delay	1.0				
Intersection Capacity Utilization	49.9%	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)	1	602	15	59	674	64	9	0	27	16	0	2
Future Volume (vph)	1	602	15	59	674	64	9	0	27	16	0	2
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			0.989			0.899			0.986	
Flt Protected					0.996			0.988			0.957	
Satd. Flow (prot)	0	1861	0	0	1846	0	0	1706	0	0	1813	0
Flt Permitted					0.996			0.988			0.957	
Satd. Flow (perm)	0	1861	0	0	1846	0	0	1706	0	0	1813	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	26		4	4		26	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	669	17	66	749	71	10	0	30	18	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	687	0	0	886	0	0	40	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			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	602	15	59	674	64	9	0	27	16	0	2
Future Volume (Veh/h)	1	602	15	59	674	64	9	0	27	16	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	669	17	66	749	71	10	0	30	18	0	2
Pedestrians		2						4			26	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	846			690			1604	1662	682	1652	1635	813
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	846			690			1604	1662	682	1652	1635	813
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			87	100	93	73	100	99
cM capacity (veh/h)	779			910			78	88	452	67	92	371

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	687	886	40	20
Volume Left	1	66	10	18
Volume Right	17	71	30	2
cSH	779	910	206	73
Volume to Capacity	0.00	0.07	0.19	0.28
Queue Length 95th (m)	0.0	1.8	5.3	7.5
Control Delay (s/veh)	0.0	1.9	26.6	72.3
Lane LOS	A	A	D	F
Approach Delay (s/veh)	0.0	1.9	26.6	72.3
Approach LOS			D	F

Intersection Summary					
Average Delay	2.6				
Intersection Capacity Utilization	89.4%	ICU Level of Service		E	
Analysis Period (min)	15				

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	26	20	1	66	7	1
Future Volume (vph)	26	20	1	66	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.941				0.986	
Flt Protected				0.999	0.957	
Satd. Flow (prot)	1808	0	0	1846	1813	0
Flt Permitted				0.999	0.957	
Satd. Flow (perm)	1808	0	0	1846	1813	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	276.6			95.4	99.6	
Travel Time (s)	20.7			7.2	7.5	
Confl. Peds. (#/hr)		8	8			
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	0%	0%	0%	4%	0%	0%
Adj. Flow (vph)	35	27	1	89	9	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	0	90	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	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
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	15.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	26	20	1	66	7	1
Future Volume (Veh/h)	26	20	1	66	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	35	27	1	89	9	1
Pedestrians					8	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			70		148	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		148	57
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)			1531		842	1008

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	62	90	10
Volume Left	0	1	9
Volume Right	27	0	1
cSH	1700	1531	856
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s/veh)	0.0	0.1	9.3
Lane LOS		A	A
Approach Delay (s/veh)	0.0	0.1	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	15.7%	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)	7	1	16	1	2	48	11	872	2	18	583	13
Future Volume (vph)	7	1	16	1	2	48	11	872	2	18	583	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.908			0.872						0.997	
Flt Protected		0.986			0.999		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1674	0	1825	1830	0	1825	1809	0
Flt Permitted		0.986			0.999		0.950			0.950		
Satd. Flow (perm)	0	1720	0	0	1674	0	1825	1830	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							16		11	11		16
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%	0%	0%	0%	0%	0%	0%	5%	0%	0%	6%	0%
Adj. Flow (vph)	7	1	17	1	2	51	12	928	2	19	620	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	54	0	12	930	0	19	634	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.4%	ICU Level of Service B	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	16	1	2	48	11	872	2	18	583	13
Future Volume (Veh/h)	7	1	16	1	2	48	11	872	2	18	583	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	7	1	17	1	2	51	12	928	2	19	620	14
Pedestrians		16			11							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		2			1							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.73	0.73		0.73	0.73	0.73				0.73		
vC, conflicting volume	1685	1646	643	1640	1652	940	650			941		
vC1, stage 1 conf vol	681	681		964	964							
vC2, stage 2 conf vol	1004	965		676	688							
vCu, unblocked vol	1752	1699	643	1690	1707	736	650			737		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	96	100	99	83	99			97		
cM capacity (veh/h)	180	234	470	230	242	306	931			636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	25	54	12	930	19	634
Volume Left	7	1	12	0	19	0
Volume Right	17	51	0	2	0	14
cSH	315	301	931	1700	636	1700
Volume to Capacity	0.08	0.18	0.01	0.55	0.03	0.37
Queue Length 95th (m)	2.0	4.9	0.3	0.0	0.7	0.0
Control Delay (s/veh)	17.4	19.5	8.9	0.0	10.8	0.0
Lane LOS	C	C	A		B	
Approach Delay (s/veh)	17.4	19.5	0.1		0.3	
Approach LOS	C	C				

Intersection Summary					
Average Delay	1.1				
Intersection Capacity Utilization	58.4%	ICU Level of Service		B	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	75	16	11	36	16
Future Volume (vph)	20	75	16	11	36	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.893		0.944			
Flt Protected	0.990					0.966
Satd. Flow (prot)	1672	0	1742	0	0	1735
Flt Permitted	0.990					0.966
Satd. Flow (perm)	1672	0	1742	0	0	1735
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	8	3		49	49	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	2%	7%	0%	10%	0%
Adj. Flow (vph)	25	95	20	14	46	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	34	0	0	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	75	16	11	36	16
Future Volume (Veh/h)	20	75	16	11	36	16
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	25	95	20	14	46	20
Pedestrians	49		8			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	5		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	196	79			83	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	79			83	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	97	90			97	
cM capacity (veh/h)	728	932			1395	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	120	34	66
Volume Left	25	0	46
Volume Right	95	14	0
cSH	880	1700	1395
Volume to Capacity	0.14	0.02	0.03
Queue Length 95th (m)	3.6	0.0	0.8
Control Delay (s/veh)	9.7	0.0	5.4
Lane LOS	A		A
Approach Delay (s/veh)	9.7	0.0	5.4
Approach LOS	A		

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	24.7%	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)	6	567	8	13	582	13	6	4	12	15	0	19
Future Volume (vph)	6	567	8	13	582	13	6	4	12	15	0	19
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			0.997			0.924			0.925	
Flt Protected					0.999			0.987			0.978	
Satd. Flow (prot)	0	1808	0	0	1843	0	0	1657	0	0	1738	0
Flt Permitted					0.999			0.987			0.978	
Satd. Flow (perm)	0	1808	0	0	1843	0	0	1657	0	0	1738	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	6	591	8	14	606	14	6	4	13	16	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	0	634	0	0	23	0	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	567	8	13	582	13	6	4	12	15	0	19
Future Volume (Veh/h)	6	567	8	13	582	13	6	4	12	15	0	19
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	6	591	8	14	606	14	6	4	12	16	0	20
Pedestrians					33			19			35	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					3			2			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	655			618			1287	1309	647	1330	1306	648
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	655			481			1254	1279	514	1304	1276	648
tC, single (s)	4.1			4.1			7.1	6.8	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.3	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	97	97	84	100	96
cM capacity (veh/h)	909			928			115	116	464	101	135	458

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	605	634	22	36
Volume Left	6	14	6	16
Volume Right	8	14	12	20
cSH	909	928	195	177
Volume to Capacity	0.01	0.02	0.11	0.20
Queue Length 95th (m)	0.2	0.3	2.8	5.6
Control Delay (s/veh)	0.2	0.4	25.7	30.4
Lane LOS	A	A	D	D
Approach Delay (s/veh)	0.2	0.4	25.7	30.4
Approach LOS			D	D

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	56.2%	ICU Level of Service		B	
Analysis Period (min)	15				



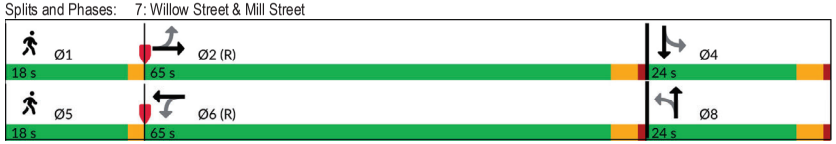
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	567	8	13	582	13	6	4	12	15	0	19
Future Volume (vph)	6	567	8	13	582	13	6	4	12	15	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.93			0.96	
Frt		0.998			0.997			0.924			0.925	
Flt Protected					0.999			0.987			0.978	
Satd. Flow (prot)	0	1806	0	0	1838	0	0	1548	0	0	1738	0
Flt Permitted		0.995			0.985			0.951			0.900	
Satd. Flow (perm)	0	1797	0	0	1812	0	0	1492	0	0	1532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			13			36	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	6	591	8	14	606	14	6	4	13	16	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	0	634	0	0	23	0	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.60			0.62			0.08			0.12	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		18.3			18.8			23.8			13.0	
Queue Delay		27.3			0.0			0.0			0.0	
Total Delay (s/veh)		45.6			18.8			23.8			13.0	
LOS		D			B			C			B	
Approach Delay (s/veh)		45.6			18.8			23.8			13.0	
Approach LOS		D			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 22.5 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 31.2		Intersection LOS: C	
Intersection Capacity Utilization 62.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	605	634	23	36
v/c Ratio	0.60	0.62	0.08	0.12
Control Delay (s/veh)	18.3	18.8	23.8	13.0
Queue Delay	27.3	0.0	0.0	0.0
Total Delay (s/veh)	45.6	18.8	23.8	13.0
Queue Length 50th (m)	77.9	83.1	1.7	0.0
Queue Length 95th (m)	111.6	118.7	8.7	8.5
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1016	1025	282	308
Starvation Cap Reductn	428	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.03	0.62	0.08	0.12

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	567	8	13	582	13	6	4	12	15	0	19
Future Volume (vph)	6	567	8	13	582	13	6	4	12	15	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.93			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.96	
Frt		1.00			1.00			0.92			0.93	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1805			1837			1548			1665	
Flt Permitted		0.99			0.98			0.95			0.90	
Satd. Flow (perm)		1797			1811			1492			1532	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	6	591	8	14	606	14	6	4	12	16	0	20
RTOR Reduction (vph)	0	0	0	0	1	0	0	11	0	0	29	0
Lane Group Flow (vph)	0	605	0	0	633	0	0	12	0	0	7	0
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1016			1023			271			279	
v/s Ratio Prot												
v/s Ratio Perm		0.34			c0.35			c0.01			0.00	
v/c Ratio		0.60			0.62			0.05			0.02	
Uniform Delay, d1		15.2			15.5			36.1			35.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.6			2.8			0.3			0.2	
Delay (s)		17.8			18.4			36.4			36.1	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		17.8			18.4			36.4			36.1	
Approach LOS		B			B			D			D	

Intersection Summary					
HCM 2000 Control Delay (s/veh)	18.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.40				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	62.0%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Appendix F

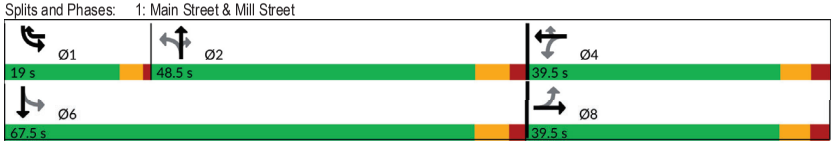
Future Total Traffic Operations Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	140	21	131	110	175	15	222	119	235	325	22
Future Volume (vph)	27	140	21	131	110	175	15	222	119	235	325	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	0.99	1.00	
Frt		0.985				0.850			0.850		0.991	
Flt Protected		0.993			0.973			0.997		0.950		
Satd. Flow (prot)	0	1754	0	0	1780	1541	0	1722	1526	1706	1684	0
Flt Permitted		0.885			0.653			0.965		0.516		
Satd. Flow (perm)	0	1562	0	0	1191	1504	0	1666	1481	921	1684	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				194			119		5	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Adj. Flow (vph)	30	156	23	146	122	194	17	247	132	261	361	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	209	0	0	268	194	0	264	132	261	385	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		26.0			26.0	39.6		46.2	46.2	63.8	61.3	
Actuated g/C Ratio		0.26			0.26	0.39		0.46	0.46	0.64	0.61	
v/c Ratio		0.51			0.87	0.27		0.34	0.18	0.39	0.37	
Control Delay (s/veh)		35.0			62.7	3.1		21.3	5.5	10.7	12.1	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		35.0			62.7	3.1		21.3	5.5	10.7	12.1	
LOS		C			E	A		C	A	B	B	
Approach Delay (s/veh)		35.0			37.6			16.0			11.5	
Approach LOS		C			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 100.3			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 22.5		Intersection LOS: C	
Intersection Capacity Utilization 93.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	209	268	194	264	132	261	385
v/c Ratio	0.51	0.87	0.27	0.34	0.18	0.39	0.37
Control Delay (s/veh)	35.0	62.7	3.1	21.3	5.5	10.7	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.0	62.7	3.1	21.3	5.5	10.7	12.1
Queue Length 50th (m)	33.6	49.6	0.0	32.8	1.4	20.7	35.6
Queue Length 95th (m)	54.8	#86.3	10.5	60.8	13.2	37.9	62.0
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	520	393	768	766	745	703	1030
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.68	0.25	0.34	0.18	0.37	0.37

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	140	21	131	110	175	15	222	119	235	325	22
Future Volume (vph)	27	140	21	131	110	175	15	222	119	235	325	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1753			1775	1515		1721	1482	1701	1683	
Flt Permitted		0.88			0.65	1.00		0.96	1.00	0.52	1.00	
Satd. Flow (perm)		1562			1190	1515		1665	1482	923	1683	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	156	23	146	122	194	17	247	132	261	361	24
RTOR Reduction (vph)	0	4	0	0	0	122	0	0	64	0	2	0
Lane Group Flow (vph)	0	205	0	0	268	72	0	264	68	261	383	0
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		26.0			26.0	37.1		46.2	46.2	61.3	61.3	
Effective Green, g (s)		26.0			26.0	37.1		46.2	46.2	61.3	61.3	
Actuated g/C Ratio		0.26			0.26	0.37		0.46	0.46	0.61	0.61	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		404			308	560		766	682	650	1028	
v/s Ratio Prot						0.01				c0.04	0.23	
v/s Ratio Perm		0.13			c0.23	0.03		0.16	0.05	c0.20		
v/c Ratio		0.51			0.87	0.13		0.34	0.10	0.40	0.37	
Uniform Delay, d1		31.7			35.5	20.9		17.3	15.3	9.3	9.8	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.0			22.4	0.0		1.2	0.3	0.1	1.0	
Delay (s)		32.7			57.9	20.9		18.6	15.6	9.4	10.9	
Level of Service		C			E	C		B	B	A	B	
Approach Delay (s/veh)		32.7			42.4			17.6			10.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	461	2	1	453	13	3	2	2	20	0	9
Future Volume (vph)	12	461	2	1	453	13	3	2	2	20	0	9
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			0.996			0.961			0.958	
Flt Protected		0.999						0.979			0.967	
Satd. Flow (prot)	0	1807	0	0	1820	0	0	1583	0	0	1634	0
Flt Permitted		0.999						0.979			0.967	
Satd. Flow (perm)	0	1807	0	0	1820	0	0	1583	0	0	1634	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	5		4	4		5						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	6%	0%	0%	5%	9%	33%	0%	0%	13%	0%	0%
Adj. Flow (vph)	13	518	2	1	509	15	3	2	2	22	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	533	0	0	525	0	0	7	0	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.5%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	461	2	1	453	13	3	2	2	20	0	9
Future Volume (Veh/h)	12	461	2	1	453	13	3	2	2	20	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	13	518	2	1	509	15	3	2	2	22	0	10
Pedestrians								4			5	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	529			524			1078	1080	523	1072	1074	522
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	529			524			1078	1080	523	1072	1074	522
tC, single (s)	4.2			4.1			7.4	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.8	4.0	3.3	3.6	4.0	3.3
p0 queue free %	99			100			98	99	100	88	100	98
cM capacity (veh/h)	994			1049			165	215	556	183	217	556

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	533	525	7	32
Volume Left	13	1	3	22
Volume Right	2	15	2	10
cSH	994	1049	225	231
Volume to Capacity	0.01	0.00	0.03	0.14
Queue Length 95th (m)	0.3	0.0	0.7	3.6
Control Delay (s/veh)	0.4	0.0	21.5	23.0
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.4	0.0	21.5	23.0
Approach LOS			C	C

Intersection Summary					
Average Delay	1.0				
Intersection Capacity Utilization	43.5%	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)	2	472	19	39	474	38	7	0	14	13	1	2
Future Volume (vph)	2	472	19	39	474	38	7	0	14	13	1	2
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			0.991			0.912			0.984	
Flt Protected					0.996			0.983			0.960	
Satd. Flow (prot)	0	1801	0	0	1808	0	0	1642	0	0	1714	0
Flt Permitted					0.996			0.983			0.960	
Satd. Flow (perm)	0	1801	0	0	1808	0	0	1642	0	0	1714	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	17		1	1		17	3					3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	50%	6%	6%	0%	5%	8%	14%	0%	0%	0%	0%	50%
Adj. Flow (vph)	2	519	21	43	521	42	8	0	15	14	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	542	0	0	606	0	0	23	0	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	67.5%	ICU Level of Service C		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	472	19	39	474	38	7	0	14	13	1	2
Future Volume (Veh/h)	2	472	19	39	474	38	7	0	14	13	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	519	21	43	521	42	8	0	15	14	1	2
Pedestrians		3						1			17	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	580			541			1168	1201	531	1194	1190	562
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	580			541			1168	1201	531	1194	1190	562
tC, single (s)	4.6			4.1			7.2	6.5	6.2	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.6	4.0	3.3	3.5	4.0	3.8
p0 queue free %	100			96			95	100	97	91	99	100
cM capacity (veh/h)	782			1037			152	175	552	151	178	437

