Delmanor West Oak Inc.

1280 DUNDAS STREET WEST, TOWN OF OAKVILLE

PROPOSED SENIORS RESIDENCE DEVELOPMENT

Transportation Impact Analysis

August 2020

20253

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August 27, 2020 **Reference Number:** 20253

Catherine L'Estrange
Assistant Development Manager
Tridel
4800 Dufferin Street
Toronto, ON M3H 5S9

Dear Ms. Catherine L'Estrange:

RE: Transportation Impact Analysis
Proposed Seniors Residence Development
1280 Dundas Street West, Town of Oakville

LEA Consulting Ltd. is pleased to present the findings of our Transportation Impact Analysis for the proposed seniors residence development located at 1280 Dundas Street West in the Town of Oakville. This TIA has been prepared for Delmanor West Oak Inc. in support of a Zoning By-Law Amendment application. This report concludes that the traffic associated with the proposed development will have an acceptable impact on the surrounding road network.

Should you have any questions regarding this Transportation Impact Analysis, please do not hesitate to contact the undersigned at (905) 470-0015.

Yours truly,
LEA CONSULTING LTD.

Kenneth Chan, P.Eng., PTOE, PMP
Vice President – Transportation Planning & Engineering

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Transportation Analyst

Encl. Transportation Impact Analysis – 1280 Dundas Street West, Town of Oakville

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1 INTRODUCTION

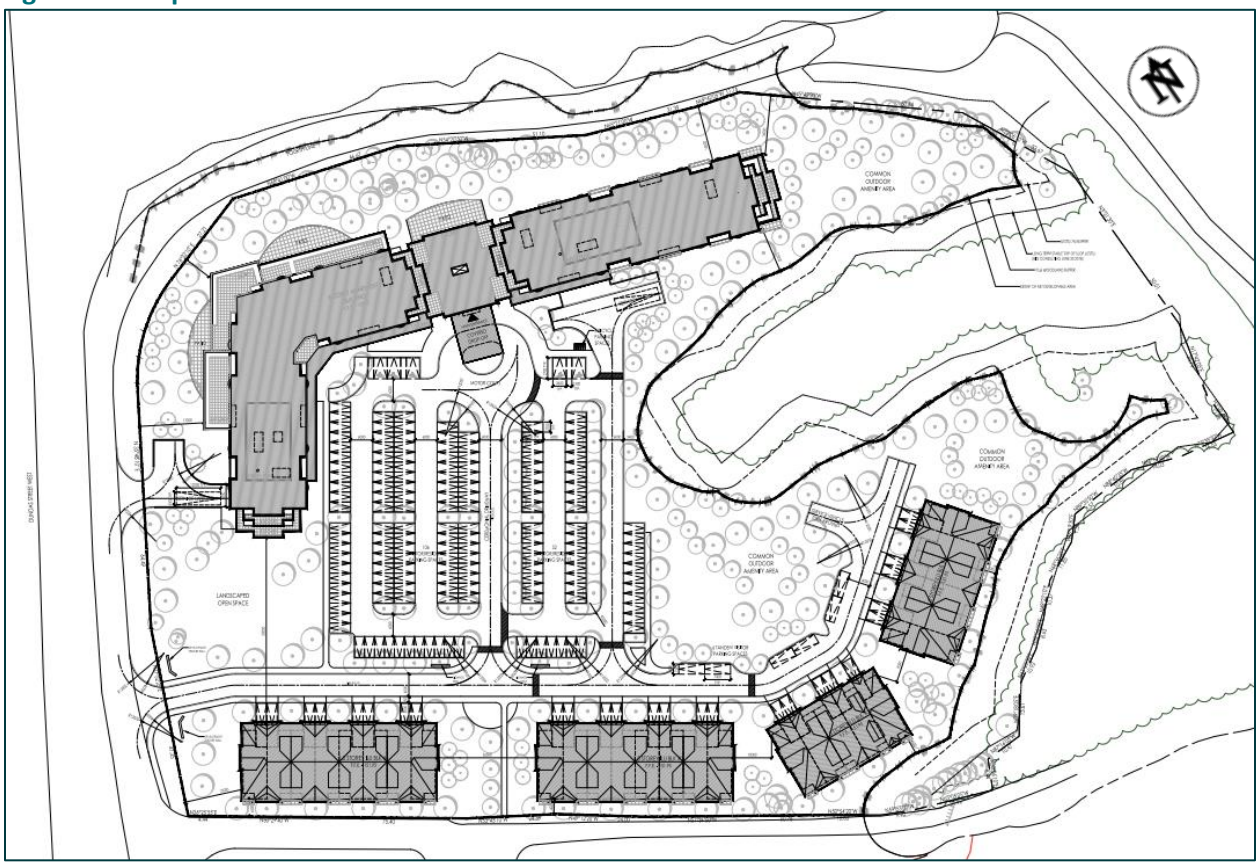
LEA Consulting Ltd. (LEA) was retained by Delmanor West Oak Inc. to undertake a Transportation Impact Analysis (TIA) for the proposed senior's residence development located at 1280 Dundas Street West in the Town of Oakville (herein referred to as the "subject site"). The subject site is bound by Fourth Line to the north and east, St. Volodymyr Cultural Centre to the west and St. Volodymyr Ukrainian Cemetery to the south, as illustrated in **Figure 1-1.**

Figure 1-1 Site Location

The subject site is currently vacant. The proposed development provides for the construction of an 8-storey seniors building providing 315 units consisting of assisted living units, memory care units, independent supportive living units and independent living suites. The development also provides 27 independent living units. A total of 218 parking spaces are proposed for the collective 342 units. Access to the subject site is provided via a full-movement driveway onto Fourth Line.

The proposed site plan is illustrated in **Figure 1-2.**

Figure 1-2 Proposed Site Plan



2 EXISTING TRANSPORTATION CONDITIONS

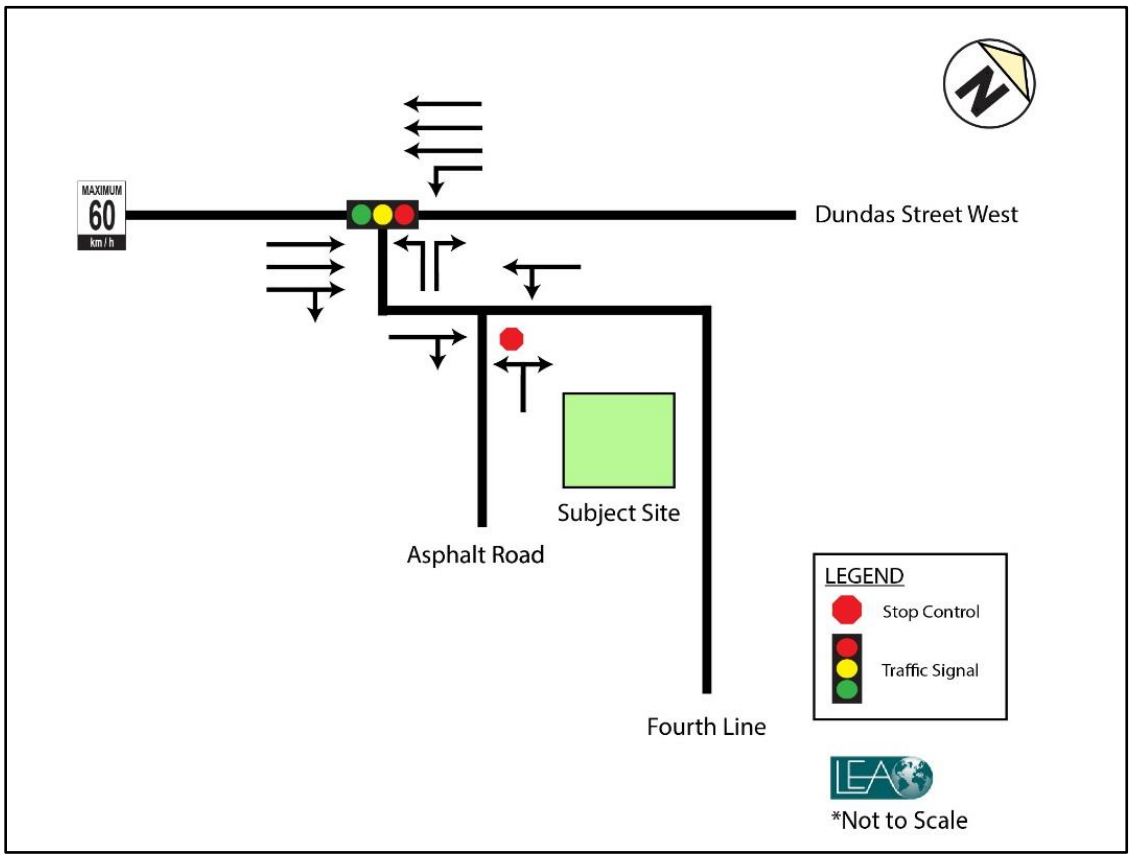
This section will identify and assess the existing transportation conditions present in the study area, including the road, transit, cyclist, and pedestrian networks. The study area was determined based on the size of the development and its anticipated transportation impact, as well as through discussions with the Town and Region's Transportation Services and Transportation Planning staff. The study area will include the following intersections:

- Dundas Street West and Fourth Line (signalized)
- Fourth Line and Asphalt Road (unsignalized)

2.1 EXISTING ROAD NETWORK

This subsection will describe the road network contained within the above-mentioned study area. The existing intersection control and lane configuration of the study area is illustrated in **Figure 2-1**.

Figure 2-1 Existing Road Network and Lane Configuration



Dundas Street West is an east-west major arterial road that operates under the jurisdiction of the Halton Region. Dundas Street West operates with a six-lane cross section (three lanes per direction) and has a posted speed limit of 60 km/h in the vicinity of the subject site.

Fourth Line is an east-west local road that operates under the jurisdiction of the Town of Oakville from Dundas Street West to the cul-de-sac terminus located 470-m to the east at Lions Valley Park. Fourth Line operates with a two-lane cross section (one lane per direction) and has an unposted speed limit of 50 km/h. It is noted that through traffic on Fourth Line is minimal as the roadway currently only serves St. Volodymyr Culture Center and trips to Lions Valley Park. Furthermore, due to the environmentally sensitive area, there is no additional potential for additional development. Therefore, through traffic along Fourth Line will be limited.

