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2026-01-29
Project: 230683

Jeremy Grant, OPPI, MCIP, RPP
Vice-President
Seaton Group
54 Fulton Avenue
Toronto, ON
M4K 1X5

Dear Mr. Grant:

RE: 14 AGNES STREET, CALEDON, ONTARIO
TRAFFIC IMPACT STUDY ADDENDUM

Introduction and Context

Paradigm Transportation Solutions Limited (Paradigm) previously prepared a *Transportation Impact Study* report (December 2023) for the proposed residential development located at 14 Agnes Street in the Town of Caledon. Following completion of the TIS, the concept site plan was revised. This letter reflects the latest concept plan and documents the associated changes in the development proposal.

The purpose of this letter is to assess the impacts of the revised site plan at the study area intersections of Emeline Street with Queen Street West, and the newly proposed additional site access.

An access review is included within this addendum letter to demonstrate and confirm the adequacy of the proposed site access locations.

Figure 1 (attached) illustrates the latest site plan.

Compared to the December 2023 TIS, the development proposal has been revised as follows:

- The proposed number of residential townhouse dwelling units is reduced from 67 to 65.
- An additional site access is proposed to serve the site. This proposed full-movement access onto Emeline Street is located approximately 70 metres south of its intersection with Queen Street West.
- The driveway from Agnes Street has been redesigned to remove the centre median.

Updated Future Operational Analysis

The following subsections provide an update of the 2027 total traffic analysis, accounting for the dwelling unit reduction, and the newly proposed site access on Emeline Street.

Vehicular Trip Generation

Table 1 compares the trip generation for 67 and 65 townhouse units. The site trips are calculated from the same trip generation data utilized within the December 2023 TIS.

The reduction in proposed townhouse units results in minimal changes to the site trip generation. That is, during the AM peak hour the current development proposal would generate one (1) less vehicle trip, and during the PM peak hour no changes to the trip generation is noted.

Given the nominal change during the AM peak hour, it is determined the trip generation as documented within the December 2023 TIS would represent a conservative approach (i.e., errs on the high side) and therefore has been used in this update.

TABLE 1: SITE TRIP GENERATION

Land Use	Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
67 Townhouse Units									
LUC 220	67	Eqn.[1]	11	33	44	Eqn.[2]	31	18	49
65 Townhouse Units									
LUC 220	65	Eqn.[1]	10	33	43	Eqn.[2]	31	18	49
Difference									
			-1	**Nil**	**-1**		**Nil**	**Nil**	**Nil**

[1] AM: T = 0.31(X) + 22.85 (24% in, 76% out); [2] PM: T = 0.43(X) + 20.55 (63% in, 37% out).

Trip Distribution and Assignment

The trip distribution from the December 2023 TIS report is applied, as it is not affected by changes to the site plan. That is, prospective residents will still be travelling to and from the same places, regardless of how many residents live within the site or the access arrangement.

However, the additional site access proposed on Emeline Street will impact the trip assignment. That is, the anticipated travel routes residents travel from their origin to their destination, and vice versa. With the additional site access, it is reasonable to assume that:

- All trips to/from the west via Queen Street West will access the site access via Emeline Street.
- Half of trips to/from the east via Queen Street West will use the new site access via Emeline Street, and the remaining half would utilize the site access via Agnes Street.

- All trips to/from the north and south via Main Street would still use the site access on Agnes Street.

Table 2 summarizes the trip distribution, which is unchanged from the December 2023 TIS.

Table 3 presents the updated trip assignment, accounting for the additional site access on Emeline Street.

TABLE 2: TRIP DISTRIBUTION

Origin/Destination	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
North via Main Street	6%	42%	35%	42%
South via Main Street	61%	50%	48%	53%
East via Queen Street West	16%	8%	8%	5%
West via Queen Street West	17%	0%	9%	0%
Total	***100%***	***100%***	***100%***	***100%***

TABLE 3: TRIP ASSIGNMENT

Origin/Destination	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
One access road, 67 units						
East driveway (Agnes St)	11	33	44	31	18	49
Two access roads, 65 units						
Site Access with Agnes Street	8	32	40	27	18	45
Site Access with Emeline Street	3	1	4	4	0	4

Total Traffic Volumes

Figure 2 and **Figure 3** (attached) illustrate the 2027 total traffic forecasts for the weekday AM and PM peak hours, respectively.

Total Traffic Operations

Table 4 summarizes the results of the updated operational analysis for the 2027 total traffic conditions during the weekday AM and PM peak hours.

The results indicate the intersections of Emeline Street with Queen Street West, and the site access are forecast to operate at good levels of service, and well within capacity. No critical movements are identified.

Appendix A contains the Synchro analysis outputs for reference.