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	542	606	23	17
Volume Left	2	43	8	14
Volume Right	21	42	15	2
cSH	782	1037	288	165
Volume to Capacity	0.00	0.04	0.08	0.10
Queue Length 95th (m)	0.1	1.0	2.0	2.6
Control Delay (s/veh)	0.1	1.1	18.6	29.3
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.1	1.1	18.6	29.3
Approach LOS			C	D

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	67.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	17	16	4	44	0	10	2	2	3	7	9
Future Volume (vph)	3	17	16	4	44	0	10	2	2	3	7	9
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		0.938						0.979			0.936	
Flt Protected		0.997			0.996			0.964			0.993	
Satd. Flow (prot)	0	1649	0	0	1753	0	0	1674	0	0	1751	0
Flt Permitted		0.997			0.996			0.964			0.993	
Satd. Flow (perm)	0	1649	0	0	1753	0	0	1674	0	0	1751	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		276.6			95.4			99.6			71.6	
Travel Time (s)		20.7			7.2			7.5			5.4	
Confl. Peds. (#/hr)			13	13			2					
Peak Hour Factor	0.92	0.70	0.70	0.70	0.70	0.92	0.70	0.92	0.70	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	13%	0%	10%	2%	11%	2%	0%	2%	2%	2%
Adj. Flow (vph)	3	24	23	6	63	0	14	2	3	3	8	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	69	0	0	19	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	16.8%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	17	16	4	44	0	10	2	2	3	7	9
Future Volume (Veh/h)	3	17	16	4	44	0	10	2	2	3	7	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.70	0.70	0.70	0.70	0.92	0.70	0.92	0.70	0.92	0.92	0.92
Hourly flow rate (vph)	3	24	23	6	63	0	14	2	3	3	8	10
Pedestrians		2						13				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	63			60			146	130	49	121	141	65
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	63			60			146	130	49	121	141	65
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	100	100	99	99
cM capacity (veh/h)	1540			1537			766	747	1013	838	736	997

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	50	69	19	21
Volume Left	3	6	14	3
Volume Right	23	0	3	10
cSH	1540	1537	794	858
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (m)	0.0	0.1	0.6	0.6
Control Delay (s/veh)	0.5	0.7	9.6	9.3
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.5	0.7	9.6	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	16.8%	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)	4	0	10	1	0	18	1	413	1	21	717	6
Future Volume (vph)	4	0	10	1	0	18	1	413	1	21	717	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.901			0.871						0.999	
Flt Protected		0.987			0.998		0.950			0.950		
Satd. Flow (prot)	0	1708	0	0	1670	0	1825	1763	0	1825	1809	0
Flt Permitted		0.987			0.998		0.950			0.950		
Satd. Flow (perm)	0	1708	0	0	1670	0	1825	1763	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							3		3	3		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	6%	17%
Adj. Flow (vph)	4	0	11	1	0	20	1	459	1	23	797	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	21	0	1	460	0	23	804	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	10	1	0	18	1	413	1	21	717	6
Future Volume (Veh/h)	4	0	10	1	0	18	1	413	1	21	717	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	11	1	0	20	1	459	1	23	797	7
Pedestrians		3			3							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	1331	1315	804	1319	1318	463	807			463		
vC1, stage 1 conf vol	850	850		465	465							
vC2, stage 2 conf vol	481	465		854	853							
vCu, unblocked vol	1316	1299	804	1303	1302	376	807			376		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	97	100	100	97	100			98		
cM capacity (veh/h)	305	325	385	303	326	621	824			1098		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	15	21	1	460	23	804
Volume Left	4	1	1	0	23	0
Volume Right	11	20	0	1	0	7
cSH	360	592	824	1700	1098	1700
Volume to Capacity	0.04	0.04	0.00	0.27	0.02	0.47
Queue Length 95th (m)	1.0	0.8	0.0	0.0	0.5	0.0
Control Delay (s/veh)	15.4	11.3	9.4	0.0	8.3	0.0
Lane LOS	C	B	A		A	
Approach Delay (s/veh)	15.4	11.3	0.0		0.2	
Approach LOS	C	B				

Intersection Summary					
Average Delay	0.5				
Intersection Capacity Utilization	48.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	16	46	8	14	32	8
Future Volume (vph)	16	46	8	14	32	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.900		0.913			
Flt Protected	0.987					0.962
Satd. Flow (prot)	1606	0	1676	0	0	1848
Flt Permitted	0.987					0.962
Satd. Flow (perm)	1606	0	1676	0	0	1848
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	1	1		23	23	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	5%	13%	0%	0%	0%
Adj. Flow (vph)	20	58	10	18	40	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	28	0	0	50
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	16	46	8	14	32	8
Future Volume (Veh/h)	16	46	8	14	32	8
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	20	58	10	18	40	10
Pedestrians	23		1			1
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	2		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	133	43			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133	43			51	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	98	94			97	
cM capacity (veh/h)	801	995			1533	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	78	28	50
Volume Left	20	0	40
Volume Right	58	18	0
cSH	937	1700	1533
Volume to Capacity	0.08	0.02	0.03
Queue Length 95th (m)	2.1	0.0	0.6
Control Delay (s/veh)	9.2	0.0	6.0
Lane LOS	A		A
Approach Delay (s/veh)	9.2	0.0	6.0
Approach LOS	A		

Intersection Summary					
Average Delay		6.5			
Intersection Capacity Utilization		19.6%	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	529	6	11	416	15	1	2	4	4	3	10
Future Volume (vph)	13	529	6	11	416	15	1	2	4	4	3	10
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			0.995			0.916			0.922	
Flt Protected		0.999			0.999			0.994			0.987	
Satd. Flow (prot)	0	1821	0	0	1799	0	0	1365	0	0	1592	0
Flt Permitted		0.999			0.999			0.994			0.987	
Satd. Flow (perm)	0	1821	0	0	1799	0	0	1365	0	0	1592	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	15	601	7	13	473	17	1	2	5	5	3	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	623	0	0	503	0	0	8	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.8%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	529	6	11	416	15	1	2	4	4	3	10
Future Volume (Veh/h)	13	529	6	11	416	15	1	2	4	4	3	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	15	601	7	12	473	17	1	2	5	5	3	11
Pedestrians					5			2			3	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	493			610			1155	1154	612	1154	1149	485
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			475			1102	1101	477	1102	1095	485
tC, single (s)	4.1			4.2			7.1	7.0	6.4	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.4	3.5	3.5	4.0	3.5
p0 queue free %	99			99			99	99	99	97	98	98
cM capacity (veh/h)	1078			907			156	146	469	157	181	551

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	623	502	8	19
Volume Left	15	12	1	5
Volume Right	7	17	5	11
cSH	1078	907	260	278
Volume to Capacity	0.01	0.01	0.03	0.07
Queue Length 95th (m)	0.3	0.3	0.7	1.7
Control Delay (s/veh)	0.4	0.4	19.3	18.9
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.4	0.4	19.3	18.9
Approach LOS			C	C

Intersection Summary					
Average Delay	0.8				
Intersection Capacity Utilization	45.8%	ICU Level of Service		A	
Analysis Period (min)	15				



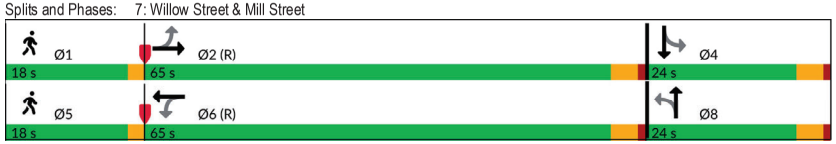
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	529	6	11	416	15	1	2	4	4	3	10
Future Volume (vph)	13	529	6	11	416	15	1	2	4	4	3	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			1.00	
Frt		0.998			0.995			0.916			0.922	
Flt Protected		0.999			0.999			0.994			0.987	
Satd. Flow (prot)	0	1820	0	0	1797	0	0	1336	0	0	1592	0
Flt Permitted		0.985			0.982			0.985			0.958	
Satd. Flow (perm)	0	1795	0	0	1767	0	0	1324	0	0	1539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			5			11	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	15	601	7	13	473	17	1	2	5	5	3	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	623	0	0	503	0	0	8	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.61			0.50			0.03			0.07	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		18.7			16.2			26.4			23.8	
Queue Delay		32.4			0.0			0.0			0.0	
Total Delay (s/veh)		51.1			16.2			26.4			23.8	
LOS		D			B			C			C	
Approach Delay (s/veh)		51.1			16.2			26.4			23.8	
Approach LOS		D			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 25 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 35.3		Intersection LOS: D	
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	623	503	8	19
v/c Ratio	0.61	0.50	0.03	0.07
Control Delay (s/veh)	18.7	16.2	26.4	23.8
Queue Delay	32.4	0.0	0.0	0.0
Total Delay (s/veh)	51.1	16.2	26.4	23.8
Queue Length 50th (m)	81.5	59.8	0.5	1.4
Queue Length 95th (m)	112.2	83.6	4.6	7.6
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1015	1000	245	289
Starvation Cap Reductn	419	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.05	0.50	0.03	0.07

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	529	6	11	416	15	1	2	4	4	3	10
Future Volume (vph)	13	529	6	11	416	15	1	2	4	4	3	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.92			0.92	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1821			1798			1335			1585	
Flt Permitted		0.99			0.98			0.98			0.96	
Satd. Flow (perm)		1796			1768			1323			1538	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	15	601	7	12	473	17	1	2	5	5	3	11
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	9	0
Lane Group Flow (vph)	0	623	0	0	502	0	0	4	0	0	10	0
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1015			999			241			280	
v/s Ratio Prot												
v/s Ratio Perm		c0.35			0.28			0.00			c0.01	
v/c Ratio		0.61			0.50			0.02			0.04	
Uniform Delay, d1		15.5			14.1			35.9			36.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.8			1.8			0.1			0.2	
Delay (s)		18.2			15.9			36.0			36.2	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		18.2			15.9			36.0			36.2	
Approach LOS		B			B			D			D	

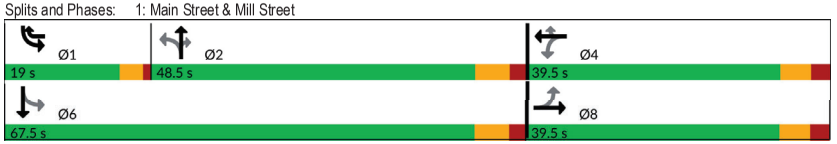
Intersection Summary					
HCM 2000 Control Delay (s/veh)	17.6	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.39				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	56.8%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	125	14	151	110	326	12	500	109	267	281	20
Future Volume (vph)	21	125	14	151	110	326	12	500	109	267	281	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Frt		0.989				0.850			0.850		0.990	
Flt Protected		0.993			0.972			0.999		0.950		
Satd. Flow (prot)	0	1802	0	0	1806	1617	0	1796	1585	1789	1780	0
Flt Permitted		0.928			0.698			0.990		0.290		
Satd. Flow (perm)	0	1684	0	0	1294	1579	0	1780	1544	545	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				191			76		6	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Adj. Flow (vph)	22	129	14	156	113	336	12	515	112	275	290	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	165	0	0	269	336	0	527	112	275	311	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		24.5			24.5	37.8		46.4	46.4	63.8	61.3	
Actuated g/C Ratio		0.25			0.25	0.38		0.47	0.47	0.65	0.62	
v/c Ratio		0.39			0.84	0.46		0.63	0.15	0.56	0.28	
Control Delay (s/veh)		32.2			58.0	9.4		26.4	8.1	13.2	10.3	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		32.2			58.0	9.4		26.4	8.1	13.2	10.3	
LOS		C			E	A		C	A	B	B	
Approach Delay (s/veh)		32.2			31.0			23.2			11.6	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 98.8			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 22.9		Intersection LOS: C	
Intersection Capacity Utilization 97.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	165	269	336	527	112	275	311
v/c Ratio	0.39	0.84	0.46	0.63	0.15	0.56	0.28
Control Delay (s/veh)	32.2	58.0	9.4	26.4	8.1	13.2	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.2	58.0	9.4	26.4	8.1	13.2	10.3
Queue Length 50th (m)	25.4	48.8	17.1	74.3	3.7	20.3	25.0
Queue Length 95th (m)	43.0	78.2	33.7	134.2	15.6	39.6	47.2
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	568	434	787	836	765	541	1106
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.62	0.43	0.63	0.15	0.51	0.28

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	125	14	151	110	326	12	500	109	267	281	20
Future Volume (vph)	21	125	14	151	110	326	12	500	109	267	281	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802			1802	1591		1796	1545	1788	1780	
Flt Permitted		0.93			0.70	1.00		0.99	1.00	0.29	1.00	
Satd. Flow (perm)		1682			1294	1591		1780	1545	547	1780	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	22	129	14	156	113	336	12	515	112	275	290	21
RTOR Reduction (vph)	0	4	0	0	0	123	0	0	40	0	2	0
Lane Group Flow (vph)	0	161	0	0	269	213	0	527	72	275	309	0
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		24.4			24.4	35.3		46.4	46.4	61.3	61.3	
Effective Green, g (s)		24.4			24.4	35.3		46.4	46.4	61.3	61.3	
Actuated g/C Ratio		0.25			0.25	0.36		0.47	0.47	0.62	0.62	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		415			319	569		836	726	476	1105	
v/s Ratio Prot						0.04				c0.06	0.17	
v/s Ratio Perm		0.10			c0.21	0.09		c0.30	0.05	0.29		
v/c Ratio		0.39			0.84	0.37		0.63	0.10	0.58	0.28	
Uniform Delay, d1		30.9			35.3	23.5		19.7	14.5	11.1	8.6	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			18.0	0.2		3.6	0.3	1.1	0.6	
Delay (s)		31.5			53.3	23.7		23.3	14.8	12.1	9.2	
Level of Service		C			D	C		C	B	B	A	
Approach Delay (s/veh)		31.5			36.9			21.8			10.6	
Approach LOS		C			D			C			B	

Intersection Summary				
HCM 2000 Control Delay (s/veh)	23.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	17.0	
Intersection Capacity Utilization	97.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	547	1	6	593	7	2	2	6	18	0	5
Future Volume (vph)	9	547	1	6	593	7	2	2	6	18	0	5
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			0.919			0.972	
Flt Protected		0.999						0.990			0.962	
Satd. Flow (prot)	0	1858	0	0	1864	0	0	1589	0	0	1796	0
Flt Permitted		0.999						0.990			0.962	
Satd. Flow (perm)	0	1858	0	0	1864	0	0	1589	0	0	1796	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	14		5	5		14			1	1		
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 (%)	20%	3%	0%	0%	3%	0%	50%	0%	0%	0%	0%	0%
Adj. Flow (vph)	10	582	1	6	631	7	2	2	6	19	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	644	0	0	10	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.5%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	547	1	6	593	7	2	2	6	18	0	5
Future Volume (Veh/h)	9	547	1	6	593	7	2	2	6	18	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	10	582	1	6	631	7	2	2	6	19	0	5
Pedestrians					1			5			14	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	652			588			1259	1272	589	1271	1269	649
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652			588			1259	1272	589	1271	1269	649
tC, single (s)	4.3			4.1			7.6	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			4.0	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	86	100	99
cM capacity (veh/h)	843			992			113	163	509	137	164	467

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	593	644	10	24
Volume Left	10	6	2	19
Volume Right	1	7	6	5
cSH	843	992	239	161
Volume to Capacity	0.01	0.01	0.04	0.15
Queue Length 95th (m)	0.3	0.1	1.0	3.9
Control Delay (s/veh)	0.3	0.2	20.7	31.3
Lane LOS	A	A	C	D
Approach Delay (s/veh)	0.3	0.2	20.7	31.3
Approach LOS			C	D

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	45.5%	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)	1	549	14	53	615	61	8	0	24	17	0	2
Future Volume (vph)	1	549	14	53	615	61	8	0	24	17	0	2
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			0.989			0.899			0.987	
Flt Protected					0.996			0.988			0.957	
Satd. Flow (prot)	0	1861	0	0	1846	0	0	1706	0	0	1815	0
Flt Permitted					0.996			0.988			0.957	
Satd. Flow (perm)	0	1861	0	0	1846	0	0	1706	0	0	1815	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	26		4	4		26	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	610	16	59	683	68	9	0	27	19	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	627	0	0	810	0	0	36	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	549	14	53	615	61	8	0	24	17	0	2
Future Volume (Veh/h)	1	549	14	53	615	61	8	0	24	17	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	610	16	59	683	68	9	0	27	19	0	2
Pedestrians		2						4			26	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	777			630			1463	1519	622	1508	1493	745
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	777			630			1463	1519	622	1508	1493	745
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			91	100	94	78	100	100
cM capacity (veh/h)	827			958			99	109	488	86	113	406

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	627	810	36	21
Volume Left	1	59	9	19
Volume Right	16	68	27	2
cSH	827	958	246	93
Volume to Capacity	0.00	0.06	0.15	0.23
Queue Length 95th (m)	0.0	1.5	3.8	6.1
Control Delay (s/veh)	0.0	1.6	22.1	54.8
Lane LOS	A	A	C	F
Approach Delay (s/veh)	0.0	1.6	22.1	54.8
Approach LOS			C	F