2.2 EXISTING TRANSIT NETWORK

The subject site is accessible by public transit serviced by Oakville Transit. The existing transit network within the study area is described below and illustrated in **Figure 2-2**. Bus stops are present within a short walking distance, providing for good accessibility to the Oakville Transit network.

Figure 2-2 Existing Transit Network

(Source: Oakville Transit, 2020)

Route 5/5A Dundas bus route operates in an east-west direction between Oakville GO and Dundas/407 GO Carpool. Accessible service is provided on this route. Bike racks are also available on this route.

> *Access Locations*: Route 5/5A is accessible at the intersection of Dundas Street West and Fourth Line within 120 m of the subject site (approximately a 2-minute walk).

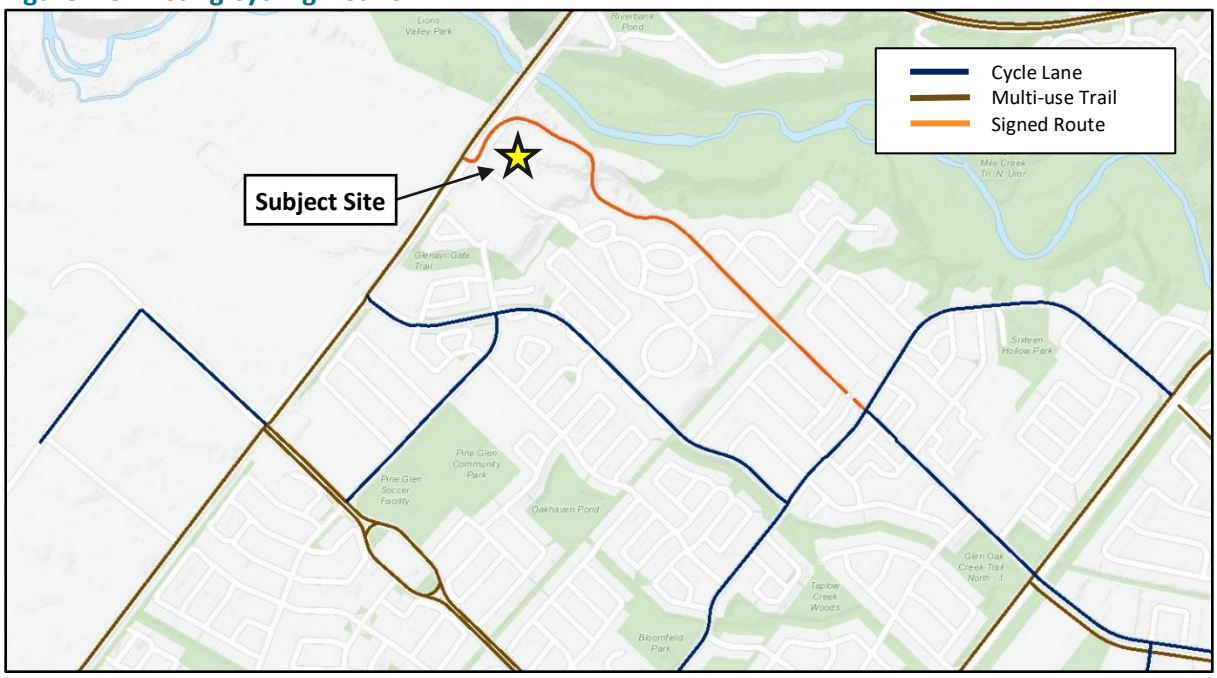
Route 3/3A Third Line bus route operates in a north-south direction between South Oakville Centre and Oakville Trafalgar Memorial Hospital. Accessible service is provided on the route. Bike racks are also available on this route.

> *Access Locations*: Route 3/3A is accessible at the intersection of Dundas Street West and Third Line within 1,000 m of the subject site (approximately a 12-minute walk).

2.3 EXISTING CYCLING NETWORK

Excellent cycling facilities are available within the immediate area of the subject site including a major multi-use trail on both sides of Dundas Street West. Furthermore, a series of cycle lanes and signed routes are present within the study area providing access to Lions Valley Park. These cycling facilities provide for significant connections in the area. The existing cycling network around the subject site is shown in **Figure 2-3**.

Figure 2-3 Existing Cycling Network



(Source: Town of Oakville, 2020)

2.4 EXISTING PEDESTRIAN NETWORK

The area in which the subject site is situated is very walkable but mainly for recreational purposes. Continuous sidewalks are present on both sides of Dundas Street West. Crosswalks with protected pedestrian phases are available on all three approaches at the Dundas Street West and Fourth Line intersection allowing for pedestrians to safely cross the street to access transit stops.

2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data in the intersection capacity analysis. LEA collected traffic counts for the intersections within the study area during the weekday AM and PM peak periods between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively. Signal timing plans at the signalized intersection were obtained from the Town of Oakville. **Table 2-1** summarizes the traffic data utilized in this study, with detailed TMCs and signal timing plans provided in **Appendix A**.

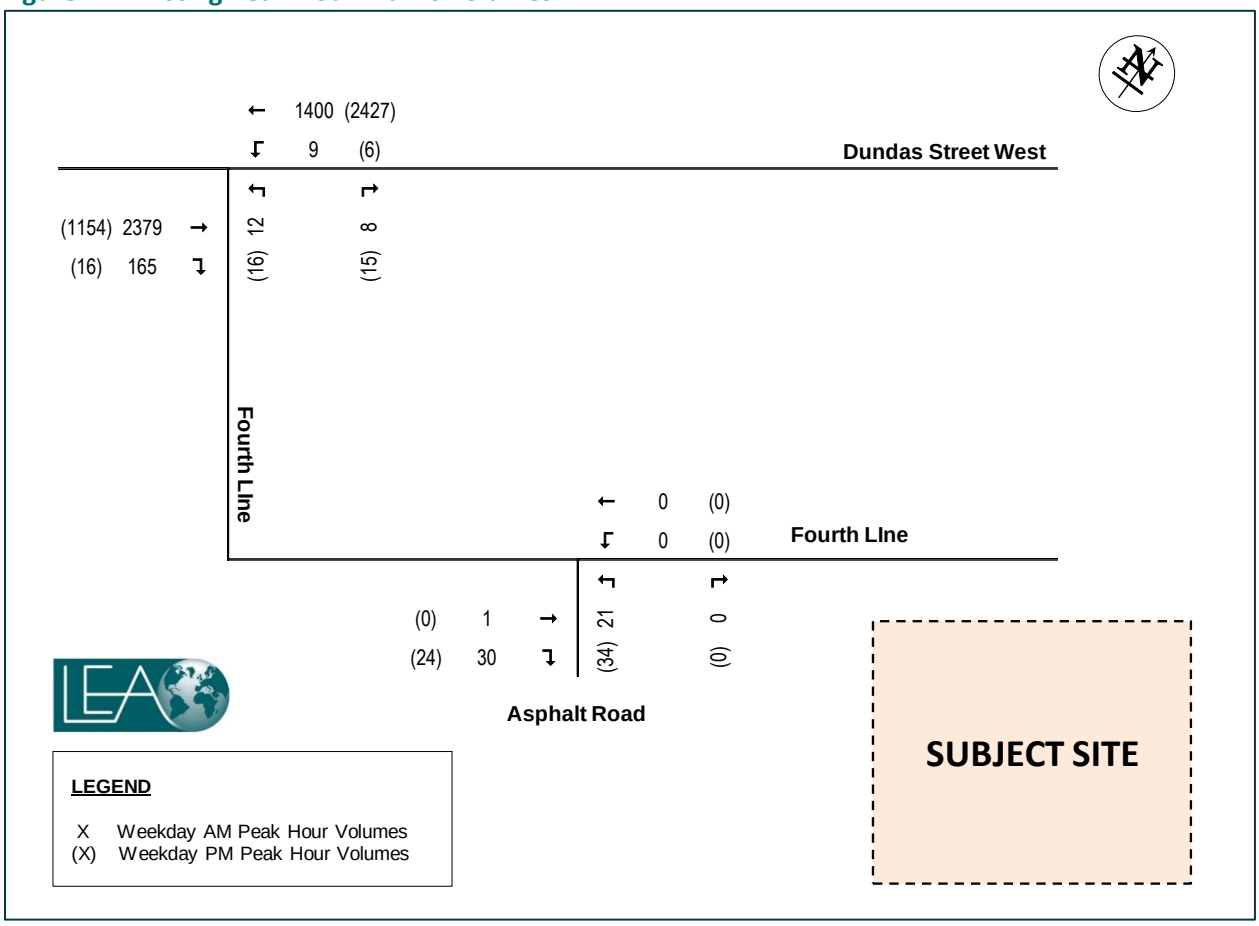
Table 2-1 Traffic Data Collection

Intersection	Survey Period	Source
Dundas Street West and Fourth Line (signalized)	Tuesday, November 19, 2019	LEA
Fourth Line and Asphalt Road (unsignalized)	Tuesday, November 19, 2019	

2.6 INTERSECTION CAPACITY ANALYSIS

The capacity analysis for the study area was undertaken using Synchro 11. Output results are based on Highway Capacity Manual (2000) methodology for the studied intersections. The existing traffic volumes in the study area during the weekday peak hours are illustrated in **Figure 2-4.**

Figure 2-4 Existing Peak Hour Traffic Volumes



The intersection capacity analysis was completed for the weekday AM and PM peak hours with the results for the assessed signalized and unsignalized intersections summarized in **Table 2-2** and **Table 2-3,** respectively. Detailed capacity results can be found in **Appendix B**.

Table 2-2 Existing Capacity Analysis – Signalized Intersections

Intersection	Weekday AM Peak Hour								
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Fourth Line & Dundas Street West	0.65	5.7	A	EBTR	0.70	6.8	A	0.0	#280.4
				WBL	0.62	116.8	F	2.4	8.3
				WBT	0.36	2.1	A	0.0	70.2
				NBL	0.23	57.3	E	2.5	8.1
				NBR	0.01	54.6	D	0.0	4.5

Intersection	Weekday PM Peak Hour								
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Fourth Line & Dundas Street West	0.60	4.4	A	EBTR	0.31	4.0	A	0.0	84.3
				WBL	0.33	69.6	E	1.5	6.1
				WBT	0.60	3.7	A	0.0	198.3
				NBL	0.16	54.2	D	3.0	8.7
				NBR	0.01	53.1	D	0.0	5.5

Under existing conditions, Fourth Line & Dundas Street West is operating well with an overall level of service (LOS) of 'A' during both peak hours. All individual movements are operating with short delays with the exception of the WBL movement during the AM peak hour. However, it is noted that there is ample residual capacity available to the WBL movement and the high delay is due to the 120 second cycle length duration, as longer cycles produce higher delays.