The 2027 total traffic operational results at Emeline Street and Queen Street West are reported to be similar to the results from the December 2023 TIS.

With the introduction of the site access with Emeline Street, less than five (5) vehicles per peak hour are anticipated to be added to the intersection of Emeline Street and Queen Street West. This amount of additional site traffic is not anticipated to result in any adverse impact to the intersection operations.

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

TABLE 4: 2027 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Emeline St/Driveway & Queen St W	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	0	>	**0**	<	1	>	**1**	<	9	>	**9**	<	0	>	**0**	
			V/C	<	0.00	>		<	0.00	>		<	0.02	>		<	0.00	>		
			Q	<	0	>		<	0	>		<	0	>		<	0	>		
	Emeline St & Site Driveway	TWSC	LOS					A		>	**A**		A	>	**A**	<	A		**A**	
			Delay					8		>	**8**		0	>	**0**	<	3		**3**	
			V/C					0.00		>			0.01	>		<	0.00			
			Q					0		>			0	>		<	0			
PM Peak Hour	Emeline St/Driveway & Queen St W	TWSC	LOS	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	<	A	>	**A**	
			Delay	<	0	>	**0**	<	1	>	**1**	<	9	>	**9**	<	10	>	**10**	
			V/C	<	0.00	>		<	0.01	>		<	0.03	>		<	0.00	>		
			Q	<	0	>		<	0	>		<	1	>		<	0	>		
	Emeline St & Site Driveway	TWSC	LOS					A		>	**A**		A	>	**A**	<	A		**A**	
			Delay					0		>	**0**		0	>	**0**	<	2		**2**	
			V/C					0.00		>			0.01	>		<	0.00			
			Q					0		>			0	>		<	0			

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

Access Review

The proposed additional site access connection with Emeline Street 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.

In addition, the latest changes to the site plan have resulted in the position of the site driveway with Agnes Street being shifted slightly, with the exit lane now located further away from King Street.

The key design issues to consider with respect to the locations of the driveways are discussed in the sections below.

Emeline Street Driveway – Corner Clearence

The Transportation Association of Canada's (TAC) *Geometric Design Guide for Canadian Roads*[1] (GDGCR) offers recommendations for access management applications including corner clearance requirements at intersections.

GDGCR Chapter 8.8 ("Corner Clearances at Major Intersection") states:

"Corner clearance is the distance from an intersection to the nearest access upstream or downstream of it. Corner clearance is measured from the near curb of the cross roadway to the near edge of the access throat. It consists of three components: the curb return radius at the intersection, a length of tangent, and the curb return radius or flare dimension at the driveway. Inadequate corner clearance between accesses and intersections along a major road, such as a major arterial, can create operational issues."

The GDGCR requirements were reviewed to determine suitability of the corner clearance from a major intersection. The recommended corner clearance is 25 metres (curb radii to curb radii) upstream of an unsignalized intersection on a collector road (Queen Street West).

The proposed site access with Emeline Street is located approximately 70 metres south of the intersection. This exceeds the recommended corner clearance requirements.

Emeline Street Driveway – Sight Distance

The proposed site access connection with Emeline Street has been reviewed to confirm sight distance and sight line availability and provisions.

A desktop assessment has been carried out based on the methodology contained in the GDGCR. Sight distance requirements are considered for vehicles departing from the site

[1] Transportation Association of Canada, *Geometric Design Guide for Canadian Roads* (2017)

access (departure sight distance), and for vehicles approaching the site access (approach sight distance).

The main measurements for departing traffic were taken from 5.4 metres back from the existing edge of pavement for vehicles exiting at the proposed site access, representing the position of a driver/vehicle performing a turning movement.

The main measurements for approaching traffic were taken from the centre of travel lanes on Emeline Street, assuming a vehicle position perpendicular to the proposed site access.

The sight distance requirements are based upon a design speed of 50 km/h (10 km/h above the posted speed limit of 40 km/h).

Table 5 summarizes the available and required sight distances for the site access on Emeline Street in accordance with TAC guidance.

TABLE 5: SIGHT DISTANCE REVIEW

Vehicle Movement	Available Sight Distance (m)	TAC Sight Distance Recommendation (m)	Recommendation Satisfied
Departure Sight Distance			
Westbound Left Turn - looking right (north)	70	105.0[1]	No
Westbound Left Turn - looking left (south)	75	105.0[1]	No
Westbound Right Turn - looking right (north)	N/A	N/A	N/A
Westbound Right Turn - looking left (south)	75	95.0[2]	No
Approach Sight Distance			
Northbound	75	65.0[3]	Yes
Southbound	70	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

The results indicate the TAC recommended approach sight distance is satisfied for the proposed site access on Emeline Street.