Intersection Summary					
Average Delay	2.2				
Intersection Capacity Utilization	83.0%	ICU Level of Service		E	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	23	18	1	59	3	6	8	1	2	4	7
Future Volume (vph)	8	23	18	1	59	3	6	8	1	2	4	7
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		0.949			0.995			0.992			0.923	
Flt Protected		0.993			0.999			0.978			0.993	
Satd. Flow (prot)	0	1805	0	0	1838	0	0	1845	0	0	1726	0
Flt Permitted		0.993			0.999			0.978			0.993	
Satd. Flow (perm)	0	1805	0	0	1838	0	0	1845	0	0	1726	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		276.6			95.4			99.6			71.6	
Travel Time (s)		20.7			7.2			7.5			5.4	
Confl. Peds. (#/hr)			8	8								
Peak Hour Factor	0.92	0.74	0.74	0.74	0.74	0.92	0.74	0.92	0.74	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	4%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	9	31	24	1	80	3	8	9	1	2	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	84	0	0	18	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	19.0%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	23	18	1	59	3	6	8	1	2	4	7
Future Volume (Veh/h)	8	23	18	1	59	3	6	8	1	2	4	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.74	0.74	0.74	0.74	0.92	0.74	0.92	0.74	0.92	0.92	0.92
Hourly flow rate (vph)	9	31	24	1	80	3	8	9	1	2	4	8
Pedestrians								8				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.1				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	83			63			163	154	51	150	165	82
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			63			163	154	51	150	165	82
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	100	100	99	99
cM capacity (veh/h)	1514			1540			782	727	1015	800	718	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	84	18	14
Volume Left	9	1	8	2
Volume Right	24	3	1	8
cSH	1514	1540	763	862
Volume to Capacity	0.01	0.00	0.02	0.02
Queue Length 95th (m)	0.1	0.0	0.6	0.4
Control Delay (s/veh)	1.1	0.1	9.8	9.2
Lane LOS	A	A	A	A
Approach Delay (s/veh)	1.1	0.1	9.8	9.2
Approach LOS			A	A

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	19.0%	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)	6	1	15	1	2	49	10	790	2	21	528	12
Future Volume (vph)	6	1	15	1	2	49	10	790	2	21	528	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.906			0.872						0.997	
Flt Protected		0.987			0.999		0.950			0.950		
Satd. Flow (prot)	0	1718	0	0	1674	0	1825	1830	0	1825	1809	0
Flt Permitted		0.987			0.999		0.950			0.950		
Satd. Flow (perm)	0	1718	0	0	1674	0	1825	1830	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							16		11	11		16
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%	0%	0%	0%	0%	0%	0%	5%	0%	0%	6%	0%
Adj. Flow (vph)	6	1	16	1	2	52	11	840	2	22	562	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	55	0	11	842	0	22	575	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	53.3%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	15	1	2	49	10	790	2	21	528	12
Future Volume (Veh/h)	6	1	15	1	2	49	10	790	2	21	528	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	6	1	16	1	2	52	11	840	2	22	562	13
Pedestrians		16			11							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		2			1							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.78	0.78		0.78	0.78	0.78				0.78		
vC, conflicting volume	1544	1504	585	1497	1509	852	591			853		
vC1, stage 1 conf vol	629	629		874	874							
vC2, stage 2 conf vol	915	875		623	635							
vCu, unblocked vol	1556	1504	585	1496	1512	670	591			672		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	97	100	99	85	99			97		
cM capacity (veh/h)	214	267	507	266	276	356	979			717		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	23	55	11	842	22	575
Volume Left	6	1	11	0	22	0
Volume Right	16	52	0	2	0	13
cSH	363	350	979	1700	717	1700
Volume to Capacity	0.06	0.16	0.01	0.50	0.03	0.34
Queue Length 95th (m)	1.5	4.2	0.3	0.0	0.7	0.0
Control Delay (s/veh)	15.6	17.2	8.7	0.0	10.2	0.0
Lane LOS	C	C	A		B	
Approach Delay (s/veh)	15.6	17.2	0.1		0.4	
Approach LOS	C	C				

Intersection Summary					
Average Delay	1.1				
Intersection Capacity Utilization	53.3%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	73	15	13	38	15
Future Volume (vph)	20	73	15	13	38	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.894		0.938			
Flt Protected	0.989					0.965
Satd. Flow (prot)	1672	0	1736	0	0	1730
Flt Permitted	0.989					0.965
Satd. Flow (perm)	1672	0	1736	0	0	1730
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	8	3		49	49	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	2%	7%	0%	10%	0%
Adj. Flow (vph)	25	92	19	16	48	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	0	35	0	0	67
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	73	15	13	38	15
Future Volume (Veh/h)	20	73	15	13	38	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	25	92	19	16	48	19
Pedestrians	49		8			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	5		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	199	79			84	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	199	79			84	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	97	90			97	
cM capacity (veh/h)	724	932			1394	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	117	35	67
Volume Left	25	0	48
Volume Right	92	16	0
cSH	878	1700	1394
Volume to Capacity	0.13	0.02	0.03
Queue Length 95th (m)	3.5	0.0	0.8
Control Delay (s/veh)	9.7	0.0	5.6
Lane LOS	A		A
Approach Delay (s/veh)	9.7	0.0	5.6
Approach LOS	A		

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	24.6%	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)	8	519	7	12	530	12	5	3	11	14	0	19
Future Volume (vph)	8	519	7	12	530	12	5	3	11	14	0	19
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			0.997			0.922			0.923	
Flt Protected		0.999			0.999			0.987			0.979	
Satd. Flow (prot)	0	1807	0	0	1843	0	0	1662	0	0	1736	0
Flt Permitted		0.999			0.999			0.987			0.979	
Satd. Flow (perm)	0	1807	0	0	1843	0	0	1662	0	0	1736	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	8	541	7	13	552	13	5	3	11	15	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	556	0	0	578	0	0	19	0	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	52.1%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	519	7	12	530	12	5	3	11	14	0	19
Future Volume (Veh/h)	8	519	7	12	530	12	5	3	11	14	0	19
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	8	541	7	12	552	12	5	3	11	15	0	20
Pedestrians					33			19			35	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					3			2			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	599			567			1182	1203	597	1223	1200	593
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	599			446			1140	1164	479	1187	1161	593
tC, single (s)	4.1			4.1			7.1	6.8	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.3	3.3	3.5	4.0	3.3
p0 queue free %	99			99			96	98	98	88	100	96
cM capacity (veh/h)	954			977			141	140	496	125	162	492

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	556	576	19	35
Volume Left	8	12	5	15
Volume Right	7	12	11	20
cSH	954	977	241	218
Volume to Capacity	0.01	0.01	0.08	0.16
Queue Length 95th (m)	0.2	0.3	1.9	4.2
Control Delay (s/veh)	0.2	0.3	21.2	24.6
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.2	0.3	21.2	24.6
Approach LOS			C	C

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A	
Analysis Period (min)	15			



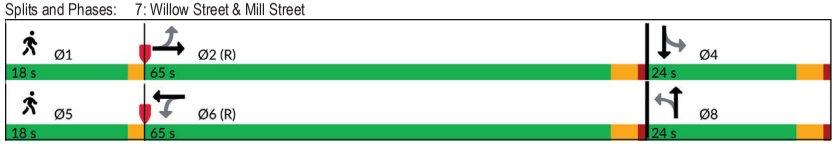
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	519	7	12	530	12	5	3	11	14	0	19
Future Volume (vph)	8	519	7	12	530	12	5	3	11	14	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.93			0.96	
Frt		0.998			0.997			0.922			0.923	
Flt Protected		0.999			0.999			0.987			0.979	
Satd. Flow (prot)	0	1805	0	0	1838	0	0	1550	0	0	1736	0
Flt Permitted		0.992			0.986			0.954			0.906	
Satd. Flow (perm)	0	1792	0	0	1813	0	0	1498	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			11			36	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	8	541	7	13	552	13	5	3	11	15	0	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	556	0	0	578	0	0	19	0	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.55			0.56			0.07			0.11	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		17.2			17.5			23.8			12.7	
Queue Delay		15.6			0.0			0.0			0.0	
Total Delay (s/veh)		32.8			17.5			23.8			12.7	
LOS		C			B			C			B	
Approach Delay (s/veh)		32.8			17.5			23.8			12.7	
Approach LOS		C			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 22.5 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 24.6		Intersection LOS: C	
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	556	578	19	35
v/c Ratio	0.55	0.56	0.07	0.11
Control Delay (s/veh)	17.2	17.5	23.8	12.7
Queue Delay	15.6	0.0	0.0	0.0
Total Delay (s/veh)	32.8	17.5	23.8	12.7
Queue Length 50th (m)	68.8	72.2	1.4	0.0
Queue Length 95th (m)	98.8	103.2	7.8	8.2
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1013	1025	281	310
Starvation Cap Reductn	445	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.98	0.56	0.07	0.11

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	519	7	12	530	12	5	3	11	14	0	19
Future Volume (vph)	8	519	7	12	530	12	5	3	11	14	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.93			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.96	
Frt		1.00			1.00			0.92			0.92	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1805			1837			1550			1665	
Flt Permitted		0.99			0.99			0.95			0.91	
Satd. Flow (perm)		1793			1813			1497			1541	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	541	7	12	552	12	5	3	11	15	0	20
RTOR Reduction (vph)	0	0	0	0	1	0	0	9	0	0	29	0
Lane Group Flow (vph)	0	556	0	0	577	0	0	10	0	0	6	0
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1013			1025			272			280	
v/s Ratio Prot												
v/s Ratio Perm		0.31			c0.32			c0.01			0.00	
v/c Ratio		0.55			0.56			0.04			0.02	
Uniform Delay, d1		14.6			14.8			36.0			35.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.1			2.2			0.3			0.1	
Delay (s)		16.8			17.1			36.3			36.1	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		16.8			17.1			36.3			36.1	
Approach LOS		B			B			D			D	

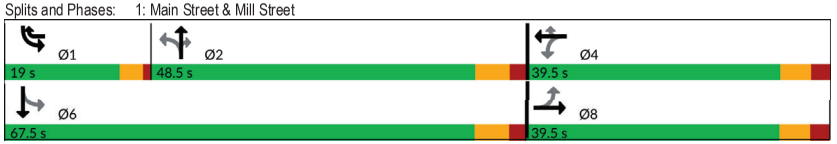
Intersection Summary					
HCM 2000 Control Delay (s/veh)	17.8	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.36				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	57.9%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	154	23	143	120	193	16	245	131	259	359	25
Future Volume (vph)	29	154	23	143	120	193	16	245	131	259	359	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97	0.99	1.00	
Frt		0.985				0.850			0.850		0.990	
Flt Protected		0.993			0.973			0.997		0.950		
Satd. Flow (prot)	0	1755	0	0	1780	1541	0	1722	1526	1706	1682	0
Flt Permitted		0.863			0.635			0.962		0.481		
Satd. Flow (perm)	0	1525	0	0	1158	1504	0	1660	1481	859	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				214			120		5	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Adj. Flow (vph)	32	171	26	159	133	214	18	272	146	288	399	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	229	0	0	292	214	0	290	146	288	427	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		28.6			28.6	43.2		45.1	45.1	63.7	61.2	
Actuated g/C Ratio		0.28			0.28	0.42		0.44	0.44	0.62	0.60	
v/c Ratio		0.54			0.91	0.28		0.40	0.20	0.46	0.43	
Control Delay (s/veh)		35.3			67.8	2.9		23.6	6.6	12.3	13.6	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		35.3			67.8	2.9		23.6	6.6	12.3	13.6	
LOS		D			E	A		C	A	B	B	
Approach Delay (s/veh)		35.3			40.4			17.9			13.1	
Approach LOS		D			D			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 102.8			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay (s/veh): 24.2		Intersection LOS: C	
Intersection Capacity Utilization 95.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	229	292	214	290	146	288	427
v/c Ratio	0.54	0.91	0.28	0.40	0.20	0.46	0.43
Control Delay (s/veh)	35.3	67.8	2.9	23.6	6.6	12.3	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.3	67.8	2.9	23.6	6.6	12.3	13.6
Queue Length 50th (m)	37.6	56.1	0.0	41.7	3.2	26.9	46.7
Queue Length 95th (m)	60.7	#100.7	11.1	67.2	15.5	42.1	70.5
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	495	372	798	727	716	656	1003
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.78	0.27	0.40	0.20	0.44	0.43

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	154	23	143	120	193	16	245	131	259	359	25
Future Volume (vph)	29	154	23	143	120	193	16	245	131	259	359	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.98			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1754			1775	1515		1720	1481	1702	1682	
Flt Permitted		0.86			0.64	1.00		0.96	1.00	0.48	1.00	
Satd. Flow (perm)		1524			1158	1515		1660	1481	861	1682	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	171	26	159	133	214	18	272	146	288	399	28
RTOR Reduction (vph)	0	4	0	0	0	129	0	0	67	0	2	0
Lane Group Flow (vph)	0	225	0	0	292	85	0	290	79	288	425	0
Confl. Peds. (#/hr)	2		6	6		2	9		5	5		9
Heavy Vehicles (%)	28%	3%	5%	5%	5%	6%	0%	12%	7%	7%	13%	10%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		28.6			28.6	40.7		45.1	45.1	61.2	61.2	
Effective Green, g (s)		28.6			28.6	40.7		45.1	45.1	61.2	61.2	
Actuated g/C Ratio		0.28			0.28	0.40		0.44	0.44	0.60	0.60	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		423			322	599		728	649	611	1001	
v/s Ratio Prot						0.02				c0.06	0.25	
v/s Ratio Perm		0.15			c0.25	0.04		0.17	0.05	c0.22		
v/c Ratio		0.53			0.91	0.14		0.40	0.12	0.47	0.42	
Uniform Delay, d1		31.4			35.8	19.9		19.6	17.1	10.6	11.3	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.3			27.6	0.0		1.6	0.4	0.2	1.3	
Delay (s)		32.7			63.4	19.9		21.2	17.5	10.8	12.6	
Level of Service		C			E	B		C	B	B	B	
Approach Delay (s/veh)		32.7			45.0			20.0			11.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	102.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	509	2	1	499	14	4	2	2	22	0	10
Future Volume (vph)	13	509	2	1	499	14	4	2	2	22	0	10
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					0.996			0.966			0.959	
Flt Protected		0.999						0.976			0.966	
Satd. Flow (prot)	0	1809	0	0	1821	0	0	1555	0	0	1632	0
Flt Permitted		0.999						0.976			0.966	
Satd. Flow (perm)	0	1809	0	0	1821	0	0	1555	0	0	1632	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	5		4	4		5						
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	6%	0%	0%	5%	9%	33%	0%	0%	13%	0%	0%
Adj. Flow (vph)	15	572	2	1	561	16	4	2	2	25	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	589	0	0	578	0	0	8	0	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.8%	ICU Level of Service A	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	509	2	1	499	14	4	2	2	22	0	10
Future Volume (Veh/h)	13	509	2	1	499	14	4	2	2	22	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	15	572	2	1	561	16	4	2	2	25	0	11
Pedestrians								4			5	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked												
vC, conflicting volume	582			578			1189	1191	577	1182	1184	574
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	582			578			1189	1191	577	1182	1184	574
tC, single (s)	4.2			4.1			7.4	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.8	4.0	3.3	3.6	4.0	3.3
p0 queue free %	98			100			97	99	100	84	100	98
cM capacity (veh/h)	949			1002			137	184	518	153	186	520

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	589	578	8	36
Volume Left	15	1	4	25
Volume Right	2	16	2	11
cSH	949	1002	182	195
Volume to Capacity	0.02	0.00	0.04	0.18
Queue Length 95th (m)	0.4	0.0	1.0	5.0
Control Delay (s/veh)	0.4	0.0	25.7	27.6
Lane LOS	A	A	D	D
Approach Delay (s/veh)	0.4	0.0	25.7	27.6
Approach LOS			D	D

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	46.8%	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)	2	520	21	43	522	42	8	0	15	14	1	2
Future Volume (vph)	2	520	21	43	522	42	8	0	15	14	1	2
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			0.991			0.914			0.985	
Flt Protected					0.996			0.982			0.960	
Satd. Flow (prot)	0	1801	0	0	1808	0	0	1642	0	0	1721	0
Flt Permitted					0.996			0.982			0.960	
Satd. Flow (perm)	0	1801	0	0	1808	0	0	1642	0	0	1721	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	17		1	1		17	3					3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	50%	6%	6%	0%	5%	8%	14%	0%	0%	0%	0%	50%
Adj. Flow (vph)	2	571	23	47	574	46	9	0	16	15	1	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	596	0	0	667	0	0	25	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	73.5%	ICU Level of Service D		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	520	21	43	522	42	8	0	15	14	1	2
Future Volume (Veh/h)	2	520	21	43	522	42	8	0	15	14	1	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	2	571	23	47	574	46	9	0	16	15	1	2
Pedestrians		3						1			17	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	637			595			1284	1319	584	1311	1307	617
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	637			595			1284	1319	584	1311	1307	617
tC, single (s)	4.6			4.1			7.2	6.5	6.2	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.6	4.0	3.3	3.5	4.0	3.8
p0 queue free %	100			95			93	100	97	88	99	100
cM capacity (veh/h)	742			990			125	148	515	124	150	405