Table 2-3 Existing Capacity Analysis – Unsignalized Intersections

Intersection	Movement of Interest	Weekday AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Asphalt Road & Fourth Line	NBLR	27	987	8.7	0.7	0.03	A
Intersection	**Movement of Interest**	**Weekday PM Peak Hour**					
		Flow Rate (vph)	**Capacity (vph)**	**Control Delay (s)**	**95th Queue (m)**	**V/C**	**LOS**
Asphalt Road & Fourth Line	NBLR	41	1007	8.7	1.0	0.04	A

The unsignalized intersections within the study area are also operating well and within roadway capacity under existing traffic conditions during both peak hours.

3 FUTURE BACKGROUND TRAFFIC CONDITIONS

For the analysis of future background traffic conditions, this study considers a five-year horizon to the year 2025. Future background traffic includes the traffic added to the network from other future developments within the surrounding study area, corridor growth, as well as all planned infrastructure improvements within the study area.

3.1 BACKGROUND DEVELOPMENTS

Based on consultation with Town staff, one (1) background development has been identified near the study area. Information of the background developments included in our analysis were obtained from the Town. The background development is summarized in **Table 3-1**.

Table 3-1 Background Developments

Development Address	Site Statistics	Application Status	Source (Date)
1357-1359 Dundas Street West	Zone 1: 152 units (LUC 220 / 221) Zone 2: 829 units (LUC 220 / 221 / 222) Zone 3: 289 units (LUC 220 / 222) Zone 4: 164 units (LUC 220) Zone 5: 600 units (LUC 222) Zone 6: 235 units (LUC 220 / 221 / 120)	Under Review	GHD (June 2019)

The background development site traffic volumes were extracted from the respective TIA, and subsequently assigned to the road network within the study area. Excerpts from the traffic study is provided in **Appendix C**.

3.2 CORRIDOR GROWTH

Based on discussions with Region staff, a standard 2% growth rate per annum for the east-west through traffic on Dundas Street West is considered acceptable. The corridor growth rates applied to the through movements are summarized in **Table 3-2**.

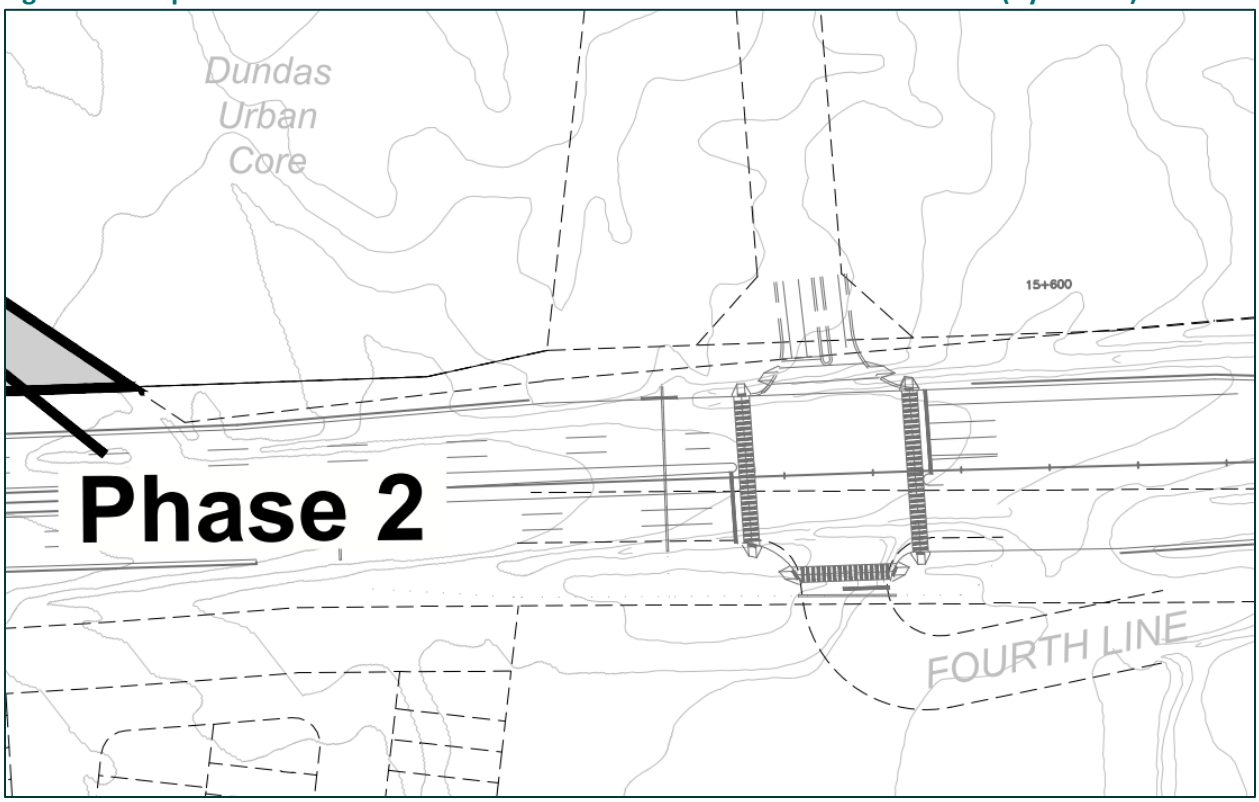
Table 3-2 Corridor Growth Rates

Period	East	West
AM Peak	2%	2%
PM Peak	2%	2%

3.3 PLANNED ROADWAY IMPROVEMENTS

As part of the residential subdivision planned for the north side of Dundas Street West, a north-south public road connecting to Fourth Line is proposed. As depicted in **Figure 3-1**, the proposed road is anticipated to have a two-lane cross section with an exclusive left-turn lane on approach to Dundas Street West. No physical modification is proposed on the south leg of this intersection.

Figure 3-1 Proposed Dundas Street West & Fourth Line Intersection Modifications (By Others)



3.4 INTERSECTION CAPACITY ANALYSIS

The future background traffic conditions were determined by incorporating future background traffic to the existing traffic volumes. The future background volumes are illustrated in **Figure 3-2.**

Alterations to the signal timing plan at Fourth Line and Dundas Street West intersection have been implemented with the addition of the proposed north-south public road connecting to Fourth Line. Please note that proposed signal timing has been prepared to provide a baseline for comparison between the future background and future total scenarios, particularly to demonstrate the potential impacts of the proposed development. **Figure 3-3** details the proposed signal timing adjustments.

Figure 3-2 Future Background Peak Hour Traffic Volumes

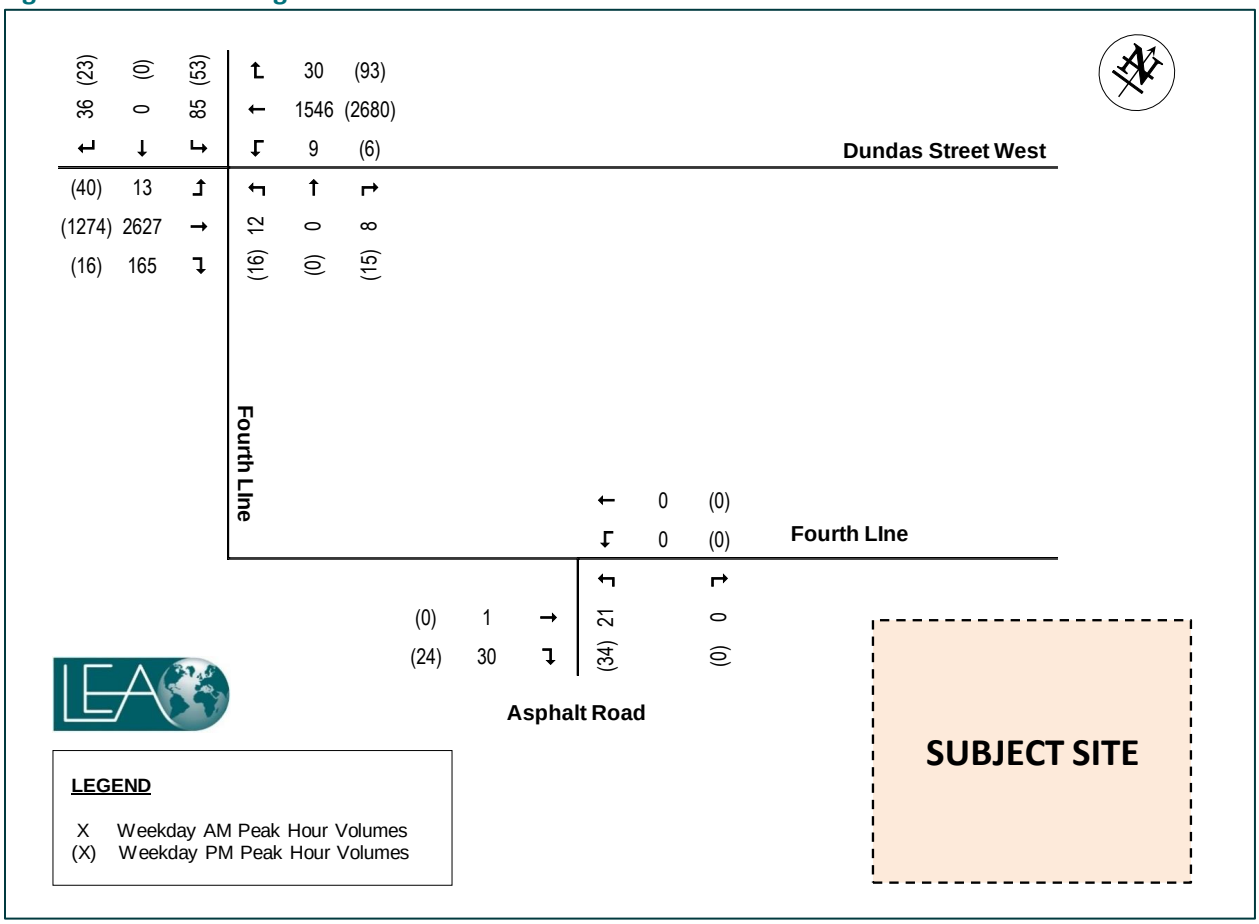
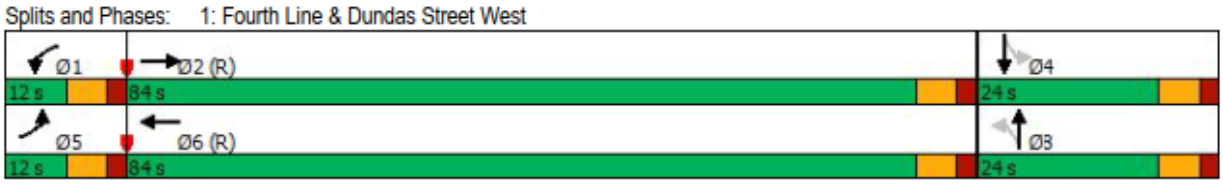


Figure 3-3 Optimized Signal Timing for Fourth Line & Dundas Street West (AM & PM Peak Hours)



The intersection capacity analysis was completed for the weekday AM and PM peak hours with the results for the studied signalized and unsignalized intersections summarized in **Table 3-3** and **Table 3-4**, respectively. The signal timing plan at the signalized intersection has been optimized to include the proposed north leg at the Dundas Street West and Fourth Line intersection. Detailed capacity results are found in **Appendix D**.