However, the TAC recommended departure sight distance requirements looking to the right not met due to the adjacent T-intersection (Queen Street West and Emeline Street). The TAC recommended departure sight distance requirements looking to the left are also not met due to the adjacent horizontal roadway curvature along Emeline Street constraining the sight line.

The departure sight distance deficiencies are not considered critical issues based on the following rationale:

- **Role of Street:** Emeline Street is designated and functions as a local road. It serves a residential area with front-lotted developments. Given this local context and presence of horizontal curves on Emeline Street, motorists are likely to exercise caution and exhibit lower travel speeds.
- **Required Sight Distance for Expected Speed:** The available departure sight distance of 75 metres for a departing right turn movement is confirmed to be suitable for a travel speed of 40 km/h, which is the posted speed limit.

  Similarly, the available departure sight distance of 70 metres for a departing left turn movement is confirmed suitable for a travel speed of 36 km/h, just under the posted speed limit.

  This implies for vehicles travelling at or under the posted maximum speed limit on Emeline Street, the available departure sight distance is adequate for motorists exiting the site driveway.
- **Approach Speed of Vehicles from the North:** Vehicles arriving/approaching from the north will have just turned off from Queen Street West. Assuming a conservative (i.e., errs on the high side) turning speed of 30 km/h is carried through a turn, it is not likely that vehicles approaching from the north will achieve the design speed of 50 km/h prior to reaching the site driveway.
- **Corner Clearance:** As discussed above, the proposed site access location exceeds the corner clearance spacing recommendations. The proposed access is located outside the functional area of the adjacent intersection.

Overall, the sight distance assessment indicates no major issues have been identified for the proposed site access connection with Emeline Street confirming the proposed site access location is adequate.

Agnes Street Driveway – Offset from King Street

The distance measured between the centreline of the Agnes Street driveway and the centreline of King Street is 35.8 metres, as shown in **Figure 1** (attached). This is 4.2 metres less than the 40 metre spacing as suggested by TAC's *Geometric Design Guide for Canadian Roads*[2] for a three-legged intersection on local roads.

While the spacing is slightly deficient from the TAC recommendation, in our professional opinion the spacing distance between the offset legs is sufficient allowing drivers to treat the situation as two, separate T-intersections. That is, the spacing results in no reasonable way to drive 'straight' across from the site driveway to King Street (or vice versa).

[2] Transportation Association of Canada, *Geometric Design Guide for Canadian Roads* §9.4.2.3 (2017)

As shown in **Figure 2** and **Figure 3**, the future total volumes on the Agnes site driveway, on Agnes Street, and on King Street are all less than 30 vehicles per hour – or less than one vehicle every two minutes.

The intersection spacing of 35.8 metres would be greater than the spacing provided on Main Street between the intersections at King Street and at Edmund Street, which is approximately 17 metres. The proposed spacing of Agnes Street access from King Street, would also be greater than the spacing provided on Queen Street West between the intersections of Amelia Street and Victoria Street, which is approximately 14 metres. Consequently, drivers travelling to and from the proposed development would be familiar with similar situations elsewhere within the community.

An issue to consider with offset intersection legs would be conflicting vehicle movements with respect to the potential for simultaneous outbound movements to Agnes Street from the offset legs. There are good sight lines between the two offset legs, outbound motorists would be able to see the opposing intersection leg and any vehicle present at the approaches to Anges Street prior to performing a turning movement. Given the good sight lines and low travel speeds related to turning movements, the occurrent of vehicular conflicts would be negligible.

Given the configuration, overlapping inbound left-turn movements is a concern. However, as previously mentioned that projected turning movement volumes are minor, and occurrences are not anticipated to result in any significant operational issues.

Community members raised the concern that the headlights of vehicles queueing at the site driveway to turn onto Agnes Street would shine through the windows of the house at 9 Agnes Street. However, as shown in **Figure 4**, this would not be the case. The exit lane from the driveway does not align with the house on 9 Agnes Street. This means that headlights would only shine through the windows of the house during the brief moments while a vehicle is turning left. They would not shine through the windows at all for when vehicles turn right.

Overall, the proposed site driveway intersection configuration offers a reasonable way to provide access into and out of the site.

Conclusions

The conclusions of the Addendum Letter are as follows:

- The small reduction in townhouse dwelling units proposed would result in minimal changes in the site trip generation.
- The updated 2027 total traffic operational analysis results indicate intersection operations at Queen Street West and Emeline Street are not anticipated to experience any significant impact on its operations arising from the site plan changes. The intersection is reported to operate at a good level of service and with all movements well within capacity under both analysis periods.