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	596	667	25	18
Volume Left	2	47	9	15
Volume Right	23	46	16	2
cSH	742	990	243	136
Volume to Capacity	0.00	0.05	0.10	0.13
Queue Length 95th (m)	0.1	1.1	2.6	3.4
Control Delay (s/veh)	0.1	1.2	21.5	35.5
Lane LOS	A	A	C	E
Approach Delay (s/veh)	0.1	1.2	21.5	35.5
Approach LOS			C	E

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	73.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	19	18	5	48	0	11	2	2	3	7	9
Future Volume (vph)	3	19	18	5	48	0	11	2	2	3	7	9
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		0.937						0.981			0.936	
Flt Protected		0.997			0.995			0.963			0.993	
Satd. Flow (prot)	0	1646	0	0	1752	0	0	1672	0	0	1751	0
Flt Permitted		0.997			0.995			0.963			0.993	
Satd. Flow (perm)	0	1646	0	0	1752	0	0	1672	0	0	1751	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		276.6			95.4			99.6			71.6	
Travel Time (s)		20.7			7.2			7.5			5.4	
Confl. Peds. (#/hr)			13	13			2					
Peak Hour Factor	0.92	0.70	0.70	0.70	0.70	0.92	0.70	0.92	0.70	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	13%	0%	10%	2%	11%	2%	0%	2%	2%	2%
Adj. Flow (vph)	3	27	26	7	69	0	16	2	3	3	8	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	76	0	0	21	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	16.9%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	19	18	5	48	0	11	2	2	3	7	9
Future Volume (Veh/h)	3	19	18	5	48	0	11	2	2	3	7	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.70	0.70	0.70	0.70	0.92	0.70	0.92	0.70	0.92	0.92	0.92
Hourly flow rate (vph)	3	27	26	7	69	0	16	2	3	3	8	10
Pedestrians		2						13				
Lane Width (m)		3.7						3.7				
Walking Speed (m/s)		1.1						1.1				
Percent Blockage		0						1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	69			66			158	142	53	133	155	71
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	69			66			158	142	53	133	155	71
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	100	100	99	99
cM capacity (veh/h)	1532			1529			751	735	1007	822	723	990

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	76	21	21
Volume Left	3	7	16	3
Volume Right	26	0	3	10
cSH	1532	1529	778	846
Volume to Capacity	0.00	0.00	0.03	0.02
Queue Length 95th (m)	0.0	0.1	0.6	0.6
Control Delay (s/veh)	0.4	0.7	9.8	9.4
Lane LOS	A	A	A	A
Approach Delay (s/veh)	0.4	0.7	9.8	9.4
Approach LOS			A	A

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	16.9%	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)	5	0	11	1	0	19	1	456	1	23	792	7
Future Volume (vph)	5	0	11	1	0	19	1	456	1	23	792	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.910			0.871						0.999	
Flt Protected		0.984			0.998		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1670	0	1825	1763	0	1825	1809	0
Flt Permitted		0.984			0.998		0.950			0.950		
Satd. Flow (perm)	0	1720	0	0	1670	0	1825	1763	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							3		3	3		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	6%	17%
Adj. Flow (vph)	6	0	12	1	0	21	1	507	1	26	880	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	22	0	1	508	0	26	888	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	52.1%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	11	1	0	19	1	456	1	23	792	7
Future Volume (Veh/h)	5	0	11	1	0	19	1	456	1	23	792	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	12	1	0	21	1	507	1	26	880	8
Pedestrians		3			3							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.90	0.90		0.90	0.90	0.90				0.90		
vC, conflicting volume	1469	1452	887	1457	1456	511	891			511		
vC1, stage 1 conf vol	939	939		513	513							
vC2, stage 2 conf vol	530	513		944	943							
vCu, unblocked vol	1466	1447	887	1452	1451	405	891			406		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	97	100	100	96	100			98		
cM capacity (veh/h)	270	293	345	267	294	586	767			1049		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	18	22	1	508	26	888
Volume Left	6	1	1	0	26	0
Volume Right	12	21	0	1	0	8
cSH	316	556	767	1700	1049	1700
Volume to Capacity	0.06	0.04	0.00	0.30	0.02	0.52
Queue Length 95th (m)	1.4	0.9	0.0	0.0	0.6	0.0
Control Delay (s/veh)	17.1	11.7	9.7	0.0	8.5	0.0
Lane LOS	C	B	A		A	
Approach Delay (s/veh)	17.1	11.7	0.0		0.2	
Approach LOS	C	B				

Intersection Summary					
Average Delay	0.5				
Intersection Capacity Utilization	52.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	51	9	15	35	9
Future Volume (vph)	17	51	9	15	35	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.898		0.914			
Flt Protected	0.988					0.962
Satd. Flow (prot)	1604	0	1676	0	0	1848
Flt Permitted	0.988					0.962
Satd. Flow (perm)	1604	0	1676	0	0	1848
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	1	1		23	23	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	5%	13%	0%	0%	0%
Adj. Flow (vph)	21	64	11	19	44	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	30	0	0	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	51	9	15	35	9
Future Volume (Veh/h)	17	51	9	15	35	9
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	21	64	11	19	44	11
Pedestrians	23		1			1
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	2		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	144	45			53	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144	45			53	
tC, single (s)	6.5	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.3			2.2	
p0 queue free %	97	94			97	
cM capacity (veh/h)	788	993			1530	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	85	30	55
Volume Left	21	0	44
Volume Right	64	19	0
cSH	933	1700	1530
Volume to Capacity	0.09	0.02	0.03
Queue Length 95th (m)	2.3	0.0	0.7
Control Delay (s/veh)	9.2	0.0	6.0
Lane LOS	A		A
Approach Delay (s/veh)	9.2	0.0	6.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	20.2%	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)	14	584	7	12	457	16	1	2	5	5	4	11
Future Volume (vph)	14	584	7	12	457	16	1	2	5	5	4	11
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			0.996			0.910			0.927	
Flt Protected		0.999			0.999			0.994			0.988	
Satd. Flow (prot)	0	1821	0	0	1801	0	0	1360	0	0	1611	0
Flt Permitted		0.999			0.999			0.994			0.988	
Satd. Flow (perm)	0	1821	0	0	1801	0	0	1360	0	0	1611	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	16	664	8	14	519	18	1	2	6	6	5	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	688	0	0	551	0	0	9	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	49.2%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	584	7	12	457	16	1	2	5	5	4	11
Future Volume (Veh/h)	14	584	7	12	457	16	1	2	5	5	4	11
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	16	664	8	14	519	18	1	2	6	6	5	12
Pedestrians					5			2			3	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.85			0.85	0.85	0.85	0.85	0.85	
vC, conflicting volume	540			674			1273	1270	675	1271	1265	531
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	540			523			1231	1228	524	1229	1222	531
tC, single (s)	4.1			4.2			7.1	7.0	6.4	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.4	3.5	3.5	4.0	3.5
p0 queue free %	98			98			99	98	99	95	97	98
cM capacity (veh/h)	1036			847			122	118	429	124	148	518

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	688	551	9	23
Volume Left	16	14	1	6
Volume Right	8	18	6	12
cSH	1036	847	229	218
Volume to Capacity	0.02	0.02	0.04	0.11
Queue Length 95th (m)	0.4	0.4	0.9	2.7
Control Delay (s/veh)	0.4	0.5	21.3	23.4
Lane LOS	A	A	C	C
Approach Delay (s/veh)	0.4	0.5	21.3	23.4
Approach LOS			C	C

Intersection Summary					
Average Delay	1.0				
Intersection Capacity Utilization	49.2%	ICU Level of Service		A	
Analysis Period (min)	15				



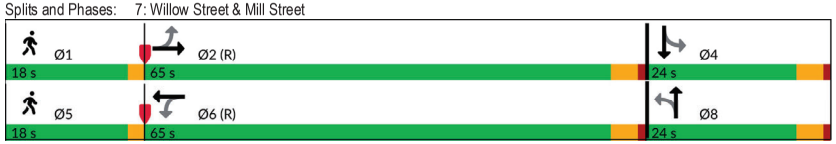
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	584	7	12	457	16	1	2	5	5	4	11
Future Volume (vph)	14	584	7	12	457	16	1	2	5	5	4	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			1.00	
Frt		0.998			0.996			0.910			0.927	
Flt Protected		0.999			0.999			0.994			0.988	
Satd. Flow (prot)	0	1820	0	0	1799	0	0	1329	0	0	1611	0
Flt Permitted		0.984			0.980			0.986			0.957	
Satd. Flow (perm)	0	1793	0	0	1765	0	0	1318	0	0	1555	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			3			6			13	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Adj. Flow (vph)	16	664	8	14	519	18	1	2	6	6	5	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	688	0	0	551	0	0	9	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.68			0.55			0.04			0.08	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		20.6			17.2			25.4			23.9	
Queue Delay		52.0			0.0			0.0			0.0	
Total Delay (s/veh)		72.6			17.2			25.4			23.9	
LOS		E			B			C			C	
Approach Delay (s/veh)		72.6			17.2			25.4			23.9	
Approach LOS		E			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 25 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay (s/veh): 47.4		Intersection LOS: D	
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	688	551	9	24
v/c Ratio	0.68	0.55	0.04	0.08
Control Delay (s/veh)	20.6	17.2	25.4	23.9
Queue Delay	52.0	0.0	0.0	0.0
Total Delay (s/veh)	72.6	17.2	25.4	23.9
Queue Length 50th (m)	95.4	68.1	0.5	1.9
Queue Length 95th (m)	130.6	94.7	4.8	8.7
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1014	999	245	294
Starvation Cap Reductn	392	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.11	0.55	0.04	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	584	7	12	457	16	1	2	5	5	4	11
Future Volume (vph)	14	584	7	12	457	16	1	2	5	5	4	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.98			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		1.00			1.00			0.91			0.93	
Flt Protected		1.00			1.00			0.99			0.99	
Satd. Flow (prot)		1820			1798			1329			1604	
Flt Permitted		0.98			0.98			0.99			0.96	
Satd. Flow (perm)		1794			1764			1318			1555	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	16	664	8	14	519	18	1	2	6	6	5	12
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	11	0
Lane Group Flow (vph)	0	688	0	0	550	0	0	4	0	0	13	0
Confl. Peds. (#/hr)	3		2	2		3			5	5		
Heavy Vehicles (%)	0%	5%	33%	10%	6%	7%	0%	50%	25%	0%	0%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1014			997			240			283	
v/s Ratio Prot												
v/s Ratio Perm		c0.38			0.31			0.00			c0.01	
v/c Ratio		0.68			0.55			0.02			0.05	
Uniform Delay, d1		16.4			14.7			35.9			36.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.6			2.2			0.1			0.3	
Delay (s)		20.0			16.9			36.0			36.4	
Level of Service		C			B			D			D	
Approach Delay (s/veh)		20.0			16.9			36.0			36.4	
Approach LOS		C			B			D			D	

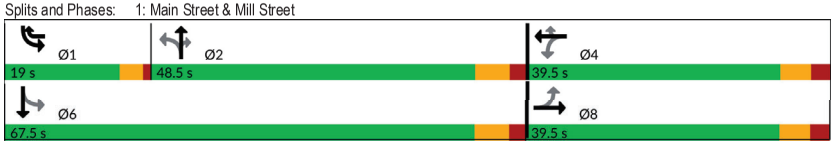
Intersection Summary				
HCM 2000 Control Delay (s/veh)	19.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	11.0	
Intersection Capacity Utilization	60.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	137	15	166	121	360	13	552	119	295	310	22
Future Volume (vph)	23	137	15	166	121	360	13	552	119	295	310	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		40.0	0.0		25.0	25.0		0.0
Storage Lanes	0		0	0		1	0		1	1		0
Taper Length (m)	2.5			2.5			2.5			25.0		
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		1.00			1.00	0.98		1.00	0.97		1.00	
Frt		0.989				0.850			0.850		0.990	
Flt Protected		0.993			0.972			0.999		0.950		
Satd. Flow (prot)	0	1802	0	0	1806	1617	0	1796	1585	1789	1780	0
Flt Permitted		0.899			0.683			0.989		0.223		
Satd. Flow (perm)	0	1631	0	0	1266	1579	0	1778	1544	420	1780	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				159			76		6	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		152.1			102.7			230.0			154.2	
Travel Time (s)		11.4			7.7			17.3			11.6	
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Adj. Flow (vph)	24	141	15	171	125	371	13	569	123	304	320	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	296	371	0	582	123	304	343	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane											Yes	
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
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Detector Phase	8	8		4	4	1	2	2	2	1	6	
Switch Phase												
Minimum Initial (s)	12.0	12.0		12.0	12.0	5.0	27.0	27.0	27.0	5.0	27.0	
Minimum Split (s)	39.5	39.5		36.5	36.5	9.0	33.5	33.5	33.5	9.0	33.5	
Total Split (s)	39.5	39.5		39.5	39.5	19.0	48.5	48.5	48.5	19.0	67.5	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	17.8%	45.3%	45.3%	45.3%	17.8%	63.1%	
Maximum Green (s)	33.0	33.0		33.0	33.0	15.0	42.0	42.0	42.0	15.0	61.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	4.5	4.5	4.5	3.0	4.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	1.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lead/Lag						Lead	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	2.0	3.0	3.0	3.0	2.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	Max	
Walk Time (s)	13.0	13.0		10.0	10.0		10.0	10.0	10.0		10.0	
Flash Don't Walk (s)	20.0	20.0		20.0	20.0		17.0	17.0	17.0		17.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0		0	
Act Effct Green (s)		27.1			27.1	41.9		44.9	44.9	63.7	61.2	
Actuated g/C Ratio		0.27			0.27	0.41		0.44	0.44	0.63	0.60	
v/c Ratio		0.41			0.88	0.49		0.74	0.17	0.71	0.32	
Control Delay (s/veh)		32.4			61.5	12.1		32.6	9.5	19.3	11.6	
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)		32.4			61.5	12.1		32.6	9.5	19.3	11.6	
LOS		C			E	B		C	A	B	B	
Approach Delay (s/veh)		32.4			34.0			28.6			15.2	
Approach LOS		C			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 101.4			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 26.6		Intersection LOS: C	
Intersection Capacity Utilization 101.8%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Main Street & Mill Street



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	180	296	371	582	123	304	343
v/c Ratio	0.41	0.88	0.49	0.74	0.17	0.71	0.32
Control Delay (s/veh)	32.4	61.5	12.1	32.6	9.5	19.3	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	61.5	12.1	32.6	9.5	19.3	11.6
Queue Length 50th (m)	28.4	55.5	25.4	97.6	5.5	26.0	31.7
Queue Length 95th (m)	47.2	#95.2	45.6	#166.2	17.7	44.3	52.8
Internal Link Dist (m)	128.1	78.7		206.0			130.2
Turn Bay Length (m)			40.0		25.0	25.0	
Base Capacity (vph)	535	413	790	787	726	467	1077
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.72	0.47	0.74	0.17	0.65	0.32

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	137	15	166	121	360	13	552	119	295	310	22
Future Volume (vph)	23	137	15	166	121	360	13	552	119	295	310	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes		1.00			1.00	0.98		1.00	0.97	1.00	1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Frt		0.99			1.00	0.85		1.00	0.85	1.00	0.99	
Flt Protected		0.99			0.97	1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802			1802	1591		1796	1545	1789	1780	
Flt Permitted		0.90			0.68	1.00		0.99	1.00	0.22	1.00	
Satd. Flow (perm)		1630			1266	1591		1778	1545	419	1780	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	24	141	15	171	125	371	13	569	123	304	320	23
RTOR Reduction (vph)	0	3	0	0	0	97	0	0	42	0	2	0
Lane Group Flow (vph)	0	177	0	0	296	274	0	582	81	304	341	0
Confl. Peds. (#/hr)	2		3	3		2	11		3	3		11
Heavy Vehicles (%)	5%	4%	8%	3%	4%	1%	0%	7%	3%	2%	7%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	
Protected Phases		8			4	1		2		1	6	
Permitted Phases	8			4		4	2		2	6		
Actuated Green, G (s)		27.1			27.1	39.4		44.9	44.9	61.2	61.2	
Effective Green, g (s)		27.1			27.1	39.4		44.9	44.9	61.2	61.2	
Actuated g/C Ratio		0.27			0.27	0.39		0.44	0.44	0.60	0.60	
Clearance Time (s)		6.5			6.5	4.0		6.5	6.5	4.0	6.5	
Vehicle Extension (s)		3.0			3.0	2.0		3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)		436			338	618		788	684	419	1075	
v/s Ratio Prot						0.05				c0.09	0.19	
v/s Ratio Perm		0.11			c0.23	0.12		0.33	0.05	c0.35		
v/c Ratio		0.41			0.88	0.44		0.74	0.12	0.73	0.32	
Uniform Delay, d1		30.5			35.5	22.9		23.3	16.6	14.2	9.8	
Progression Factor		1.00			1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.6			21.5	0.2		6.1	0.4	5.2	0.8	
Delay (s)		31.1			57.0	23.0		29.5	16.9	19.4	10.6	
Level of Service		C			E	C		C	B	B	B	
Approach Delay (s/veh)		31.1			38.1			27.3			14.7	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	101.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	602	1	7	654	8	2	2	7	20	0	6
Future Volume (vph)	10	602	1	7	654	8	2	2	7	20	0	6
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			0.914			0.970	
Flt Protected		0.999						0.991			0.963	
Satd. Flow (prot)	0	1858	0	0	1863	0	0	1595	0	0	1795	0
Flt Permitted		0.999						0.991			0.963	
Satd. Flow (perm)	0	1858	0	0	1863	0	0	1595	0	0	1795	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		282.0			237.2			96.7			99.6	
Travel Time (s)		21.2			17.8			7.3			7.5	
Confl. Peds. (#/hr)	14		5	5		14			1	1		
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 (%)	20%	3%	0%	0%	3%	0%	50%	0%	0%	0%	0%	0%
Adj. Flow (vph)	11	640	1	7	696	9	2	2	7	21	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	652	0	0	712	0	0	11	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	50.1%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	602	1	7	654	8	2	2	7	20	0	6
Future Volume (Veh/h)	10	602	1	7	654	8	2	2	7	20	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	11	640	1	7	696	9	2	2	7	21	0	6
Pedestrians					1			5			14	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		385										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	719			646			1388	1401	647	1400	1397	715
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	719			634			1386	1399	634	1399	1395	715
tC, single (s)	4.3			4.1			7.6	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			4.0	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			98	99	99	81	100	99
cM capacity (veh/h)	794			941			89	134	473	109	135	428