Table 3-3 Future Background Capacity Analysis – Signalized Intersections

Intersection	Weekday AM Peak Hour								
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Fourth Line & Dundas Street West	0.90	18.0	B	EBL	0.39	64.7	E	3.4	10.6
				EBTR	0.94	21.1	C	170.5	#373.4
				WBL	0.62	116.8	F	2.4	8.3
				WBTR	0.55	8.4	A	48.7	108.8
				NBL	0.13	49.2	D	3.0	9.2
				NBTR	0.01	47.9	D	0.0	0.0
				SBL	0.60	57.4	E	21.8	38.2
				SBTR	0.02	48.1	D	0.0	0.0
Intersection	Weekday PM Peak Hour								
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Fourth Line & Dundas Street West	0.85	16.3	B	EBL	0.43	57.6	E	10.1	22.1
				EBTR	0.40	5.2	A	29.0	71.3
				WBL	0.32	68.2	E	1.5	6.0
				WBTR	0.91	19.3	B	239.0	#347.8
				NBL	0.16	52.7	D	4.0	11.2
				NBTR	0.01	51.4	D	0.0	0.0
				SBL	0.53	58.1	E	13.5	26.6
				SBTR	0.01	51.4	D	0.0	0.0

Under future background conditions, Fourth Line & Dundas Street West is expected to continue operating well with an overall level of service (LOS) of 'B' during both peak hours. Similar to existing conditions, all individual movements are operating with short delays with the exception of the WBL movement during the AM peak hour. However, it is noted that there is ample residual capacity available to the WBL movement and the high delay is due to the 120 second cycle length duration, as longer cycles produce higher delays.

Table 3-4 Future Background Capacity Analysis – Unsignalized Intersections

Intersection	Movement of Interest	Weekday AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Asphalt Road & Fourth Line	NBLR	27	987	8.7	0.7	0.03	A
Intersection	Movement of Interest	Weekday PM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Asphalt Road & Fourth Line	NBLR	41	1007	8.7	1.0	0.04	A

The unsignalized intersections are expected to operate at similar levels of service with the addition of background development traffic. All movements operate with significant residual capacity during both hours.

4 SITE-GENERATED TRAFFIC

The proposed development consists of 34 assisted living units, 34 memory care units, 116 independent supportive living units and 131 independent living suites within an 8-storey building. The development also consists of 27 seniors friendly independent living units in four (4) 1.5-storey townhouse blocks. The sections below discuss in detail the calculation and distribution of site-generated single-occupant vehicle (SOV) trips.

4.1 MODAL SPLIT ASSUMPTION

The modal split of site traffic was estimated using Transportation Tomorrow Survey (TTS) 2016 data. The TTS data were filtered for home-based trip purposes during the weekday AM peak period originating from the 2006 Traffic Zone 4039. The existing modal split based on TTS data is summarized in **Table 4-1** and detailed in **Appendix E**.

Table 4-1 TTS Modal Split

Transportation Mode	AM Peak	
	Person Trips	Percentage (%)
Auto Driver	3546	60%
Auto Passenger	736	12%
Transit	546	9%
Cycle	50	1%
Walk	848	14%
Other	234	4%
Total	**5,960**	**100%**

Overall, during the AM peak hour period, 72% of trips are made by auto modes and 28% of trips are made by non-auto modes of transportation.

4.2 VEHICLE TRIP GENERATION

Trip generation for the proposed development has been determined based on Institute of Transportation Engineers (ITE) trip generation rates for Continuing Care Retirement Community (LUC 255). This land use code was chosen for the proposed development as it encompasses multiple elements of senior adult living. CCRCs combine aspects of independent living with increased care and include various combinations of senior adult (detached), senior adult (attached), congregate care, assisted living, and skilled nursing care uses. The trip generation rates are summarized in **Table 4-2** and detailed in **Appendix E**. It is important to note that the ITE trip generation rates already account for non-auto trips (about 10%). Accordingly, a non-auto trip reduction of 18% was applied to the trip generation rates. This is consistent with the non-auto trip reduction rates used in the GHD Report for 1357-1359 Dundas Street West.

Table 4-2 Trip Generation Summary

Land Use		Units	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
CCRC (LUC 255) *Fitted curve*	New Trips	342	43	23	66	42	62	104
	Trip Rate		0.13	0.07	0.19	0.12	0.18	0.30
	Non-Auto (18%)		8	4	12	8	11	19
Estimated Site Trips			**35**	**19**	**54**	**34**	**51**	**85**

The proposed development is expected to generate an additional 54 new trips in the AM peak hour (35 inbound, 19 outbound) and 85 new trips in the PM peak hour (34 inbound, 51 outbound).

4.3 VEHICLE TRIP DISTRIBUTION AND ASSIGNMENT

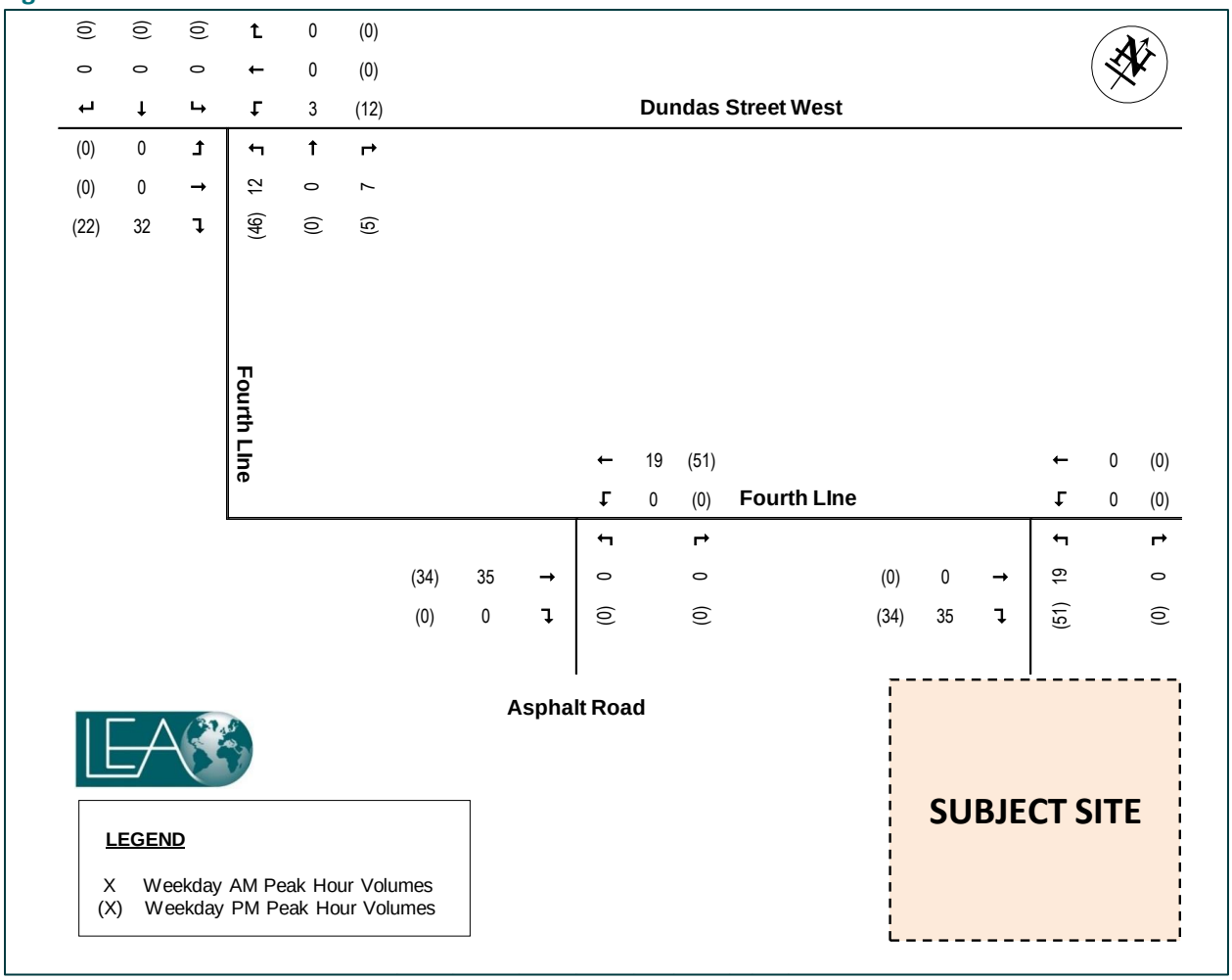
The trip distribution of site traffic was estimated using Transportation Tomorrow Survey (TTS) 2016 data. The TTS data were filtered for home-based trip purposes during the weekday AM peak period for inbound and outbound traffic. Trip assignment was subsequently determined based on the trip origin and destination, proposed site access, and the most logical routing. **Table 4-3** below summarizes the assumed trip distribution for this study.