- The proposed site access intersection with Emeline Street is forecast to operate at good levels of service and well within capacity at full build-out.
- The proposed site access with Emeline Street exceeds the TAC corner clearance requirement for spacing from a major intersection along a collector road.
- Approach sight distance requirements are met at the proposed site access with Emeline Street. That is, motorists approaching the site access are provided adequate distance to stop safely and avoid a collision.
- The departure sight distance requirements are not met at the site access with Emeline Street. Sight distance to the north and south are constrained due to the T-intersection of Queen Street West and Emeline Street, and the horizontal curves along Emeline Street, respectively.

  Based upon our assessment, the available departure sight distance is determined to be adequate. Given the local context, and the presence of horizontal curves, motorists are exhibiting lower travel speeds. Consequently, no major safety issues are identified as long as motorists are travelling at or below the posted maximum speed limit of 40 km/h.
- The spacing distance measured between the centrelines of the Agnes Street site access driveway and King Street is 35.8 metres. This spacing distance is slightly deficient from the 40 metre spacing suggested by the TAC *Geometric Design Guide for Canadian Roads* for three-legged intersections on local roads. The projected low traffic volumes on all roads, and the clear sightlines for all vehicles alludes to no operational concerns.
- The headlights of vehicles exiting the Agnes Street site access driveway are not anticipated to shine through the windows of the house at 9 Agnes Street. That is, for a vehicle approaching and then stopping at Agnes Street, the vehicle position would not be aligned across from 9 Agnes Street. However, when outbound left-turning vehicles exit to Agnes Street the vehicle headlights would briefly shine at the house as they are turning.

I trust that this letter summarizes the effects of the revisions to the site plan for the proposed development at 14 Agnes Street.

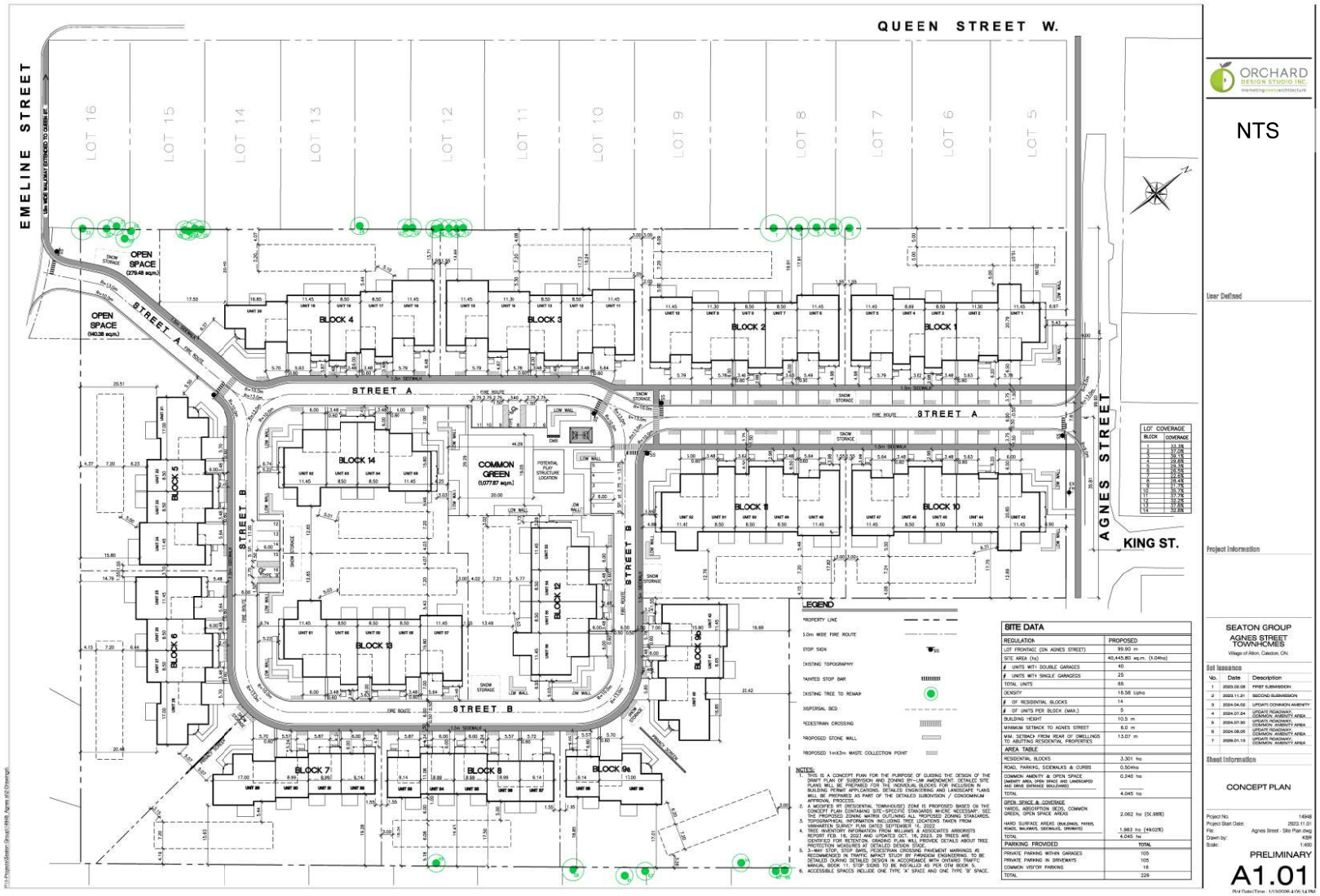
Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Tom Willis
MMath
Senior Project Manager