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	652	712	11	27
Volume Left	11	7	2	21
Volume Right	1	9	7	6
cSH	794	941	211	131
Volume to Capacity	0.01	0.01	0.05	0.21
Queue Length 95th (m)	0.3	0.2	1.2	5.6
Control Delay (s/veh)	0.4	0.2	23.0	39.4
Lane LOS	A	A	C	E
Approach Delay (s/veh)	0.4	0.2	23.0	39.4
Approach LOS			C	E

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	50.1%	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)	1	604	15	59	678	67	9	0	27	18	0	2
Future Volume (vph)	1	604	15	59	678	67	9	0	27	18	0	2
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			0.989			0.899			0.988	
Flt Protected					0.996			0.988			0.957	
Satd. Flow (prot)	0	1861	0	0	1846	0	0	1706	0	0	1816	0
Flt Permitted					0.996			0.988			0.957	
Satd. Flow (perm)	0	1861	0	0	1846	0	0	1706	0	0	1816	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		237.2			82.4			66.0			110.6	
Travel Time (s)		17.8			6.2			5.0			8.3	
Confl. Peds. (#/hr)	26		4	4		26	2					2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	1	671	17	66	753	74	10	0	30	20	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	689	0	0	893	0	0	40	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			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	604	15	59	678	67	9	0	27	18	0	2
Future Volume (Veh/h)	1	604	15	59	678	67	9	0	27	18	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	671	17	66	753	74	10	0	30	20	0	2
Pedestrians		2						4			26	
Lane Width (m)		3.7						3.7			3.7	
Walking Speed (m/s)		1.1						1.1			1.1	
Percent Blockage		0						0			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	853			692			1612	1671	684	1660	1642	818
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	853			692			1612	1671	684	1660	1642	818
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			87	100	93	70	100	99
cM capacity (veh/h)	775			909			77	87	451	66	91	369

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	689	893	40	22
Volume Left	1	66	10	20
Volume Right	17	74	30	2
cSH	775	909	204	71
Volume to Capacity	0.00	0.07	0.20	0.31
Queue Length 95th (m)	0.0	1.8	5.4	8.6
Control Delay (s/veh)	0.0	1.9	26.9	76.7
Lane LOS	A	A	D	F
Approach Delay (s/veh)	0.0	1.9	26.9	76.7
Approach LOS			D	F

Intersection Summary					
Average Delay	2.7				
Intersection Capacity Utilization	90.0%	ICU Level of Service		E	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	26	20	1	66	3	7	8	1	2	4	7
Future Volume (vph)	8	26	20	1	66	3	7	8	1	2	4	7
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		0.949			0.996			0.993			0.923	
Flt Protected		0.994			0.999			0.977			0.993	
Satd. Flow (prot)	0	1808	0	0	1840	0	0	1846	0	0	1726	0
Flt Permitted		0.994			0.999			0.977			0.993	
Satd. Flow (perm)	0	1808	0	0	1840	0	0	1846	0	0	1726	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		276.6			95.4			99.6			71.6	
Travel Time (s)		20.7			7.2			7.5			5.4	
Confl. Peds. (#/hr)			8	8								
Peak Hour Factor	0.92	0.74	0.74	0.74	0.74	0.92	0.74	0.92	0.74	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	4%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	9	35	27	1	89	3	9	9	1	2	4	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	93	0	0	19	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary				
Area Type:	Other			
Control Type: Unsignalized				
Intersection Capacity Utilization	19.3%	ICU Level of Service A		
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	26	20	1	66	3	7	8	1	2	4	7
Future Volume (Veh/h)	8	26	20	1	66	3	7	8	1	2	4	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.74	0.74	0.74	0.74	0.92	0.74	0.92	0.74	0.92	0.92	0.92
Hourly flow rate (vph)	9	35	27	1	89	3	9	9	1	2	4	8
Pedestrians								8				
Lane Width (m)								3.7				
Walking Speed (m/s)								1.1				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	92			70			177	169	57	165	181	91
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	92			70			177	169	57	165	181	91
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	99	100	100	99	99
cM capacity (veh/h)	1503			1531			765	714	1008	783	703	967

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	93	19	14
Volume Left	9	1	9	2
Volume Right	27	3	1	8
cSH	1503	1531	749	848
Volume to Capacity	0.01	0.00	0.03	0.02
Queue Length 95th (m)	0.1	0.0	0.6	0.4
Control Delay (s/veh)	1.0	0.1	9.9	9.3
Lane LOS	A	A	A	A
Approach Delay (s/veh)	1.0	0.1	9.9	9.3
Approach LOS			A	A

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	19.3%	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)	7	1	16	1	2	53	11	872	2	23	583	13
Future Volume (vph)	7	1	16	1	2	53	11	872	2	23	583	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	10.0		0.0	20.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	2.5			2.5			15.0			45.0		
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		0.908			0.872						0.997	
Flt Protected		0.986			0.999		0.950			0.950		
Satd. Flow (prot)	0	1720	0	0	1674	0	1825	1830	0	1825	1809	0
Flt Permitted		0.986			0.999		0.950			0.950		
Satd. Flow (perm)	0	1720	0	0	1674	0	1825	1830	0	1825	1809	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		105.1			90.4			154.2			223.3	
Travel Time (s)		7.9			6.8			11.6			16.7	
Confl. Peds. (#/hr)							16		11	11		16
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%	0%	0%	0%	0%	0%	0%	5%	0%	0%	6%	0%
Adj. Flow (vph)	7	1	17	1	2	56	12	928	2	24	620	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	59	0	12	930	0	24	634	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane								Yes				
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			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.5%	ICU Level of Service B	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	16	1	2	53	11	872	2	23	583	13
Future Volume (Veh/h)	7	1	16	1	2	53	11	872	2	23	583	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	7	1	17	1	2	56	12	928	2	24	620	14
Pedestrians		16			11							
Lane Width (m)		3.7			3.7							
Walking Speed (m/s)		1.1			1.1							
Percent Blockage		2			1							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (m)								154				
pX, platoon unblocked	0.73	0.73		0.73	0.73	0.73				0.73		
vC, conflicting volume	1700	1656	643	1650	1662	940	650			941		
vC1, stage 1 conf vol	691	691		964	964							
vC2, stage 2 conf vol	1009	965		686	698							
vCu, unblocked vol	1773	1713	643	1704	1721	735	650			736		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	96	100	99	82	99			96		
cM capacity (veh/h)	171	229	470	228	240	306	931			636		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	25	59	12	930	24	634
Volume Left	7	1	12	0	24	0
Volume Right	17	56	0	2	0	14
cSH	307	302	931	1700	636	1700
Volume to Capacity	0.08	0.20	0.01	0.55	0.04	0.37
Queue Length 95th (m)	2.0	5.4	0.3	0.0	0.9	0.0
Control Delay (s/veh)	17.8	19.8	8.9	0.0	10.9	0.0
Lane LOS	C	C	A		B	
Approach Delay (s/veh)	17.8	19.8	0.1		0.4	
Approach LOS	C	C				

Intersection Summary					
Average Delay	1.2				
Intersection Capacity Utilization	58.5%	ICU Level of Service		B	
Analysis Period (min)	15				

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	80	16	14	41	16
Future Volume (vph)	22	80	16	14	41	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.894		0.936			
Flt Protected	0.989					0.965
Satd. Flow (prot)	1672	0	1734	0	0	1729
Flt Permitted	0.989					0.965
Satd. Flow (perm)	1672	0	1734	0	0	1729
Link Speed (k/h)	48		48			48
Link Distance (m)	276.6		95.0			53.8
Travel Time (s)	20.7		7.1			4.0
Confl. Peds. (#/hr)	8	3		49	49	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	2%	7%	0%	10%	0%
Adj. Flow (vph)	28	101	20	18	52	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	38	0	0	72
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	25.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	80	16	14	41	16
Future Volume (Veh/h)	22	80	16	14	41	16
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	28	101	20	18	52	20
Pedestrians	49		8			3
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.1		1.1			1.1
Percent Blockage	5		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	210	81			87	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210	81			87	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	96	89			96	
cM capacity (veh/h)	712	929			1390	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	129	38	72
Volume Left	28	0	52
Volume Right	101	18	0
cSH	871	1700	1390
Volume to Capacity	0.15	0.02	0.04
Queue Length 95th (m)	3.9	0.0	0.9
Control Delay (s/veh)	9.8	0.0	5.6
Lane LOS	A		A
Approach Delay (s/veh)	9.8	0.0	5.6
Approach LOS	A		

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	25.2%	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)	9	571	8	13	584	13	6	4	12	15	0	21
Future Volume (vph)	9	571	8	13	584	13	6	4	12	15	0	21
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			0.997			0.924			0.922	
Flt Protected		0.999			0.999			0.987			0.979	
Satd. Flow (prot)	0	1807	0	0	1843	0	0	1657	0	0	1734	0
Flt Permitted		0.999			0.999			0.987			0.979	
Satd. Flow (perm)	0	1807	0	0	1843	0	0	1657	0	0	1734	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	9	595	8	14	608	14	6	4	13	16	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	612	0	0	636	0	0	23	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.5%	ICU Level of Service B	
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	571	8	13	584	13	6	4	12	15	0	21
Future Volume (Veh/h)	9	571	8	13	584	13	6	4	12	15	0	21
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	9	595	8	14	608	14	6	4	12	16	0	22
Pedestrians					33			19			35	
Lane Width (m)					3.7			3.7			3.7	
Walking Speed (m/s)					1.1			1.1			1.1	
Percent Blockage					3			2			3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		103										
pX, platoon unblocked				0.86			0.86	0.86	0.86	0.86	0.86	
vC, conflicting volume	657			622			1301	1321	651	1342	1318	650
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	657			484			1270	1293	518	1317	1289	650
tC, single (s)	4.1			4.1			7.1	6.8	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.3	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	96	97	84	100	95
cM capacity (veh/h)	908			924			111	113	461	98	132	457

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	612	636	22	38
Volume Left	9	14	6	16
Volume Right	8	14	12	22
cSH	908	924	191	180
Volume to Capacity	0.01	0.02	0.12	0.21
Queue Length 95th (m)	0.2	0.4	2.9	5.9
Control Delay (s/veh)	0.3	0.4	26.3	30.3
Lane LOS	A	A	D	D
Approach Delay (s/veh)	0.3	0.4	26.3	30.3
Approach LOS			D	D

Intersection Summary					
Average Delay	1.6				
Intersection Capacity Utilization	55.5%	ICU Level of Service		B	
Analysis Period (min)	15				



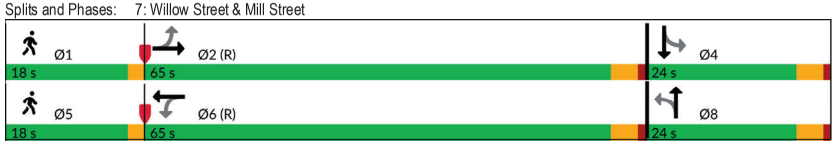
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	571	8	13	584	13	6	4	12	15	0	21
Future Volume (vph)	9	571	8	13	584	13	6	4	12	15	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.93			0.96	
Frt		0.998			0.997			0.924			0.922	
Flt Protected		0.999			0.999			0.987			0.979	
Satd. Flow (prot)	0	1805	0	0	1838	0	0	1548	0	0	1734	0
Flt Permitted		0.991			0.984			0.951			0.905	
Satd. Flow (perm)	0	1790	0	0	1810	0	0	1492	0	0	1539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			2			13			36	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		102.7			282.0			97.9			95.0	
Travel Time (s)		7.7			21.2			7.3			7.1	
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Adj. Flow (vph)	9	595	8	14	608	14	6	4	13	16	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	612	0	0	636	0	0	23	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
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
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	65.0	65.0		65.0	65.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.7%	60.7%		60.7%	60.7%		22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	60.5	60.5		60.5	60.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
v/c Ratio		0.60			0.62			0.08			0.12	

Lane Group	Ø1	Ø5
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (k/h)		
Link Distance (m)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(m)		
Link Offset(m)		
Crosswalk Width(m)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (k/h)		
Turn Type		
Protected Phases	1	5
Permitted Phases		
Minimum Split (s)	9.5	9.5
Total Split (s)	18.0	18.0
Total Split (%)	17%	17%
Maximum Green (s)	16.0	16.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Walk Time (s)		
Flash Don't Walk (s)		
Pedestrian Calls (#/hr)		
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay (s/veh)		18.5			18.9			23.8			14.0	
Queue Delay		29.9			0.0			0.0			0.0	
Total Delay (s/veh)		48.4			18.9			23.8			14.0	
LOS		D			B			C			B	
Approach Delay (s/veh)		48.4			18.9			23.8			14.0	
Approach LOS		D			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 107			
Actuated Cycle Length: 107			
Offset: 22.5 (21%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 32.6		Intersection LOS: C	
Intersection Capacity Utilization 61.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 7: Willow Street & Mill Street



Lane Group	Ø1	Ø5
Control Delay (s/veh)		
Queue Delay		
Total Delay (s/veh)		
LOS		
Approach Delay (s/veh)		
Approach LOS		

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	612	636	23	38
v/c Ratio	0.60	0.62	0.08	0.12
Control Delay (s/veh)	18.5	18.9	23.8	14.0
Queue Delay	29.9	0.0	0.0	0.0
Total Delay (s/veh)	48.4	18.9	23.8	14.0
Queue Length 50th (m)	79.4	83.7	1.7	0.4
Queue Length 95th (m)	113.7	119.3	8.7	9.1
Internal Link Dist (m)	78.7	258.0	73.9	71.0
Turn Bay Length (m)				
Base Capacity (vph)	1012	1024	282	309
Starvation Cap Reductn	422	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.04	0.62	0.08	0.12

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	571	8	13	584	13	6	4	12	15	0	21
Future Volume (vph)	9	571	8	13	584	13	6	4	12	15	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			0.93			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			0.96	
Frt		1.00			1.00			0.92			0.92	
Flt Protected		1.00			1.00			0.99			0.98	
Satd. Flow (prot)		1805			1837			1548			1665	
Flt Permitted		0.99			0.98			0.95			0.90	
Satd. Flow (perm)		1790			1811			1491			1538	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	9	595	8	14	608	14	6	4	12	16	0	22
RTOR Reduction (vph)	0	0	0	0	1	0	0	11	0	0	29	0
Lane Group Flow (vph)	0	612	0	0	635	0	0	12	0	0	9	0
Confl. Peds. (#/hr)	35		19	19		35			33	33		
Heavy Vehicles (%)	0%	6%	14%	0%	4%	0%	0%	33%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		60.5			60.5			19.5			19.5	
Effective Green, g (s)		60.5			60.5			19.5			19.5	
Actuated g/C Ratio		0.57			0.57			0.18			0.18	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Lane Grp Cap (vph)		1012			1023			271			280	
v/s Ratio Prot												
v/s Ratio Perm		0.34			c0.35			c0.01			0.01	
v/c Ratio		0.60			0.62			0.05			0.03	
Uniform Delay, d1		15.3			15.6			36.1			36.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.7			2.8			0.3			0.2	
Delay (s)		18.0			18.4			36.4			36.2	
Level of Service		B			B			D			D	
Approach Delay (s/veh)		18.0			18.4			36.4			36.2	
Approach LOS		B			B			D			D	

Intersection Summary					
HCM 2000 Control Delay (s/veh)	19.1	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.40				
Actuated Cycle Length (s)	107.0	Sum of lost time (s)		11.0	
Intersection Capacity Utilization	61.3%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Appendix G

Site Photos



Looking to the site from the west (intersection of Alice Street and Bower Street)

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Appendix G



Looking to the site from the east (approximately 140 m east of the subject site)