Table 4-3 Directional Trip Distribution

Direction	Route	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
East	Dundas Street West	10%	35%	35%	10%
West	Dundas Street West	90%	65%	65%	90%
TOTAL		**100%**	**100%**	**100%**	**100%**

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

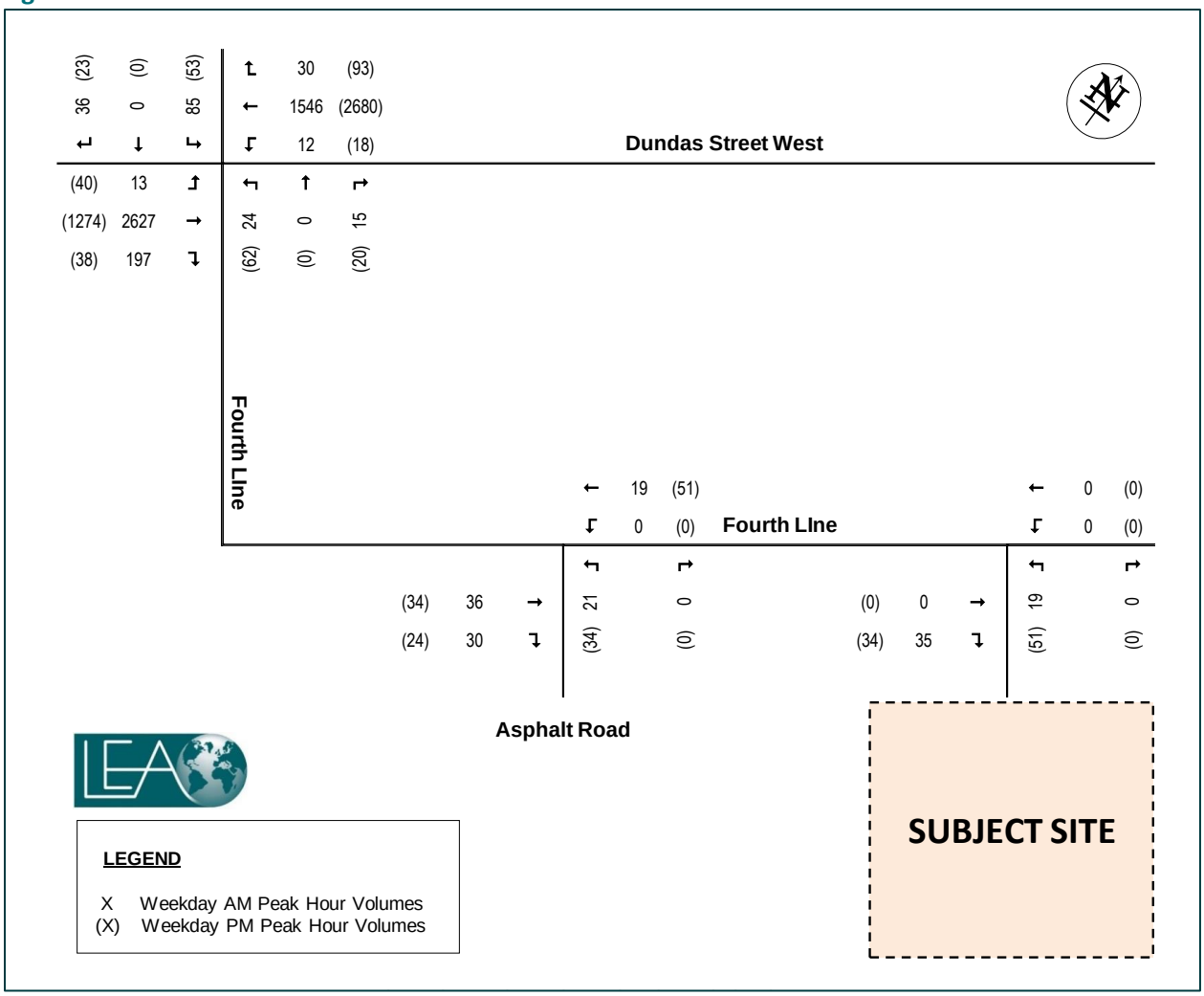
Figure 4-1 Site Generated Peak Hour Traffic Volumes



5 FUTURE TOTAL TRAFFIC CONDITIONS

Future total traffic is the sum of the future background volumes and site-generated traffic. The future total traffic volumes utilized for the intersection capacity analysis are illustrated in **Figure 5-1.**

Figure 5-1 Future Total Peak Hour Traffic Volumes



5.1 INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis was completed for the weekday AM and PM peak hours with the results for the studied signalized and unsignalized intersections summarized in **Table 5-1** and **Table 5-2**, respectively. The future background signal timing plans were maintained in future total analyses. Detailed capacity results are found in **Appendix F**.

Table 5-1 Future Total Capacity Analysis – Signalized Intersections

Intersection	Weekday AM Peak Hour								
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Fourth Line & Dundas Street West	0.91	21.4	C	EBL	0.39	64.7	E	3.4	10.6
				EBTR	0.97	26.4	C	178.3	#381.2
				WBL	0.36	64.0	E	3.1	10.1
				WBTR	0.55	8.4	A	49.0	108.8
				NBL	0.26	50.6	D	6.0	14.9
				NBTR	0.01	47.9	D	0.0	0.0
				SBL	0.60	57.3	E	21.8	38.2
				SBTR	0.02	48.0	D	0.0	0.0
Intersection	Weekday PM Peak Hour								
	V/C	Delay (s)	LOS	Movement	V/C	Delay (s)	LOS	Queue (m)	
								50th	95th
Fourth Line & Dundas Street West	0.86	17.6	B	EBL	0.45	58.2	E	10.1	22.3
				EBTR	0.42	6.2	A	31.1	78.6
				WBL	0.43	64.2	E	4.6	12.6
				WBTR	0.92	19.9	B	245.2	#347.8
				NBL	0.58	60.1	E	15.6	29.7
				NBTR	0.01	50.8	D	0.0	0.0
				SBL	0.49	56.1	E	13.4	26.3
				SBTR	0.01	50.8	D	0.0	0.0

Similar to future background traffic conditions, the signalized intersections within the study area are expected to operate at good overall LOS during both peak hours. All individual movements are operating with short delays and residual capacity.

Table 5-2 Future Total Capacity Analysis – Unsignalized Intersections

Intersection	Movement of Interest	Weekday AM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Asphalt Road & Fourth Line	NBLR	27	902	9.1	0.7	0.03	A
Site Access & Fourth Line	NBLR	21	1004	8.7	0.5	0.02	A
Intersection	Movement of Interest	Weekday PM Peak Hour					
		Flow Rate (vph)	Capacity (vph)	Control Delay (s)	95th Queue (m)	V/C	LOS
Asphalt Road & Fourth Line	NBLR	41	881	9.3	1.2	0.05	A
Site Access & Fourth Line	NBLR	55	1004	8.8	1.4	0.05	A

All unsignalized intersections are expected to continue operating at excellent LOS, with all movements operating with residual capacity and minimal delays under future total conditions for both peak hours. Therefore, the addition of site-generated traffic is expected to have a minimal impact on the overall intersection operations for the study area.

6 AREA DESIGN PLAN

The Town has requested an Area Design Plan to form part of the Development Application Submission. Accordingly, LEA has prepared has assessed two possible options for the extension of Glenayr Gate from its current termination just west of St. Volodymyr Property. It is our understanding that St. Volodymyr currently do not have any development plans. As such, these two options were developed to present the potential options if St. Volodymyr develops.

The first option consists of a cul-de-sac that terminates on the St. Volodymyr property and the second option consists of a connection to Fourth Line through the St. Volodymyr property. Both options are detailed in **Appendix G.**

Option 1

The first option provides a suitable terminus to Glenayr Gate as per Town of Oakville Standard Std. 7-6. The design satisfies the minimum road allowance of 20 m, minimum pavement width of 8.5 m and island radius of 7.25 m. The provision of a cul-de-sac will allow for the safe termination of Glenayr Gate and the traffic operations of our study area will not be impacted.

Option 2

The second option consists of an extension of Glenayr Gate to Fourth Line through the St. Volodymyr property. The roadway alignment has been designed to be consistent with TAC and Town of Oakville Standard Std. 7-6. This conceptual road connection will extend Glenayr Gate to Fourth Line via the approximate location of the existing driveway to St. Volodymyr Cemetery. The distance between the potential three-legged intersection and the development's proposed site driveway exceeds the recommended minimum corner clearance of 15.00 m set out in *TAC Geometric Design Guide for Canadian Roads Chapter 8 – Access* by providing a 36.29 m separation.

To further reinforce that the intersection spacing between the proposed development and the potential roadway is acceptable, it is important to note Fourth Line terminates 470-m to the east. Given the environmental sensitive area, there are no additional potential for additional development, hence, through traffic along Fourth Line will be limited and typical issues with through traffic impacts associated with closely space intersection is not of concern in this situation.

Furthermore, it is understood that the spacing of intersections has a significant impact on overall traffic operation, level of service and vehicular capacity of nearby signalized intersections. To ensure that the conceptual road location will not affect Dundas Street, under future total conditions, the maximum 95th percentile queue length was observed to be 29.7 m during the PM peak hour. Accordingly, as demonstrated in **Appendix G**, the potential three-legged intersection will provide 49.09 m of queue storage, hence, this road layout option is acceptable.

Conclusion

Overall, both options provide acceptable solutions to Glenayr Gate. As mentioned above, the proposed development does not preclude the extension of Glenayr Gate to Fourth Line both from a geometric design or traffic operation point of view.

7 VEHICULAR PARKING

This section will review the vehicular parking standards based on the Town's Zoning By-law for the subject site and provide justification to support the proposed parking provisions.

7.1 ZONING BY-LAW REQUIREMENTS

The vehicle parking requirements for the subject site were determined based on the Town of Oakville's Zoning By-law 2014-014. The parking requirements and proposed supply for the entire development is summarized in **Table 7-1**.

Table 7-1 Parking Summary

Use	Unit Type	Units	Required Parking Rate	Required Parking	Proposed Supply
Residential	Retirement Home	315	0.33 per assisted living unit and dwelling unit	104	152 + 5 barrier-free
	Independent Living Units	27	2.0 per dwelling unit	54	61
			Total Vehicular Parking	**158**	**218**

In accordance with Zoning By-Law 2014-014, the subject site is required to provide a total of 138 parking spaces consisting of 104 spaces for the retirement home suites and 34 spaces for the independent living units. The development is proposing a total of 218 parking spaces providing a surplus of 60 parking spaces. It is noted that of the total number of parking spaces required, 25% of the parking spaces required shall be designated as visitors parking spaces.