Adrian Soo
P.Eng.
Operations Principal, GTA East

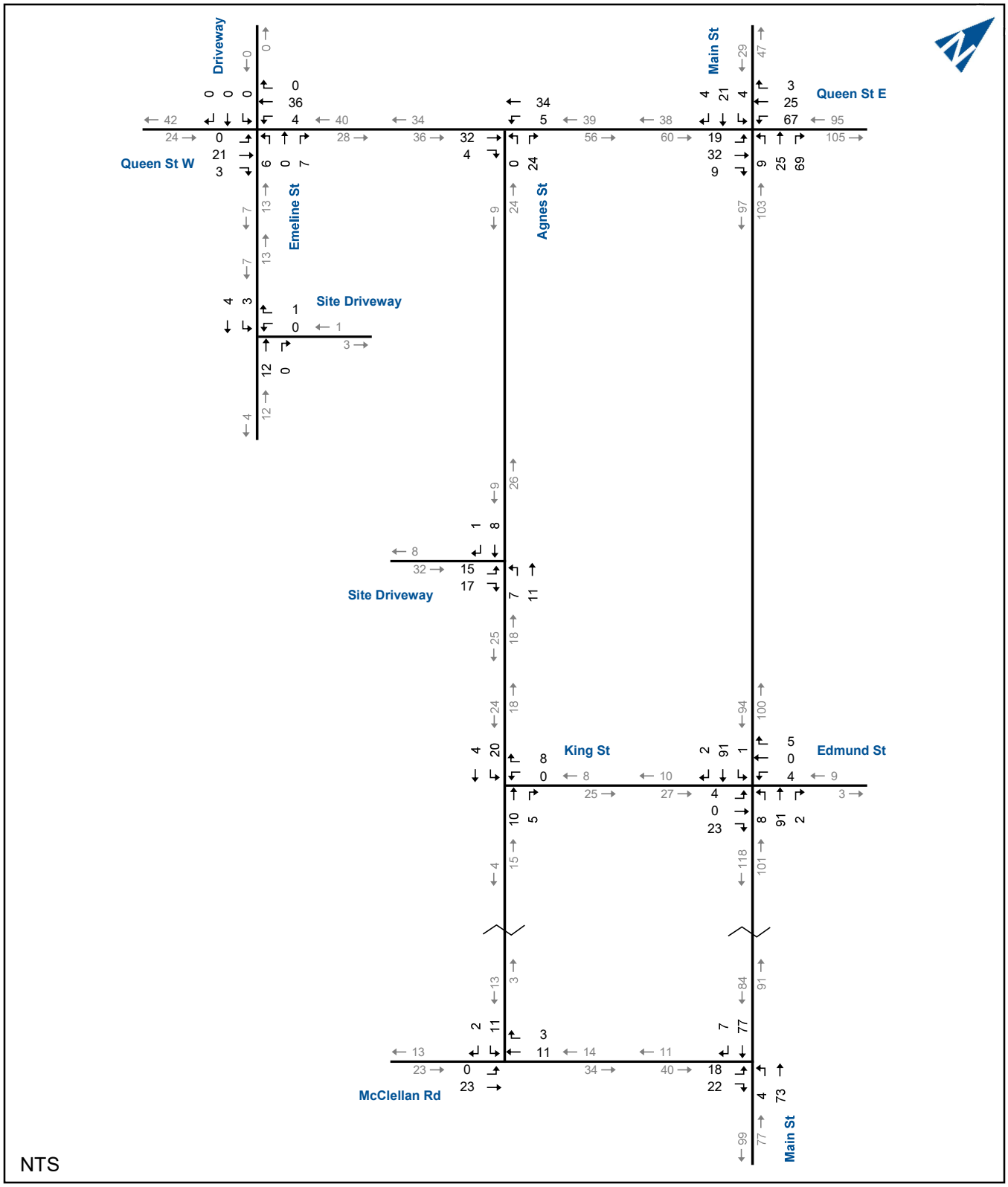
Attachments



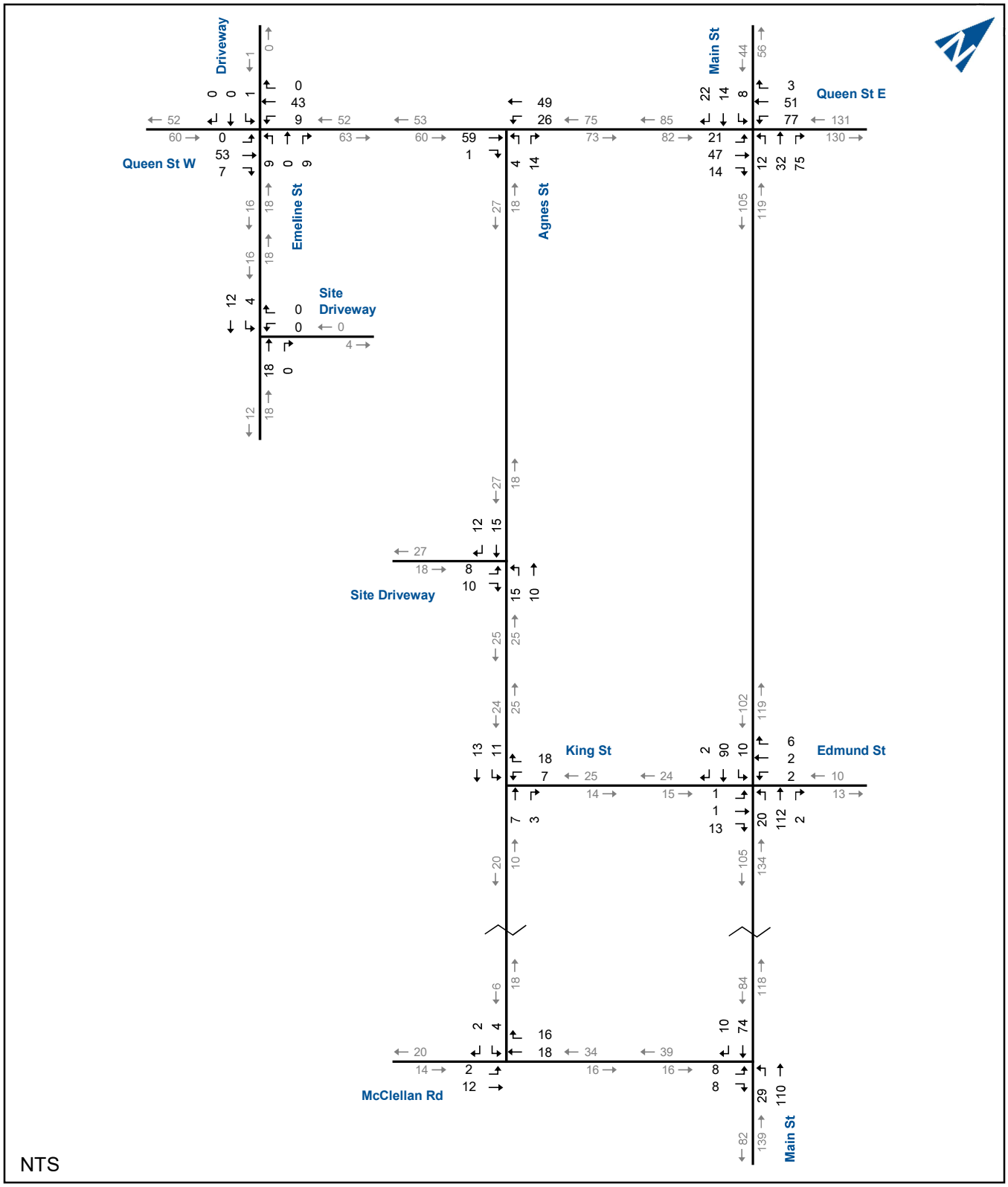
Concept Plan

14 Agnes Street – Site Plan Update Traffic Letter
230683

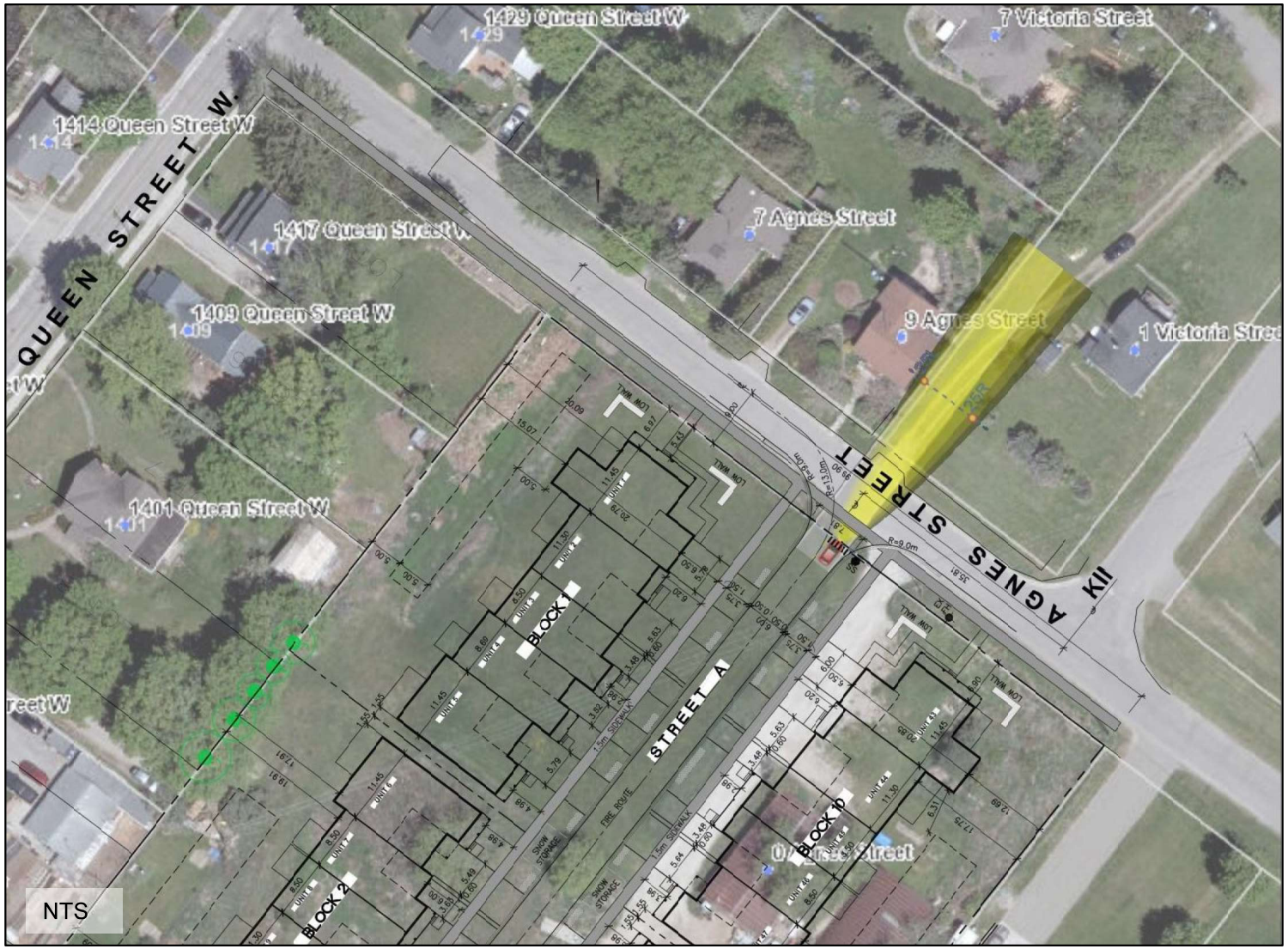
Figure 1



2027 AM Peak Hour Total Traffic Forecasts (Base Case)



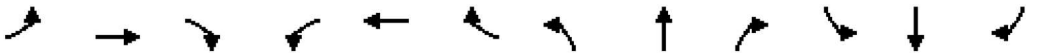
2027 PM Peak Hour Total Traffic Forecasts



paradigm TRANSPORTATION SOLUTIONS LIMITED

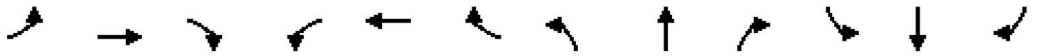
Headlight Analysis

Appendix A: 2027 Total Traffic Operations Report



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	21	3	4	36	0	6	0	7	0	0	0
Future Volume (vph)	0	21	3	4	36	0	6	0	7	0	0	0
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
Frt		0.985						0.929				
Flt Protected					0.995			0.977				
Satd. Flow (prot)	0	1556	0	0	1770	0	0	1725	0	0	1900	0
Flt Permitted					0.995			0.977				
Satd. Flow (perm)	0	1556	0	0	1770	0	0	1725	0	0	1900	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		157.4			285.1			63.9			48.4	
Travel Time (s)		14.2			25.7			5.8			3.5	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles (%)	0%	10%	100%	67%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	31	4	6	53	0	9	0	10	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	59	0	0	19	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.2%		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)	0	21	3	4	36	0	6	0	7	0	0	0
Future Volume (Veh/h)	0	21	3	4	36	0	6	0	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	0	31	4	6	53	0	9	0	10	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	53			35			98	98	33	108	100	53
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			35			98	98	33	108	100	53
tC, single (s)	4.1			4.8			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.8			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1566			1243			886	792	1046	864	790	1020