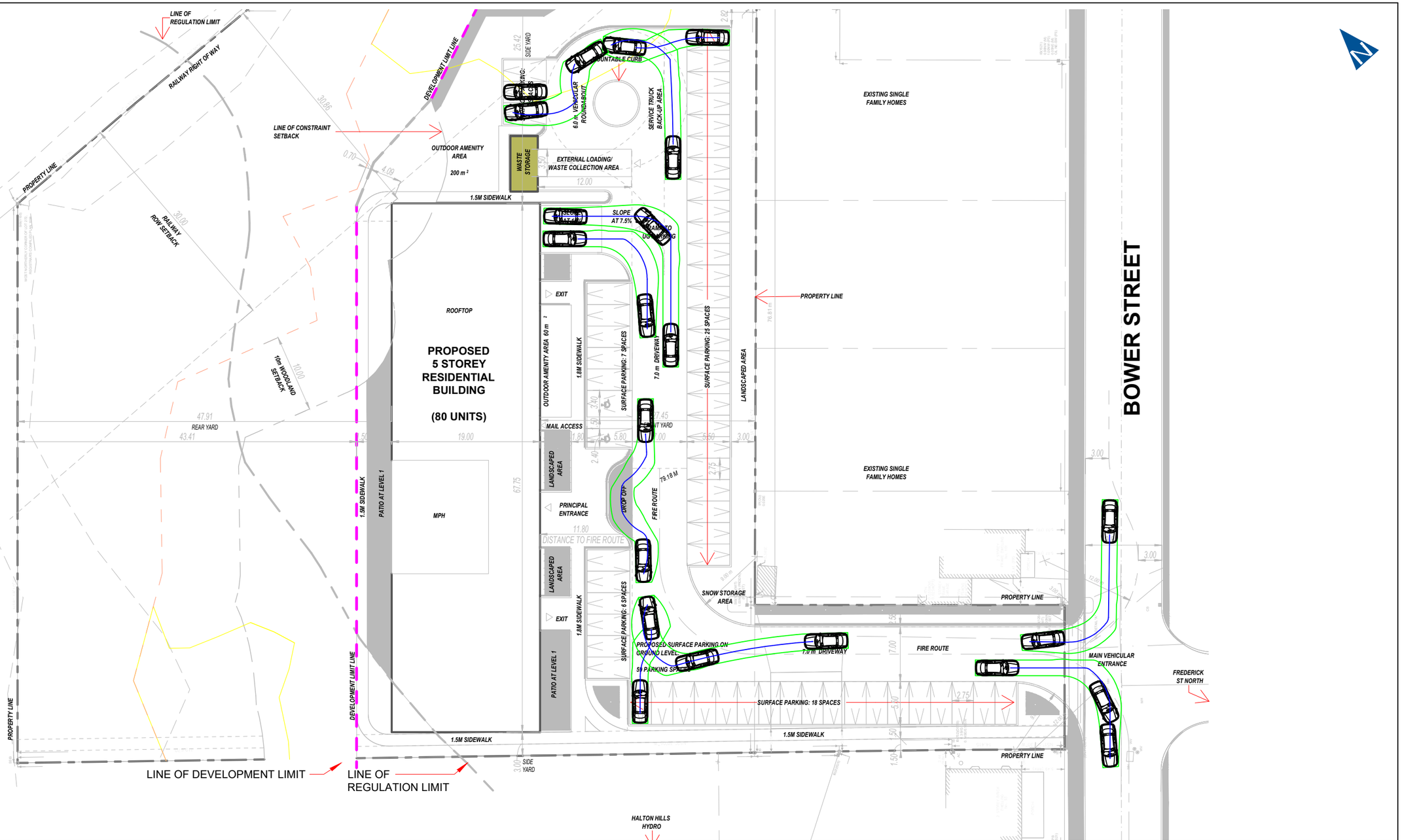
Looking from the site to the west



Looking from the site to the east

Appendix H

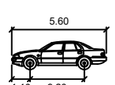
AutoTURN Vehicle Turning Diagrams



THIS AUTOTURN SWEPT PATH ANALYSIS HAS BEEN PREPARED USING BASE PLANS PROVIDED BY OTHERS. THE PRACTITIONER HAS NOT INSPECTED THE ACCURACY AND/OR THE COMPLETENESS OF THESE BASE PLANS AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



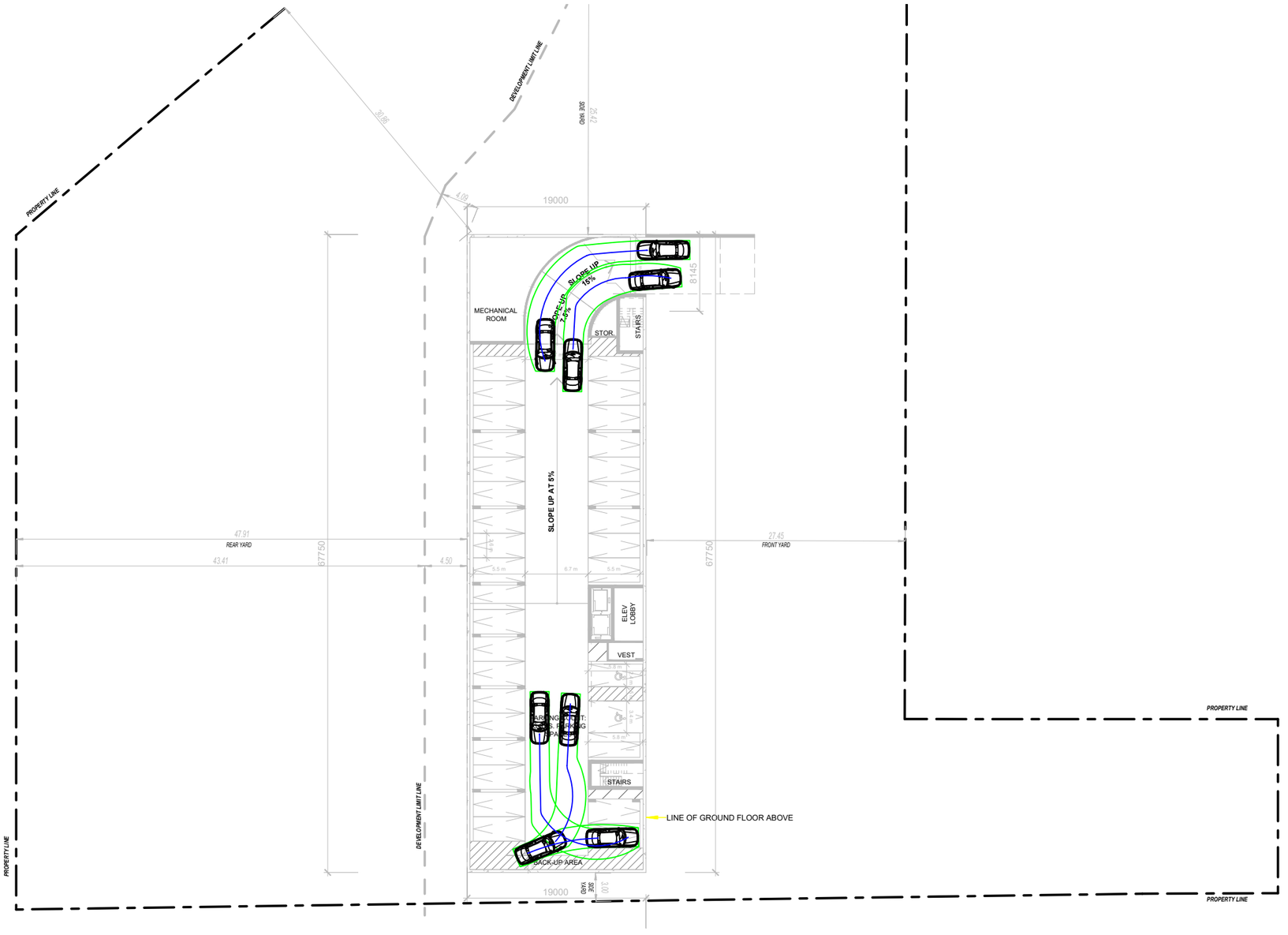
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Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

AUTOTURN ASSESSMENT
97 BOWER STREET
TOWN OF HALTON HILLS

paradigm TRANSPORTATION SOLUTIONS LIMITED

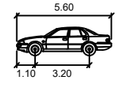
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NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



P

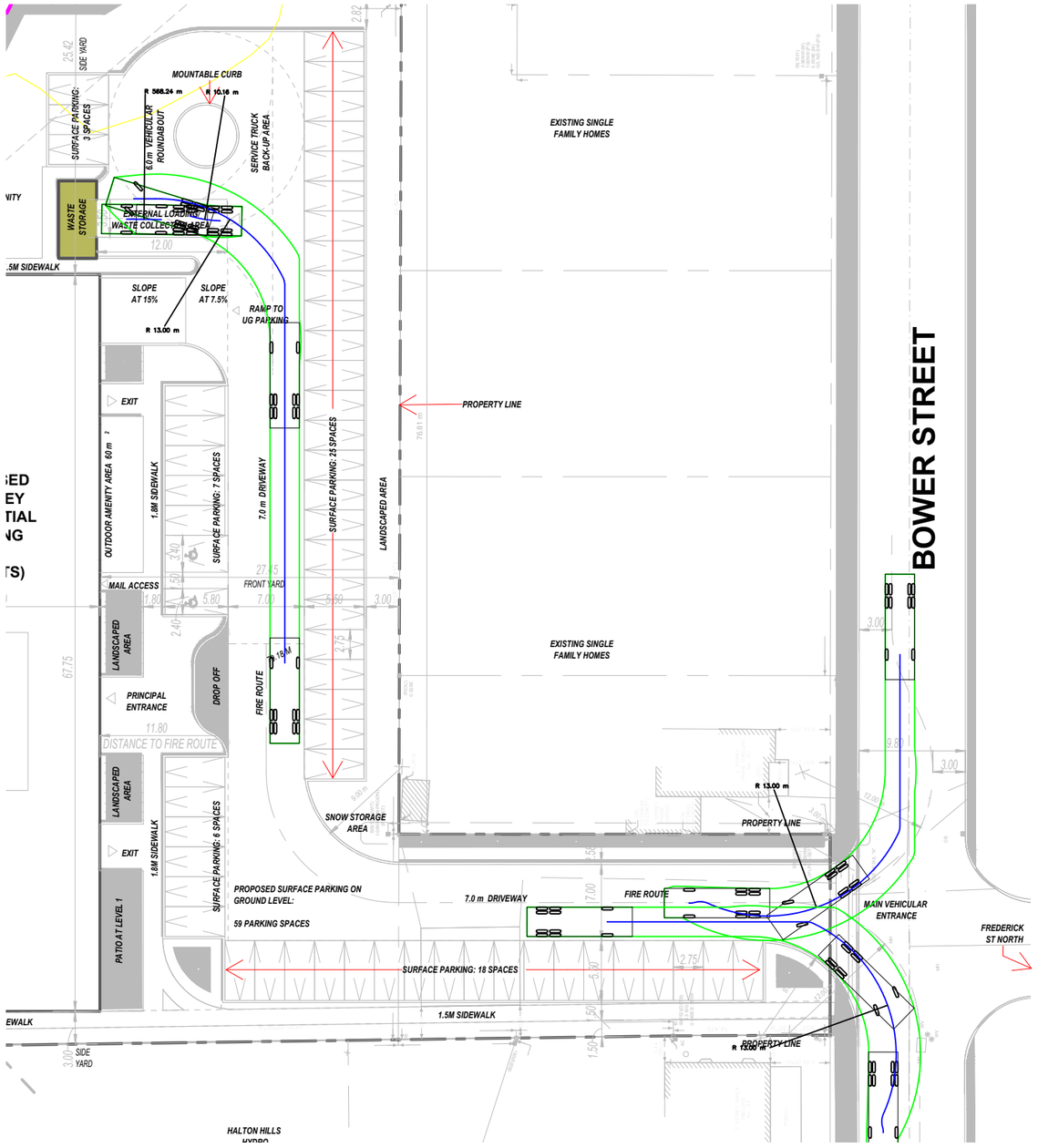
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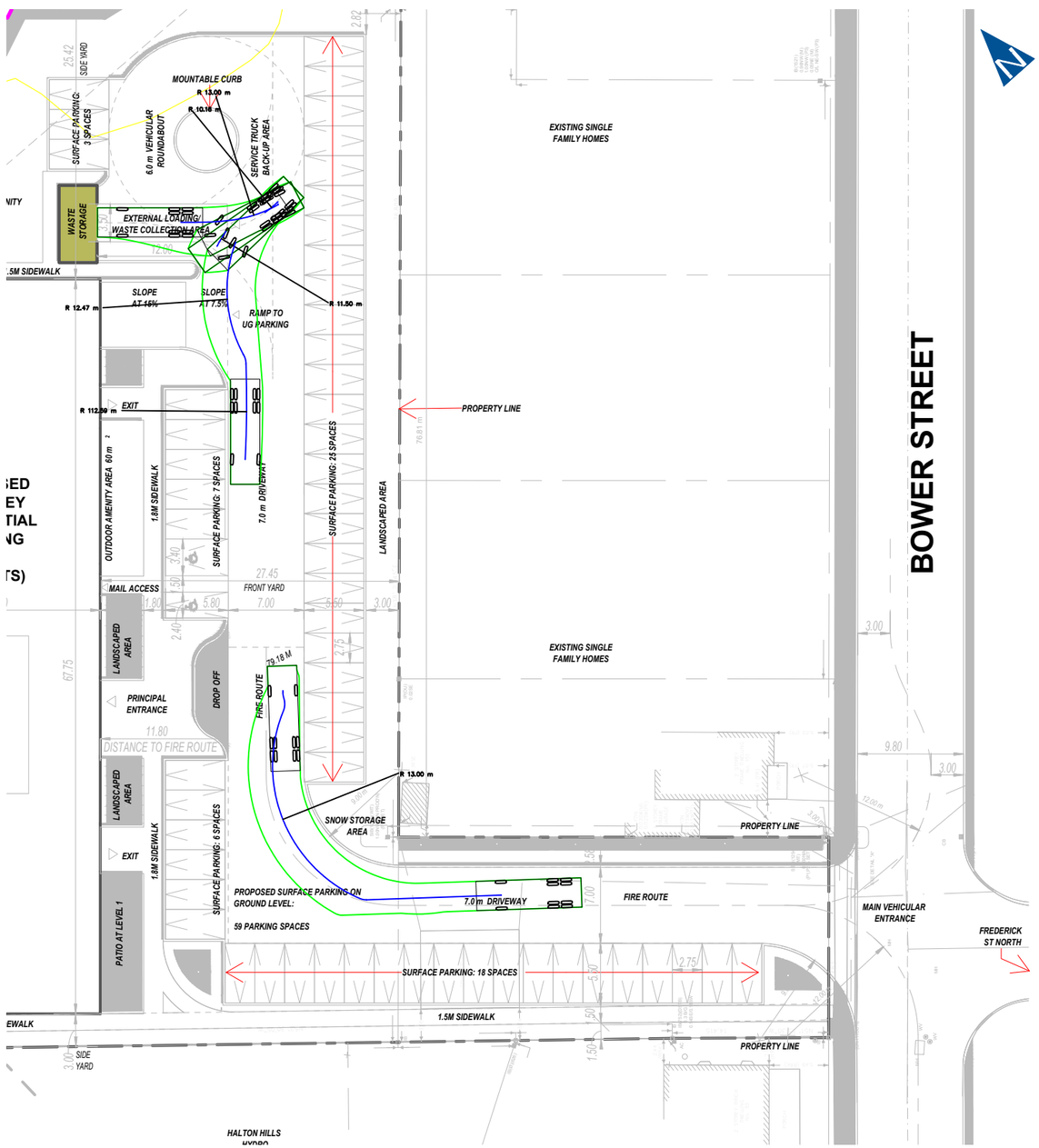
AUTOTURN ASSESSMENT
97 BOWER STREET
TOWN OF HALTON HILLS

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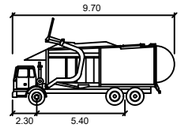
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NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