8 BICYCLE PARKING REVIEW

The bicycle parking requirements within Town of Oakville Zoning By-law 2014-014 were reviewed and applied to the entire development, as summarized in **Table 8-1.**

Table 8-1 Bicycle Parking Requirements

Land Use	Units	Rate	Requirement
Long Term Care Facility	315	The lesser of 5 or 0.25 per assisted living unit or dwelling unit	5
		Total Bicycle Parking	5

Based on the By-law requirements, the subject site is required to provide five (5) bicycle spaces. The proposed supply satisfies the By-law requirement.

9 LOADING REVIEW

According to the Town of Oakville's Zoning By-law 2014-014, there is no minimum number of loading spaces required. Should loading spaces be provided, the following regulations apply:

a) The minimum dimensions of a loading space are 3.5 metres in width and 12.0 metres in length, with a minimum vertical clearance of 4.2 metres.

b) A loading space shall abut the building for which the loading space is provided.

c) A loading space shall be set back 7.5 metres from any Residential Zone, except if it is located entirely within a structure. This subsection does not apply to a loading space located in a Residential Zone.

d) A loading space is not permitted: i) In any minimum yard; ii) Between the main wall closest to the flankage lot line and the flankage lot line in a flankage yard; and, iii) In any front yard.

The proposed development will provide two (2) loading spaces. A review of the functionality and accessibility of the proposed loading spaces was completed to determine that the proposed loading spaces can be accessed and egressed by the appropriate vehicles. The swept path diagrams are provided in **Appendix H**.

10 WASTE MANAGEMENT PLAN

As part of the rezoning application review process, the Region requires a Waste Management Plan in order to ensure that safe and efficient waste collection services are provided to the development. Based on discussions with Delmanor's Director of Building Services, the proposed development will provide a private waste collection service and it is anticipated that waste collection will occur three times a week.

Waste collection for the retirement building will take place within the proposed service lane and "T" – turnaround area located at the south end of the building. Furthermore, on-street collection will take place for the Independent Living Units (ILUs) through side loading waste collection vehicles. The access routes for the collection vehicles to and from the collection areas are provided in **Appendix H** (**Drawing 002** and **Drawing 003**). Overall, the proposed development plans can accommodate the waste collection vehicles in an acceptable manner.

11 CONCLUSIONS

- The subject site is currently vacant. The proposed development provides for the construction of an 8-storey seniors building providing 315 units consisting of assisted living units, memory care units, independent supportive living units and independent living suites. The development also provides 27 independent living units. A total of 218 parking spaces are proposed for the collective 342 units. Access to the subject site is provided via a full-movement driveway onto Fourth Line.
- Under existing conditions, Fourth Line & Dundas Street West is operating well with an overall level of service (LOS) of 'A' during both peak hours. All individual movements are operating with short delays with the exception of the WBL movement during the AM peak hour. However, it is noted that there is ample residual capacity available to the WBL movement and the high delay is due to the 120 second cycle length duration, as longer cycles produce higher delays. The unsignalized intersections within the study area are also operating well and within roadway capacity under existing traffic conditions during both peak hours.
- As part of the residential subdivision planned for the north side of Dundas Street West, a north-south public road connecting to Fourth Line is proposed. Accordingly, adjustments to the signal timing plan have been implemented to include the north-south public road connection.
- Under future background conditions, Fourth Line & Dundas Street West is expected to continue operating well with an overall level of service (LOS) of 'B' during both peak hours. All individual movements are operating with short delays with the exception of the WBL movement during the AM peak hour but maintains ample residual capacity. The unsignalized intersections are expected to operate at similar levels of service with the addition of background development traffic. All movements operate with significant residual capacity during both hours.
- The proposed development is expected to generate an additional 54 new trips in the AM peak hour (35 inbound, 19 outbound) and 85 new trips in the PM peak hour (34 inbound, 51 outbound).
- Under future total conditions, Fourth Line & Dundas Street West is expected to continue operating well with an overall level of service (LOS) of 'C' or better during both peak hours. All individual movements are operating with short delays and residual capacity. The unsignalized intersections are expected to continue operating at excellent LOS. Therefore, the addition of site-generated traffic is expected to have a minimal impact on the overall intersection operations for the study area.
- According to the Zoning By-law 2014-014, the subject site is required to provide a total of 158 parking spaces consisting of 104 spaces for the senior's residence units and 54 spaces for the seniors friendly independent living units. The development is proposing a total of 218 parking spaces providing a surplus of 60 parking spaces. Furthermore, the subject site is required to provide five (5) bicycle spaces. The proposed supply satisfies the By-law requirement.
- According to the Town of Oakville's Zoning By-law 2014-014, there is no minimum number of loading spaces required. However, the subject site is providing two (2) loading spaces.
- Based on our Area Design Plan review, the proposed development does not preclude the extension of Glenayr Gate to Fourth Line both from a geometric design or traffic operation point of view.

APPENDIX A

Existing Traffic Data & Signal Timing Plans

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 20253
Location: Fourth Ln & Dundas St W
Weather: Light Rain
Surveyor: May Yue & Belinda Wong

File Name : FourthLn&DundasStW-AM
Site Code : 20253005
Start Date : 2019-11-19
Page No : 1

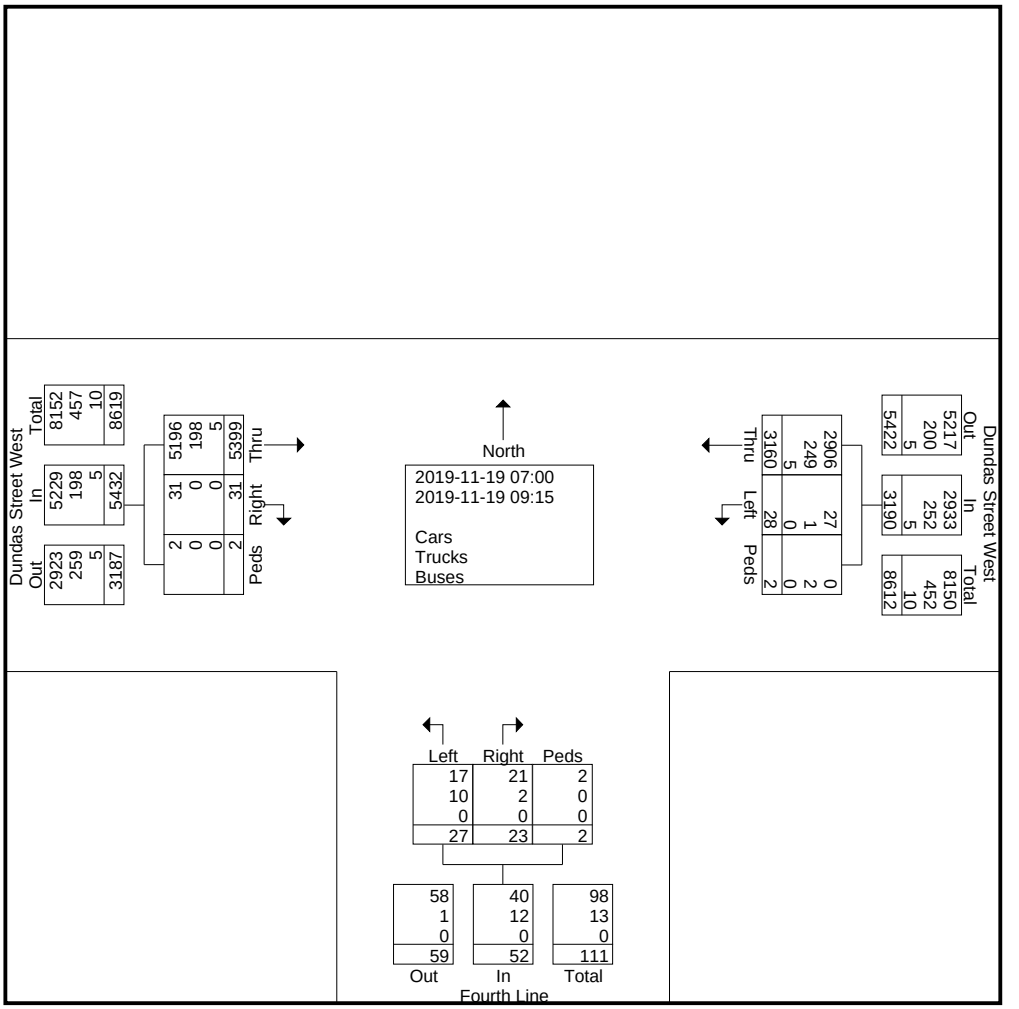
Groups Printed- Cars - Trucks - Buses

	Dundas Street West Westbound				Fourth Line Northbound				Dundas Street West Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00	1	188	0	189	1	1	0	2	467	0	0	467	658
07:15	1	214	0	215	3	1	1	5	628	3	0	631	851
07:30	1	279	0	280	0	1	0	1	611	2	0	613	894
07:45	3	396	1	400	4	1	0	5	659	5	0	664	1069
Total	6	1077	1	1084	8	4	1	13	2365	10	0	2375	3472
08:00	2	331	0	333	5	3	0	8	611	1	0	612	953
08:15	3	394	1	398	3	3	0	6	642	3	0	645	1049
08:30	4	416	0	420	6	6	0	12	451	6	0	457	889
08:45	2	369	0	371	1	3	0	4	522	4	0	526	901
Total	11	1510	1	1522	15	15	0	30	2226	14	0	2240	3792
09:00	4	272	0	276	2	4	0	6	434	2	2	438	720
09:15	7	301	0	308	2	0	1	3	374	5	0	379	690
Grand Total	28	3160	2	3190	27	23	2	52	5399	31	2	5432	8674
Apprch %	0.9	99.1	0.1		51.9	44.2	3.8		99.4	0.6	0		
Total %	0.3	36.4	0	36.8	0.3	0.3	0	0.6	62.2	0.4	0	62.6	
Cars	27	2906	0	2933	17	21	2	40	5196	31	2	5229	8202
% Cars	96.4	92	0	91.9	63	91.3	100	76.9	96.2	100	100	96.3	94.6
Trucks	1	249	2	252	10	2	0	12	198	0	0	198	462
% Trucks	3.6	7.9	100	7.9	37	8.7	0	23.1	3.7	0	0	3.6	5.3
Buses	0	5	0	5	0	0	0	0	5	0	0	5	10
% Buses	0	0.2	0	0.2	0	0	0	0	0.1	0	0	0.1	0.1