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	35	59	19	0
Volume Left	0	6	9	0
Volume Right	4	0	10	0
cSH	1566	1243	963	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (m)	0.0	0.1	0.5	0.0
Control Delay (s/veh)	0.0	0.8	8.8	0.0
Lane LOS		A	A	A
Approach Delay (s/veh)	0.0	0.8	8.8	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	15.2%	ICU Level of Service	A	
Analysis Period (min)	15			

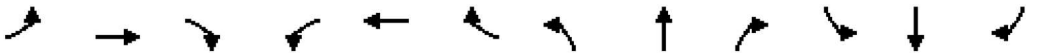
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1	12	0	3	4
Future Volume (vph)	0	1	12	0	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.979
Satd. Flow (prot)	1611	0	1863	0	0	1824
Flt Permitted						0.979
Satd. Flow (perm)	1611	0	1863	0	0	1824
Link Speed (k/h)	50		40			40
Link Distance (m)	65.6		287.3			63.9
Travel Time (s)	4.7		25.9			5.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1	13	0	3	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	13	0	0	7
Sign Control	Stop		Free			Free

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	1	12	0	3	4
Future Volume (Veh/h)	0	1	12	0	3	4
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	13	0	3	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	23	13			13	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	23	13			13	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	991	1067			1606	

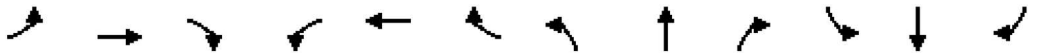
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1	13	7
Volume Left	0	0	3
Volume Right	1	0	0
cSH	1067	1700	1606
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	8.4	0.0	3.1
Lane LOS	A		A
Approach Delay (s/veh)	8.4	0.0	3.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	53	7	9	43	0	9	0	9	1	0	0
Future Volume (vph)	0	53	7	9	43	0	9	0	9	1	0	0
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		0.984						0.932				
Flt Protected					0.991			0.976			0.950	
Satd. Flow (prot)	0	1806	0	0	1769	0	0	1557	0	0	1805	0
Flt Permitted					0.991			0.976			0.950	
Satd. Flow (perm)	0	1806	0	0	1769	0	0	1557	0	0	1805	0
Link Speed (k/h)		40			40			40			50	
Link Distance (m)		157.4			285.1			64.9			48.4	
Travel Time (s)		14.2			25.7			5.8			3.5	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	4%	0%	13%	5%	0%	22%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	68	9	12	55	0	12	0	12	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	0	0	67	0	0	24	0	0	1	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		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)	0	53	7	9	43	0	9	0	9	1	0	0
Future Volume (Veh/h)	0	53	7	9	43	0	9	0	9	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	68	9	12	55	0	12	0	12	1	0	0
Pedestrians								5				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	55			82			157	157	78	164	161	55
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	55			82			157	157	78	164	161	55
tC, single (s)	4.1			4.2			7.3	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			98	100	99	100	100	100
cM capacity (veh/h)	1563			1443			756	730	985	788	726	1018

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	77	67	24	1
Volume Left	0	12	12	1
Volume Right	9	0	12	0
cSH	1563	1443	855	788
Volume to Capacity	0.00	0.01	0.03	0.00
Queue Length 95th (m)	0.0	0.2	0.7	0.0
Control Delay (s/veh)	0.0	1.4	9.3	9.6
Lane LOS		A	A	A
Approach Delay (s/veh)	0.0	1.4	9.3	9.6
Approach LOS			A	A

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	18	0	4	12
Future Volume (vph)	0	0	18	0	4	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.988
Satd. Flow (prot)	1863	0	1863	0	0	1840
Flt Permitted						0.988
Satd. Flow (perm)	1863	0	1863	0	0	1840
Link Speed (k/h)	50		40			40
Link Distance (m)	64.5		289.4			64.9
Travel Time (s)	4.6		26.0			5.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	20	0	4	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	20	0	0	17
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 7.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	18	0	4	12
Future Volume (Veh/h)	0	0	18	0	4	12
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	20	0	4	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	41	20			20	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	41	20			20	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	968	1058			1596	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	20	17
Volume Left	0	0	4
Volume Right	0	0	0
cSH	1700	1700	1596
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s/veh)	0.0	0.0	1.7
Lane LOS	A		A
Approach Delay (s/veh)	0.0	0.0	1.7
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	7.5%	ICU Level of Service	A
Analysis Period (min)	15		