Halton Front End Loader

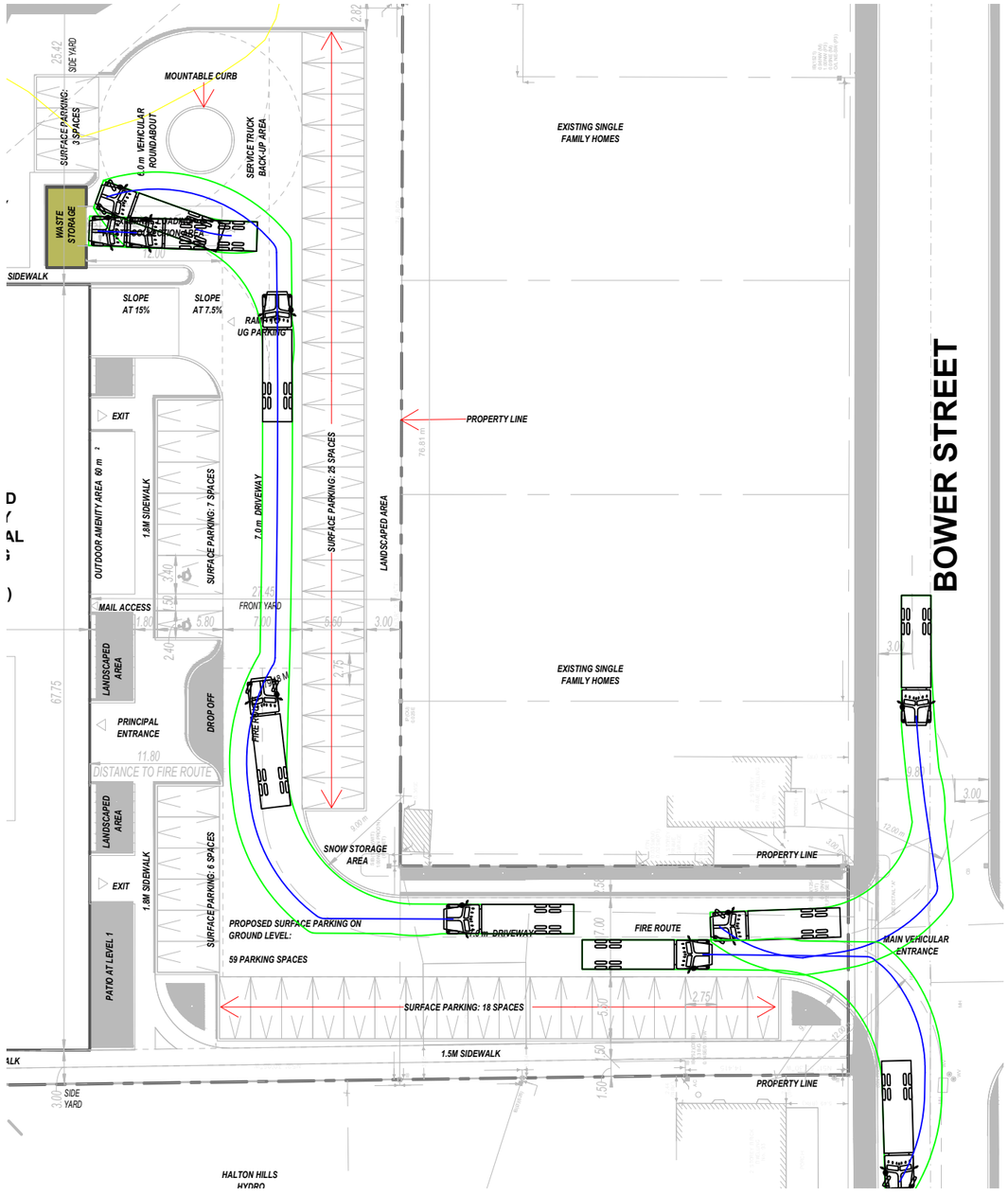
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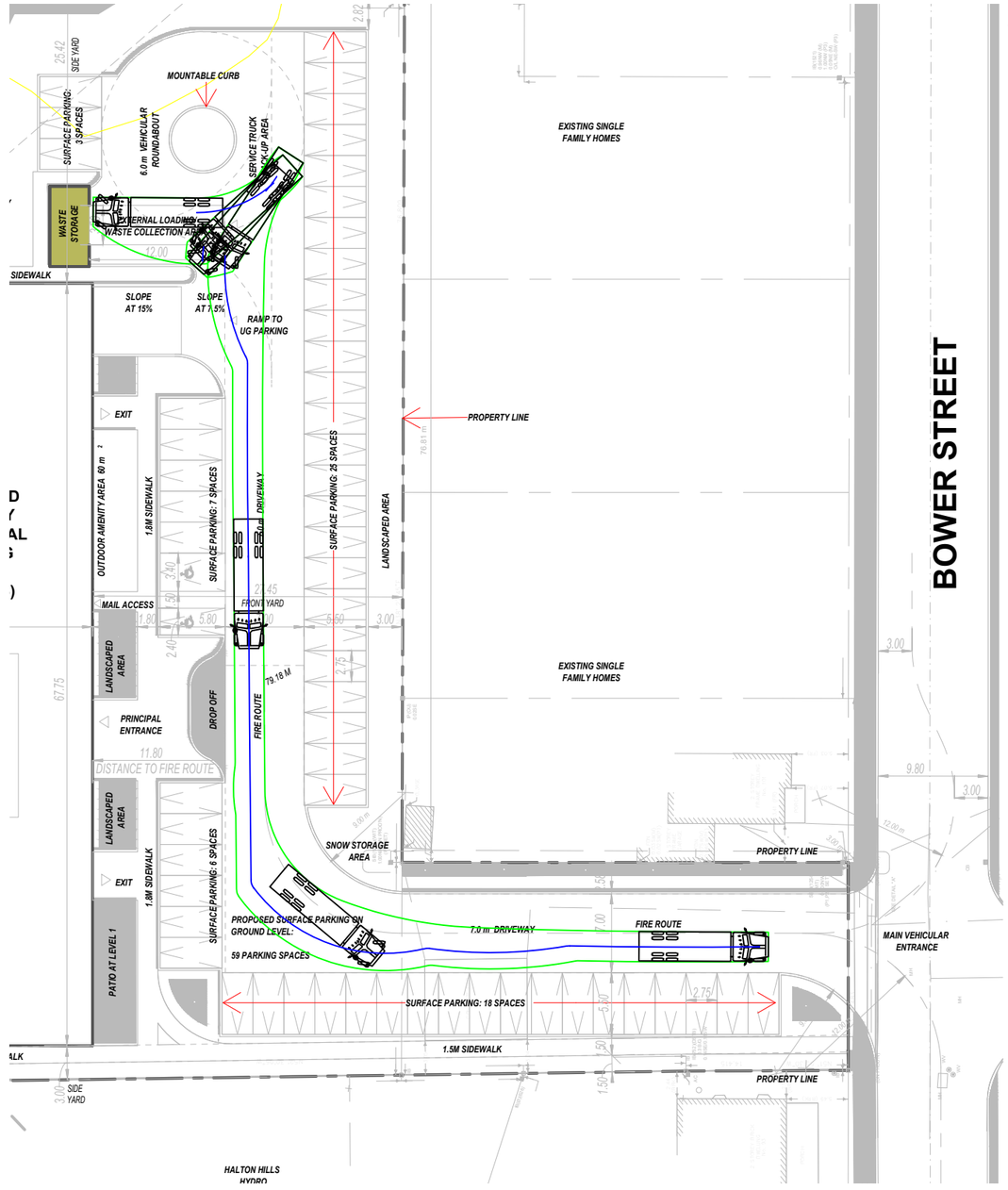
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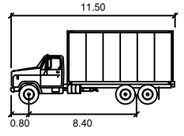
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NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



HSU

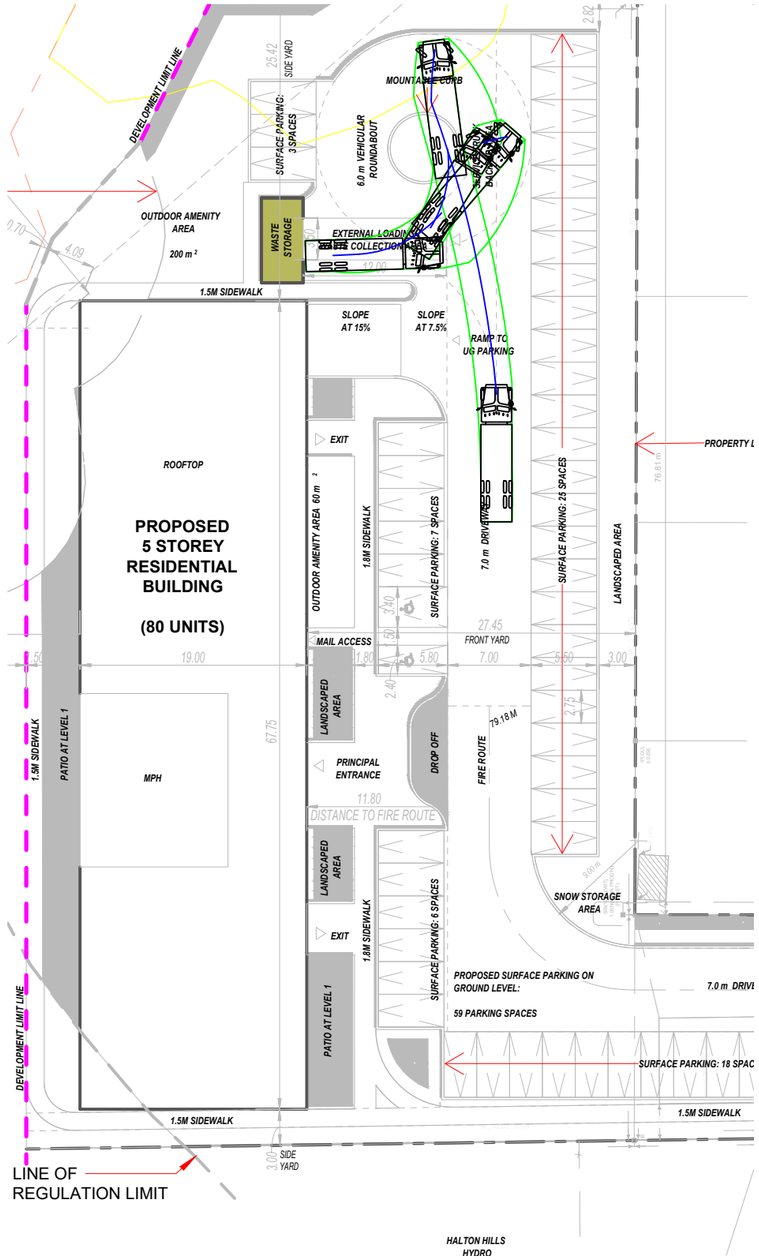
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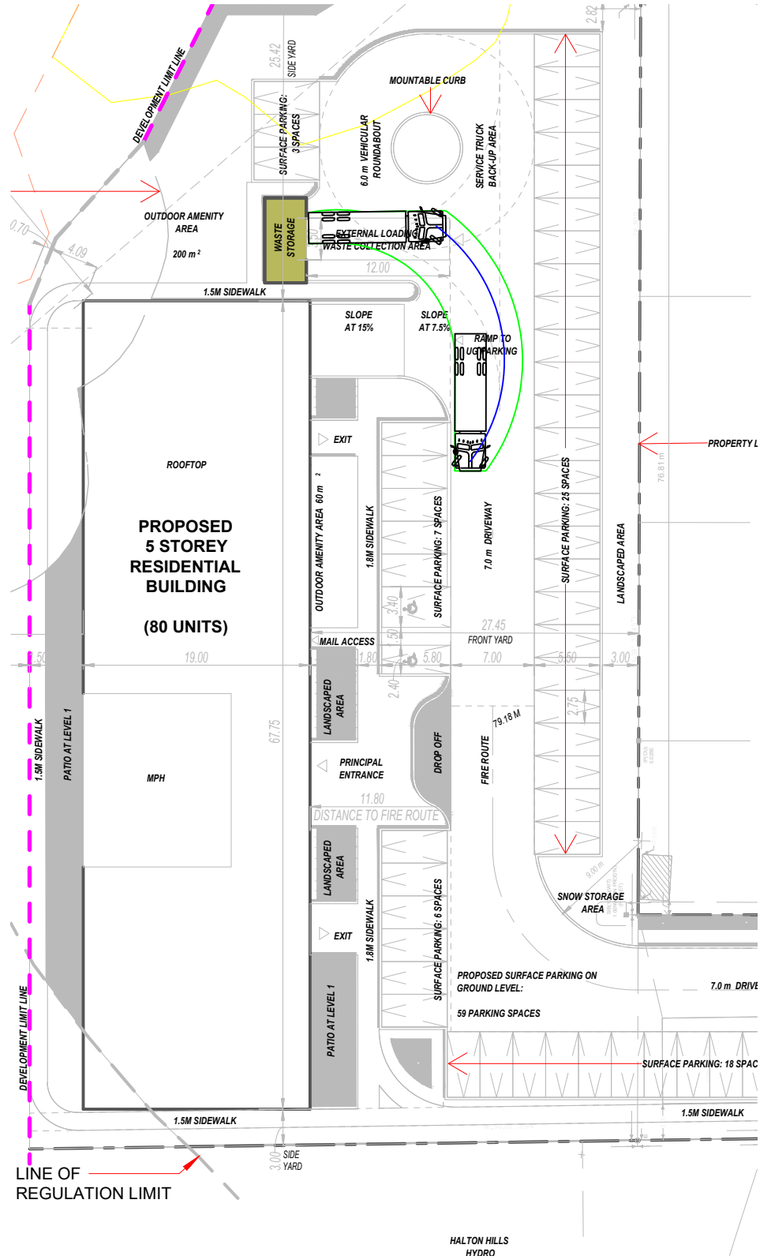
AUTOTURN ASSESSMENT
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TOWN OF HALTON HILLS

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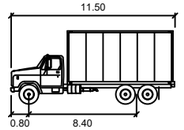
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NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



HSU

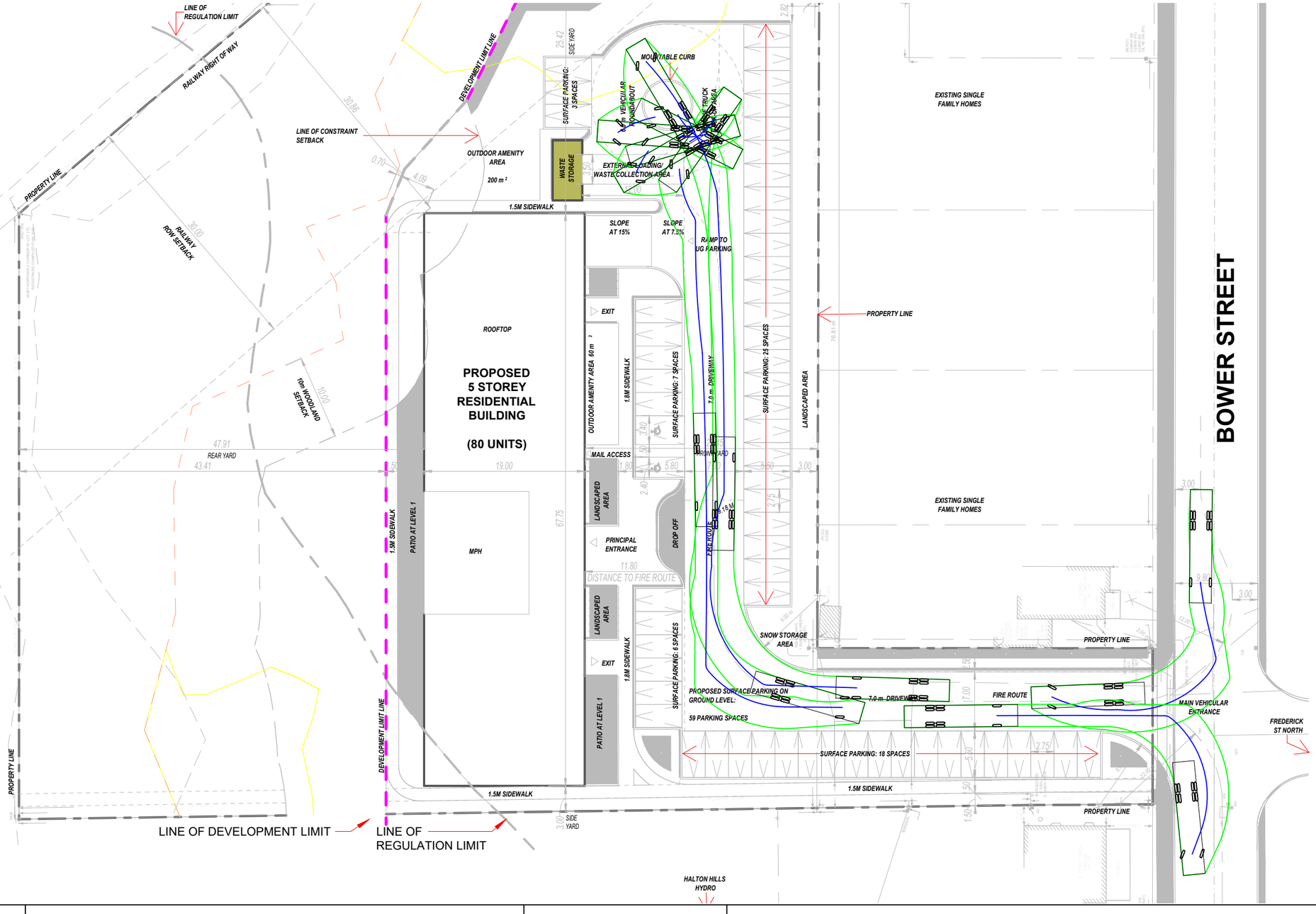
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AUTOTURN ASSESSMENT
97 BOWER STREET
TOWN OF HALTON HILLS

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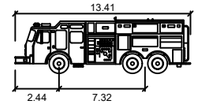
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NO.	DATE	INITIAL	REVISION DETAIL

DESIGN VEHICLE:



Pumper Fire Truck

	meters
Width	: 2.59
Track	: 2.59
Lock to Lock Time	: 6.0
Steering Angle	: 37.8

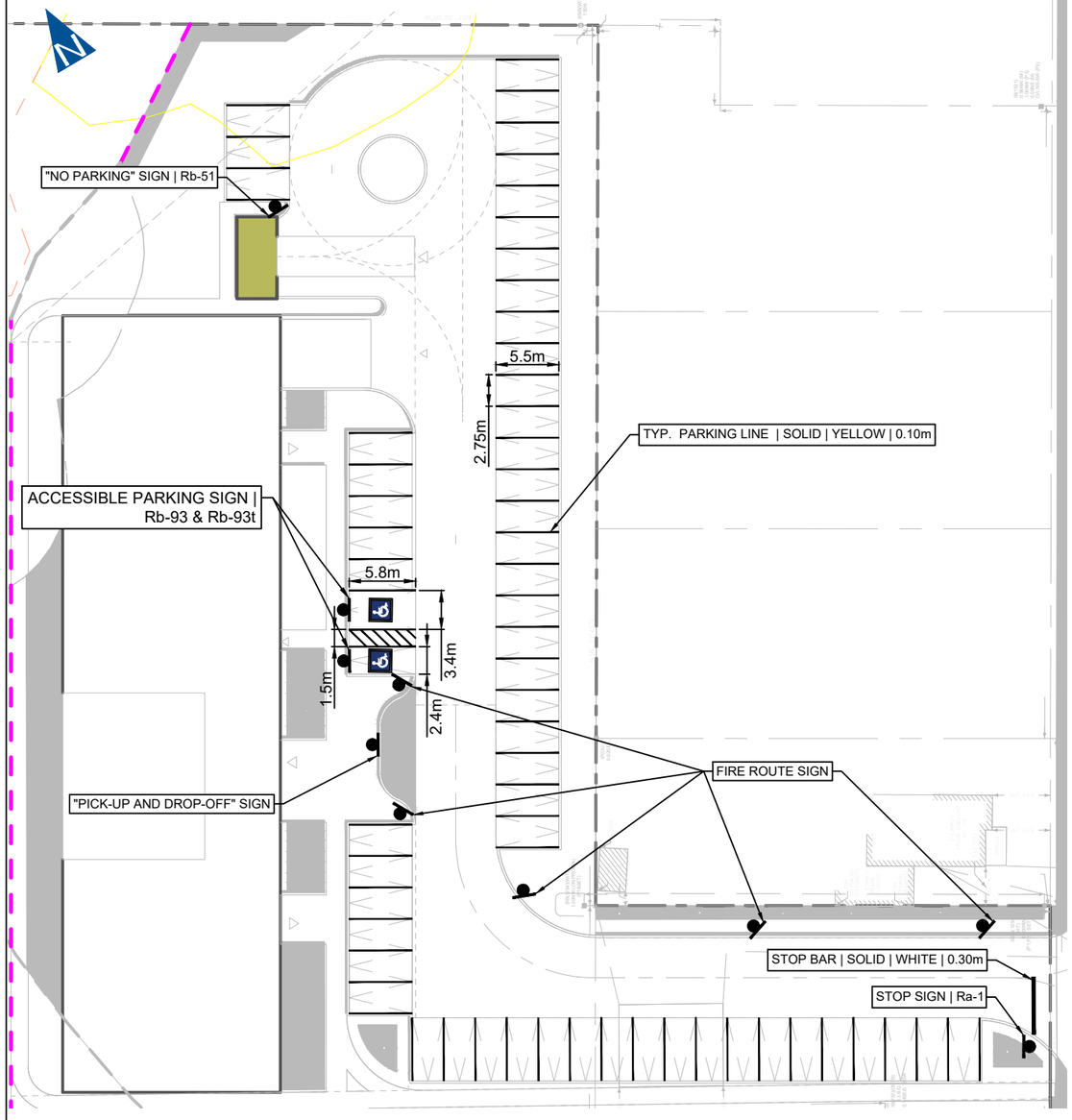
AUTOTURN ASSESSMENT
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DESIGN: WL	DRAWN: WL	CHECK: ASo	

Appendix I

Pavement Marking and Signage Plan



NOTES

EXISTING SIGN LOCATIONS TO BE CONFIRMED IN FIELD.

ONLY FIGURED DIMENSIONS ARE TO BE REFERENCED. ALL DIMENSIONS TO BE CONFIRMED IN FIELD.

ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS MUST COMPLY WITH OTM.

PAVEMENT MARKING NOTES

PROVINCIAL LEGISLATION PROVIDES THAT MARKINGS MAY BE PLACED BY THE ROAD AUTHORITY HAVING JURISDICTION FOR THE PURPOSE OF REGULATING, WARNING OR GUIDING TRAFFIC (SECTION 182 OF THE HIGHWAY TRAFFIC ACT (R.S.O. 1990)).

PAVEMENT AND CURB MARKINGS, BEING EXCLUSIVELY WITHIN THE BOUNDARIES OF PUBLIC HIGHWAYS, SHOULD ONLY BE PLACED BY THE ROAD AUTHORITY. DELINEATORS AND OBJECT MARKERS THAT ARE WITHIN THE HIGHWAY RIGHT-OF-WAY ARE SUBJECT TO THE SAME JURISDICTIONAL REGULATIONS.

MARKINGS AND DELINEATION SERVE AN ADVISORY OR WARNING FUNCTION, AND DO NOT HAVE LEGAL FORCE OF THEIR OWN. THEY MAY BE USED TO COMPLEMENT OTHER TRAFFIC CONTROL DEVICES ENFORCEABLE UNDER THE HTA, ITS REGULATIONS, OR A MUNICIPAL BY-LAW, BUT THEIR ENFORCEABILITY DERIVES FROM THE MAIN REGULATORY TRAFFIC CONTROL DEVICE, NOT FROM THE MARKINGS OR DELINEATION. TO AVOID POSSIBLE CONFLICT OR CONFUSION, THE MEANING OF MARKINGS AND DELINEATION SHOULD BE CHECKED AGAINST THE PREVAILING TRAFFIC LAWS AND REGULATIONS BEFORE THEY ARE INSTALLED OR REMOVED.

SIGNAGE NOTES

REGULATORY SIGNS SHALL NORMALLY BE LOCATED IN ACCORDANCE WITH SECTION 12 (SIGN POSITION) OF BOOK 1B. HOWEVER, SPECIFIC OR ADDITIONAL REQUIREMENTS FOR CERTAIN REGULATORY SIGNS MAY PRE-EMPT OR REVISE DIRECTIONS OR SPECIFICATIONS PRESCRIBED UNDER THE GENERAL STANDARDS IN BOOK 1B. SUCH DEVIATIONS OR EXCEPTIONS FROM THE BOOK 1B LOCATION PRINCIPLES ARE NOTED IN THIS BOOK UNDER THE HEADING “LOCATION CRITERIA” FOR THE RESPECTIVE SIGNS TO WHICH THEY APPLY. IF FOR A GIVEN SIGN, EXCEPTIONS ARE NOT NOTED UNDER THIS HEADING, THE BOOK 1B LOCATION PRINCIPLES APPLY.

SIGNAGE POSITION NOTES

SIGNAGE SHOULD CONFORM TO ONTARIO TRAFFIC MANUAL STANDARDS WHERE POSSIBLE.

HORIZONTAL MOUNTING OFFSET

THE BASIC GUIDELINES FOR HORIZONTAL MOUNTING OFFSETS ARE AS FOLLOWS:

- URBAN OR RESIDENTIAL AREAS WITH RAISED CURBS: 30 CM TO 2 M FROM THE CURB LINE.

WHERE RESTRICTED BY PHYSICAL FEATURES SUCH AS CLIFFS, OR STRUCTURE FEATURES SUCH AS BRIDGE SUPPORTS, THE HORIZONTAL OFFSET SHOULD BE AS CLOSE AS POSSIBLE TO THE ABOVE GUIDELINES.

VERTICAL MOUNTING OFFSET

THE BASIC GUIDELINES FOR VERTICAL MOUNTING OFFSETS OF GROUND-MOUNTED SIGNS INCLUDE THE FOLLOWING:

- AREAS WITH NO PEDESTRIANS AND WITHOUT RAISED CURBS: 1.5 M TO 2.5 M FROM OUTER EDGE OF OUTER LANE TO BOTTOM OF PRINCIPAL SIGN, REGARDLESS OF WHETHER THERE IS A TAB SIGN MOUNTED BENEATH PRINCIPAL SIGN.
- AREAS WITH NO PEDESTRIANS AND WITH RAISED CURBS: 1.5 M TO 2.5 M FROM CURB LINE TO BOTTOM OF PRINCIPAL SIGN, REGARDLESS OF WHETHER THERE IS A TAB SIGN MOUNTED BENEATH PRINCIPAL SIGN.
- AREAS WITH PEDESTRIANS: 2 M TO 3 M FROM GROUND ELEVATION AT THE BASE OF THE SIGN POST TO THE BOTTOM OF THE OVERALL SIGN, INCLUDING TAB IF PRESENT.

HORIZONTAL & VERTICAL ANGLING OF SIGN FACE

GENERALLY, SIGNS MUST BE MOUNTED AT APPROXIMATELY RIGHT ANGLES TO THE DIRECTION OF TRAFFIC, FACING THE TRAFFIC THAT THEY ARE INTENDED TO ADDRESS. EXCEPTIONS TO THIS RULE INCLUDE REGULATORY PARKING CONTROL SIGNS. THESE SIGNS SHOULD BE PLACED AT AN ANGLE OF 30 TO 45 DEGREES TO THE FLOW OF TRAFFIC, AND SHOULD ALWAYS BE VISIBLE TO APPROACHING TRAFFIC.

SIGN MOUNTING

MOUNTING TO BE DETERMINED IN FIELD.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND UTILITIES IN WORKING AREA PRIOR TO CONSTRUCTION AND SHALL PROTECT THESE UTILITIES AND SERVICES TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANIES AND OWNER. DAMAGES BY THE CONTRACTOR SHALL BE RESTORED TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANY AT NO EXPENSE TO THE OWNER

SIGNAGE LEGEND

SIGN DETAIL	NAME	SIGN DETAIL	NAME	SIGN DETAIL	NAME
STOP	Ra-1 STOP SIGN 600 x 600 mm	Van Accessible	Rb-93t VAN ACCESSIBLE TAB 150 x 300 mm		Rb-51 "NO PARKING" SIGN 300 x 450 mm
BY PERMIT ONLY	Rb-93 ACCESSIBLE PARKING PERMIT SIGN 300 x 450 mm	PICK-UP AND DROP-OFF ONLY NO PARKING	"PICK-UP AND DROP-OFF" SIGN 300 x 450 mm	FIRE ROUTE	FIRE ROUTE SIGN 300 x 450 mm

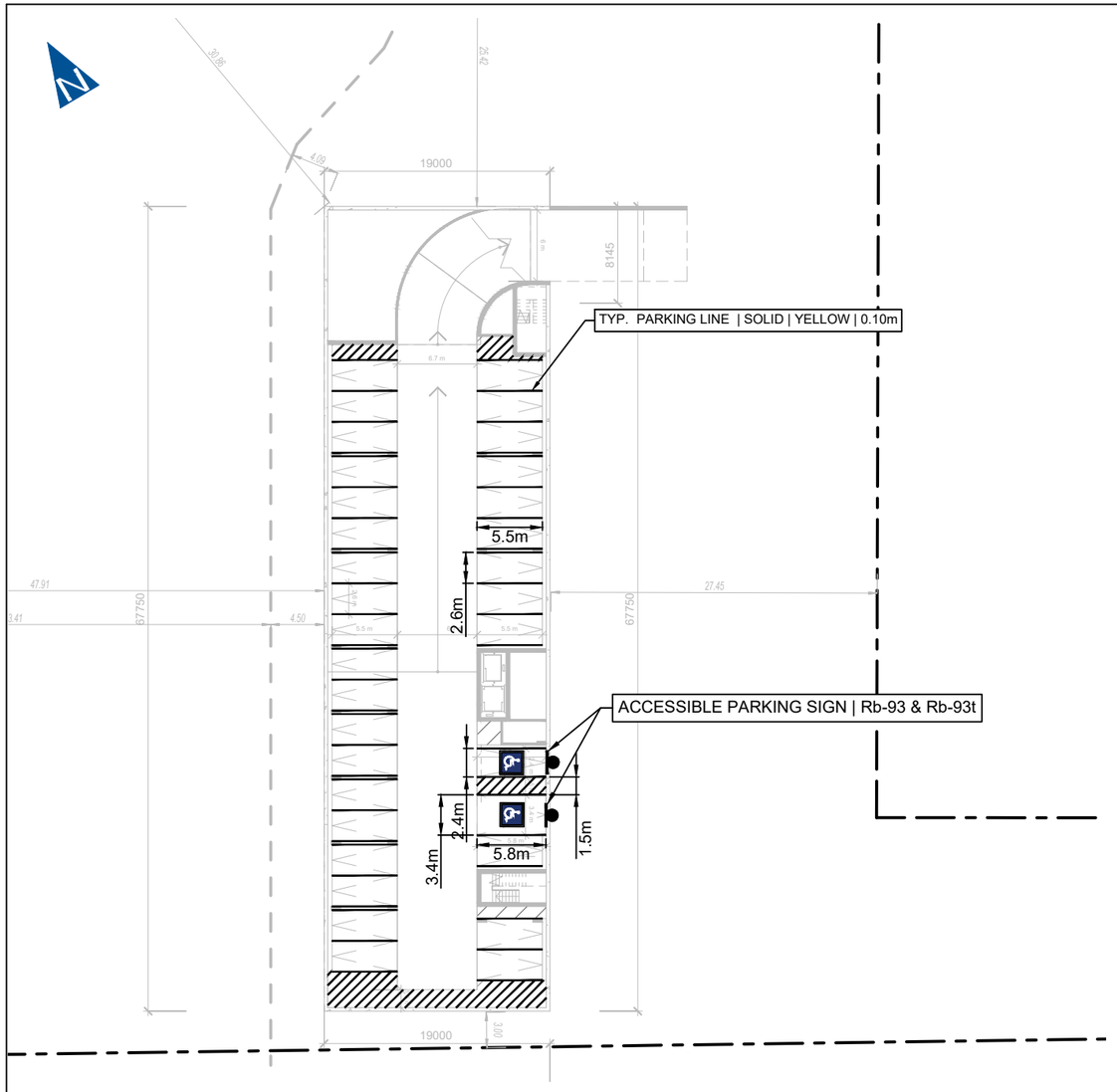
NO.	DATE	INITIAL	REVISION DETAIL

PAVEMENT MARKING AND SIGNAGE PLAN
97 BOWER STREET
TOWN OF HALTON HILLS

paradigm TRANSPORTATION SOLUTIONS LIMITED

PROJECT NO.: 240109	DATE: JULY 2025	SCALE: 1:500	DRAWING NO.:
DESIGN: WL	DRAWN: WL	CHECK: ASo	01

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SIGNAGE POSITION NOTES

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HORIZONTAL MOUNTING OFFSET

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VERTICAL MOUNTING OFFSET

THE BASIC GUIDELINES FOR VERTICAL MOUNTING OFFSETS OF GROUND-MOUNTED SIGNS INCLUDE THE FOLLOWING:

- AREAS WITH NO PEDESTRIANS AND WITHOUT RAISED CURBS: 1.5 M TO 2.5 M FROM OUTER EDGE OF OUTER LANE TO BOTTOM OF PRINCIPAL SIGN, REGARDLESS OF WHETHER THERE IS A TAB SIGN MOUNTED BENEATH PRINCIPAL SIGN.
- AREAS WITH NO PEDESTRIANS AND WITH RAISED CURBS: 1.5 M TO 2.5 M FROM CURB LINE TO BOTTOM OF PRINCIPAL SIGN, REGARDLESS OF WHETHER THERE IS A TAB SIGN MOUNTED BENEATH PRINCIPAL SIGN.
- AREAS WITH PEDESTRIANS: 2 M TO 3 M FROM GROUND ELEVATION AT THE BASE OF THE SIGN POST TO THE BOTTOM OF THE OVERALL SIGN, INCLUDING TAB IF PRESENT.

HORIZONTAL & VERTICAL ANGLING OF SIGN FACE

GENERALLY, SIGNS MUST BE MOUNTED AT APPROXIMATELY RIGHT ANGLES TO THE DIRECTION OF TRAFFIC, FACING THE TRAFFIC THAT THEY ARE INTENDED TO ADDRESS. EXCEPTIONS TO THIS RULE INCLUDE REGULATORY PARKING CONTROL SIGNS. THESE SIGNS SHOULD BE PLACED AT AN ANGLE OF 30 TO 45 DEGREES TO THE FLOW OF TRAFFIC, AND SHOULD ALWAYS BE VISIBLE TO APPROACHING TRAFFIC.

SIGN MOUNTING

MOUNTING TO BE DETERMINED IN FIELD.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND UTILITIES IN WORKING AREA PRIOR TO CONSTRUCTION AND SHALL PROTECT THESE UTILITIES AND SERVICES TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANIES AND OWNER. DAMAGES BY THE CONTRACTOR SHALL BE RESTORED TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANY AT NO EXPENSE TO THE OWNER

SIGNAGE LEGEND

SIGN DETAIL	NAME	SIGN DETAIL	NAME
	Rb-93 ACCESSIBLE PARKING PERMIT SIGN 300 x 450 mm		Rb-93t VAN ACCESSIBLE TAB 150 x 300 mm

NO.	DATE	INITIAL	REVISION DETAIL

PAVEMENT MARKING AND SIGNAGE PLAN
97 BOWER STREET
TOWN OF HALTON HILLS

paradigm TRANSPORTATION SOLUTIONS LIMITED	PROJECT NO.: 240109	DATE: JULY 2025	SCALE: 1:500	DRAWING NO.: 02
	DESIGN: WL	DRAWN: WL	CHECK: ASo	

THIS AUTOTURN SWEPT PATH ANALYSIS HAS BEEN PREPARED USING BASE PLANS PROVIDED BY OTHERS. THE PRACTITIONER HAS NOT INSPECTED THE ACCURACY AND/OR THE COMPLETENESS OF THESE BASE PLANS AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.