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : FourthLn&DundasStW-AM
Site Code : 20253005
Start Date : 2019-11-19
Page No : 2

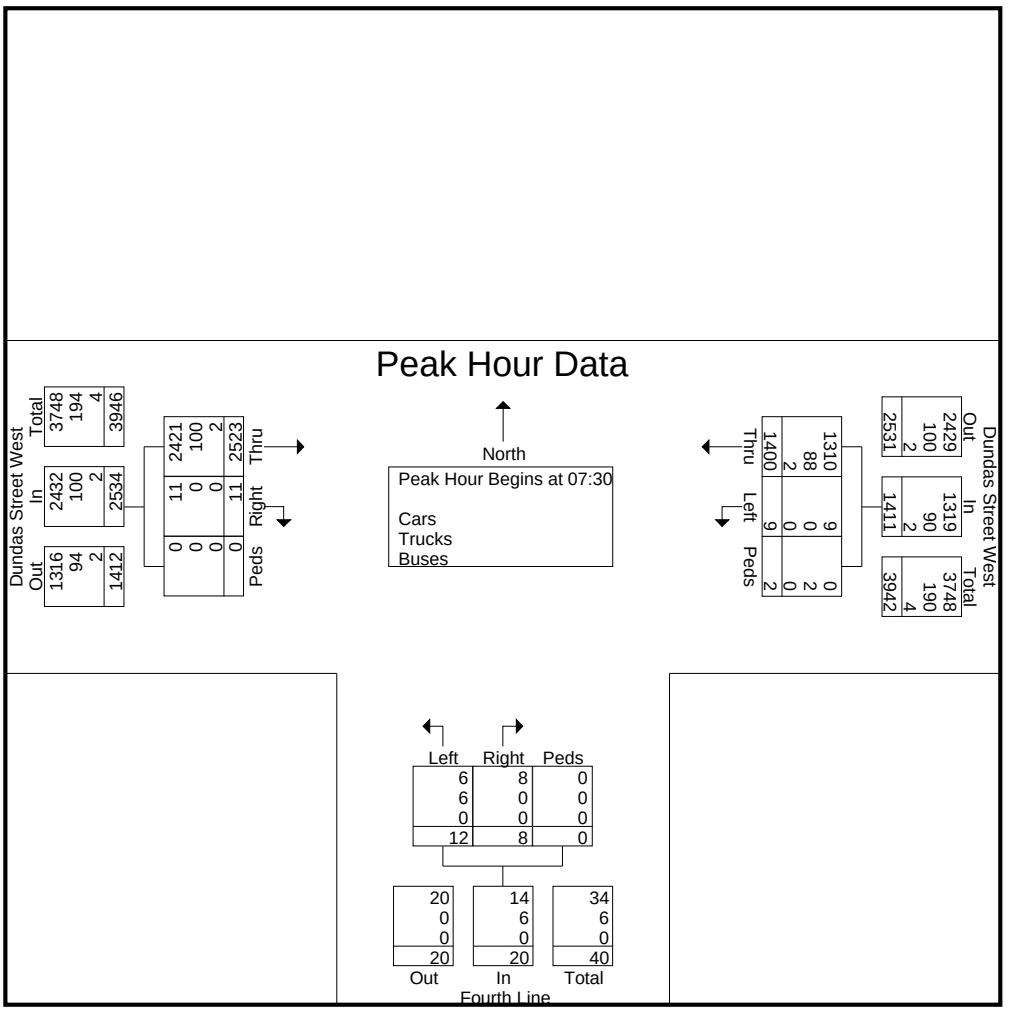


LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : FourthLn&DundasStW-AM
Site Code : 20253005
Start Date : 2019-11-19
Page No : 3

	Dundas Street West Westbound				Fourth Line Northbound				Dundas Street West Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 09:15 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30													
07:30	1	279	0	280	0	1	0	1	611	2	0	613	894
07:45	**3**	**396**	**1**	**400**	4	1	0	5	**659**	**5**	0	**664**	**1069**
08:00	2	331	0	333	**5**	**3**	0	**8**	611	1	0	612	953
08:15	3	394	1	398	3	3	0	6	642	3	0	645	1049
Total Volume	9	1400	2	1411	12	8	0	20	2523	11	0	2534	3965
% App. Total	0.6	99.2	0.1		60	40	0		99.6	0.4	0		
PHF	.750	.884	.500	.882	.600	.667	.000	.625	.957	.550	.000	.954	.927
Cars	9	1310	0	1319	6	8	0	14	2421	11	0	2432	3765
% Cars	100	93.6	0	93.5	50.0	100	0	70.0	96.0	100	0	96.0	95.0
Trucks	0	88	2	90	6	0	0	6	100	0	0	100	196
% Trucks	0	6.3	100	6.4	50.0	0	0	30.0	4.0	0	0	3.9	4.9
Buses	0	2	0	2	0	0	0	0	2	0	0	2	4
% Buses	0	0.1	0	0.1	0	0	0	0	0.1	0	0	0.1	0.1



LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 20253
Location: Fourth Ln & Dundas St W
Weather: Light Rain
Surveyor: May Yue & Belinda Wong

File Name : FourthLn&DundasStW-PM
Site Code : 20253005
Start Date : 2019-11-19
Page No : 1

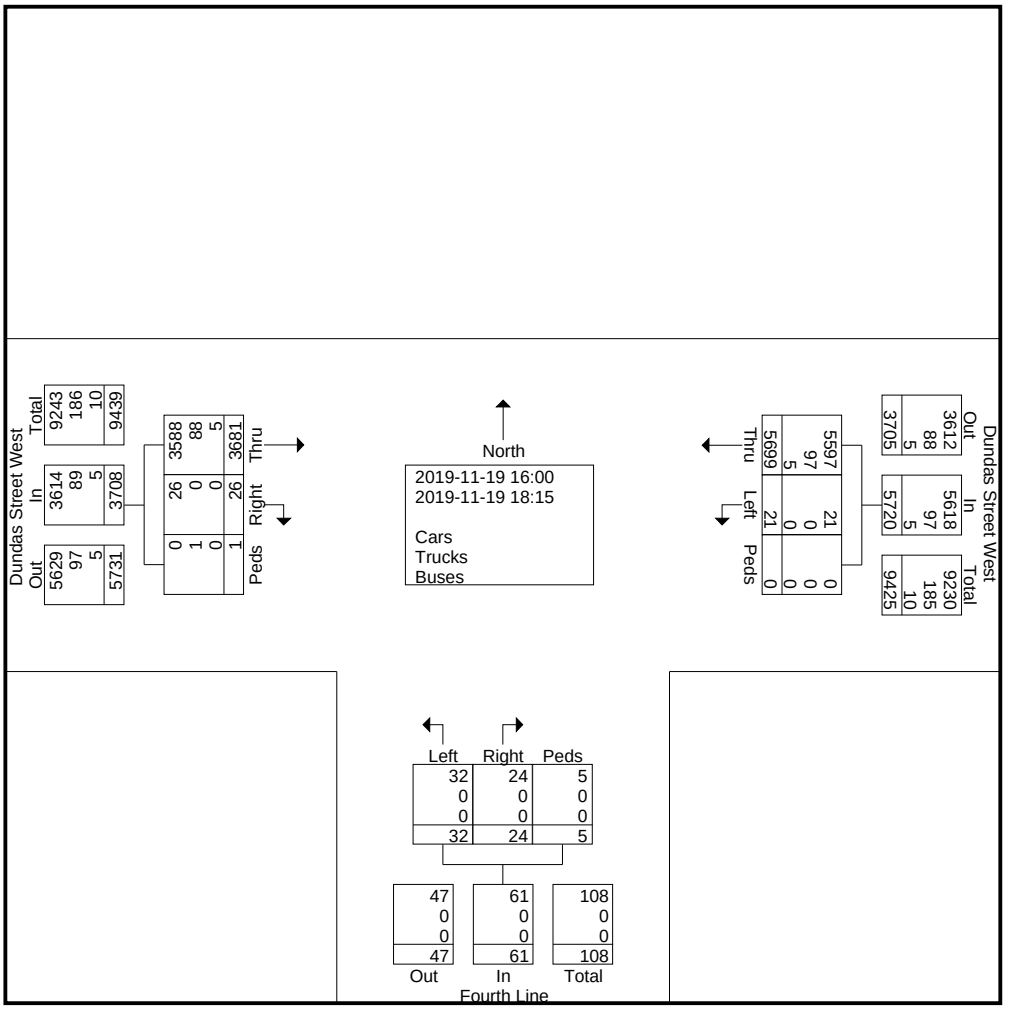
Groups Printed- Cars - Trucks - Buses

	Dundas Street West Westbound				Fourth Line Northbound				Dundas Street West Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
16:00	3	556	0	559	2	1	0	3	344	2	0	346	908
16:15	4	506	0	510	2	1	0	3	413	3	0	416	929
16:30	4	585	0	589	7	5	0	12	391	2	0	393	994
16:45	3	596	0	599	3	1	0	4	334	4	0	338	941
Total	14	2243	0	2257	14	8	0	22	1482	11	0	1493	3772
17:00	3	605	0	608	4	9	0	13	389	4	1	394	1015
17:15	0	617	0	617	6	3	3	12	431	5	0	436	1065
17:30	0	609	0	609	3	2	2	7	400	3	0	403	1019
17:45	0	573	0	573	1	0	0	1	362	3	0	365	939
Total	3	2404	0	2407	14	14	5	33	1582	15	1	1598	4038
18:00	2	547	0	549	4	1	0	5	312	0	0	312	866
18:15	2	505	0	507	0	1	0	1	305	0	0	305	813
Grand Total	21	5699	0	5720	32	24	5	61	3681	26	1	3708	9489
Apprch %	0.4	99.6	0		52.5	39.3	8.2		99.3	0.7	0		
Total %	0.2	60.1	0	60.3	0.3	0.3	0.1	0.6	38.8	0.3	0	39.1	
Cars	21	5597	0	5618	32	24	5	61	3588	26	0	3614	9293
% Cars	100	98.2	0	98.2	100	100	100	100	97.5	100	0	97.5	97.9
Trucks	0	97	0	97	0	0	0	0	88	0	1	89	186
% Trucks	0	1.7	0	1.7	0	0	0	0	2.4	0	100	2.4	2
Buses	0	5	0	5	0	0	0	0	5	0	0	5	10
% Buses	0	0.1	0	0.1	0	0	0	0	0.1	0	0	0.1	0.1

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : FourthLn&DundasStW-PM
Site Code : 20253005
Start Date : 2019-11-19
Page No : 2

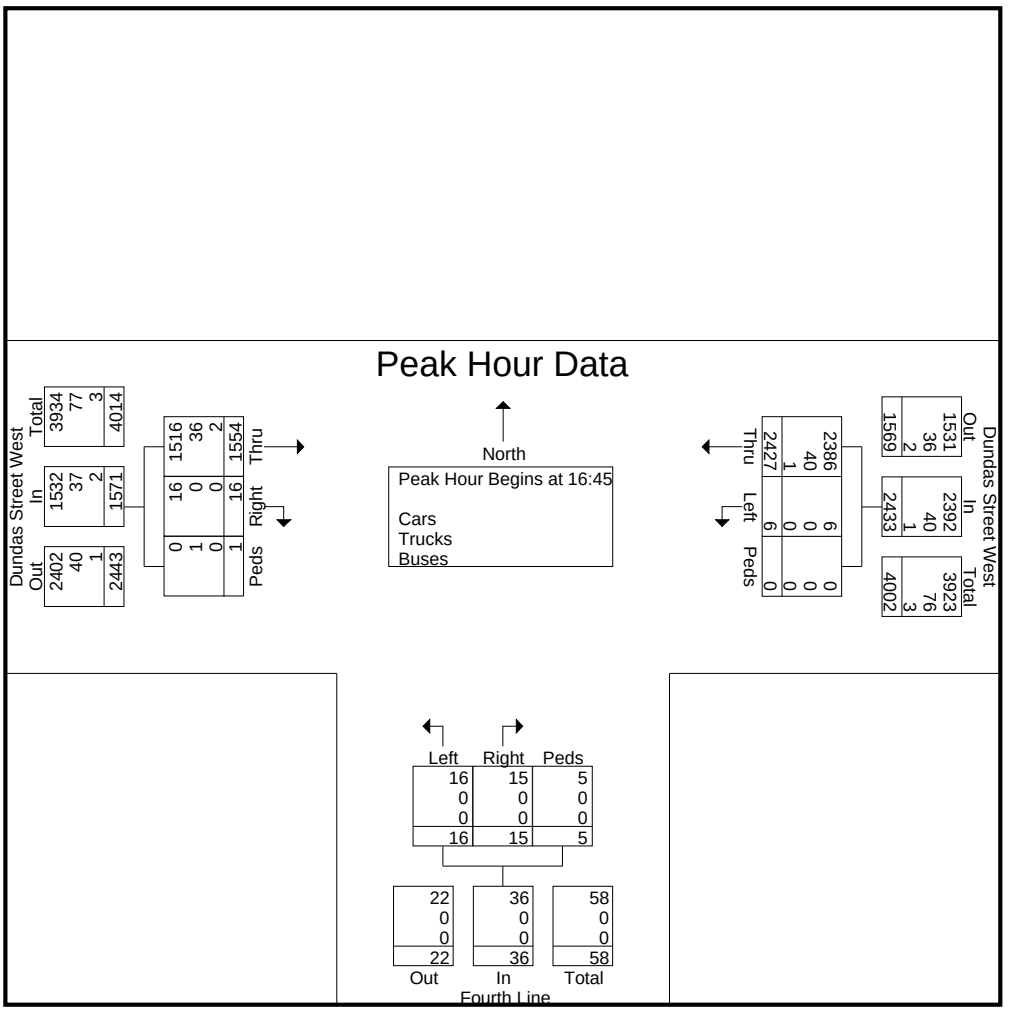


LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : FourthLn&DundasStW-PM
Site Code : 20253005
Start Date : 2019-11-19
Page No : 3

	Dundas Street West Westbound				Fourth Line Northbound				Dundas Street West Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 18:15 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:45													
16:45	**3**	596	0	599	3	1	0	4	334	4	0	338	941
17:00	3	605	0	608	4	**9**	0	**13**	389	4	**1**	394	1015
17:15	0	**617**	0	**617**	**6**	3	**3**	12	**431**	**5**	0	**436**	**1065**
17:30	0	609	0	609	3	2	2	7	400	3	0	403	1019
Total Volume	6	2427	0	2433	16	15	5	36	1554	16	1	1571	4040
% App. Total	0.2	99.8	0		44.4	41.7	13.9		98.9	1	0.1		
PHF	.500	.983	.000	.986	.667	.417	.417	.692	.901	.800	.250	.901	.948
Cars	6	2386	0	2392	16	15	5	36	1516	16	0	1532	3960
% Cars	100	98.3	0	98.3	100	100	100	100	97.6	100	0	97.5	98.0
Trucks	0	40	0	40	0	0	0	0	36	0	1	37	77
% Trucks	0	1.6	0	1.6	0	0	0	0	2.3	0	100	2.4	1.9
Buses	0	1	0	1	0	0	0	0	2	0	0	2	3
% Buses	0	0.0	0	0.0	0	0	0	0	0.1	0	0	0.1	0.1



LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 20253
Location: Asphalt Rd & Fourth Ln
Weather: Light Rain
Surveyor: Mile Mothibe

File Name : AsphaltRd&FourthLn-AM
Site Code : 20253026
Start Date : 2019-11-19
Page No : 1

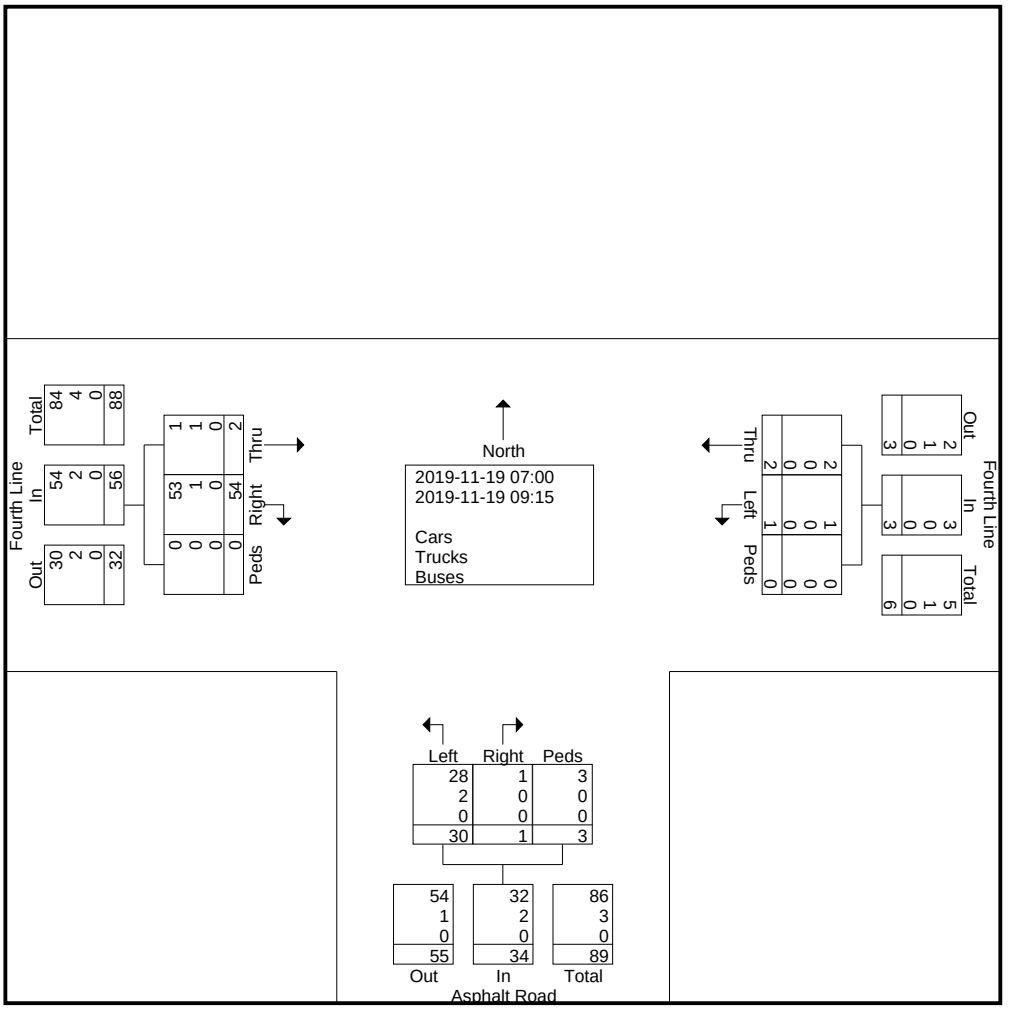
Groups Printed- Cars - Trucks - Buses

	Fourth Line Westbound				Asphalt Road Northbound				Fourth Line Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00	0	0	0	0	1	0	0	1	0	1	0	1	2
07:15	0	0	0	0	2	0	0	2	0	4	0	4	6
07:30	0	0	0	0	1	0	1	2	1	1	0	2	4
07:45	0	0	0	0	5	0	1	6	0	9	0	9	15
Total	0	0	0	0	9	0	2	11	1	15	0	16	27
08:00	0	0	0	0	4	0	0	4	1	2	0	3	7
08:15	0	0	0	0	3	0	0	3	0	11	0	11	14
08:30	0	0	0	0	9	0	0	9	0	8	0	8	17
08:45	0	1	0	1	1	1	0	2	0	3	0	3	6
Total	0	1	0	1	17	1	0	18	1	24	0	25	44
09:00	1	1	0	2	2	0	1	3	0	5	0	5	10
09:15	0	0	0	0	2	0	0	2	0	10	0	10	12
Grand Total	1	2	0	3	30	1	3	34	2	54	0	56	93
Apprch %	33.3	66.7	0		88.2	2.9	8.8		3.6	96.4	0		
Total %	1.1	2.2	0	3.2	32.3	1.1	3.2	36.6	2.2	58.1	0	60.2	
Cars	1	2	0	3	28	1	3	32	1	53	0	54	89
% Cars	100	100	0	100	93.3	100	100	94.1	50	98.1	0	96.4	95.7
Trucks	0	0	0	0	2	0	0	2	1	1	0	2	4
% Trucks	0	0	0	0	6.7	0	0	5.9	50	1.9	0	3.6	4.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : AsphaltRd&FourthLn-AM
Site Code : 20253026
Start Date : 2019-11-19
Page No : 2

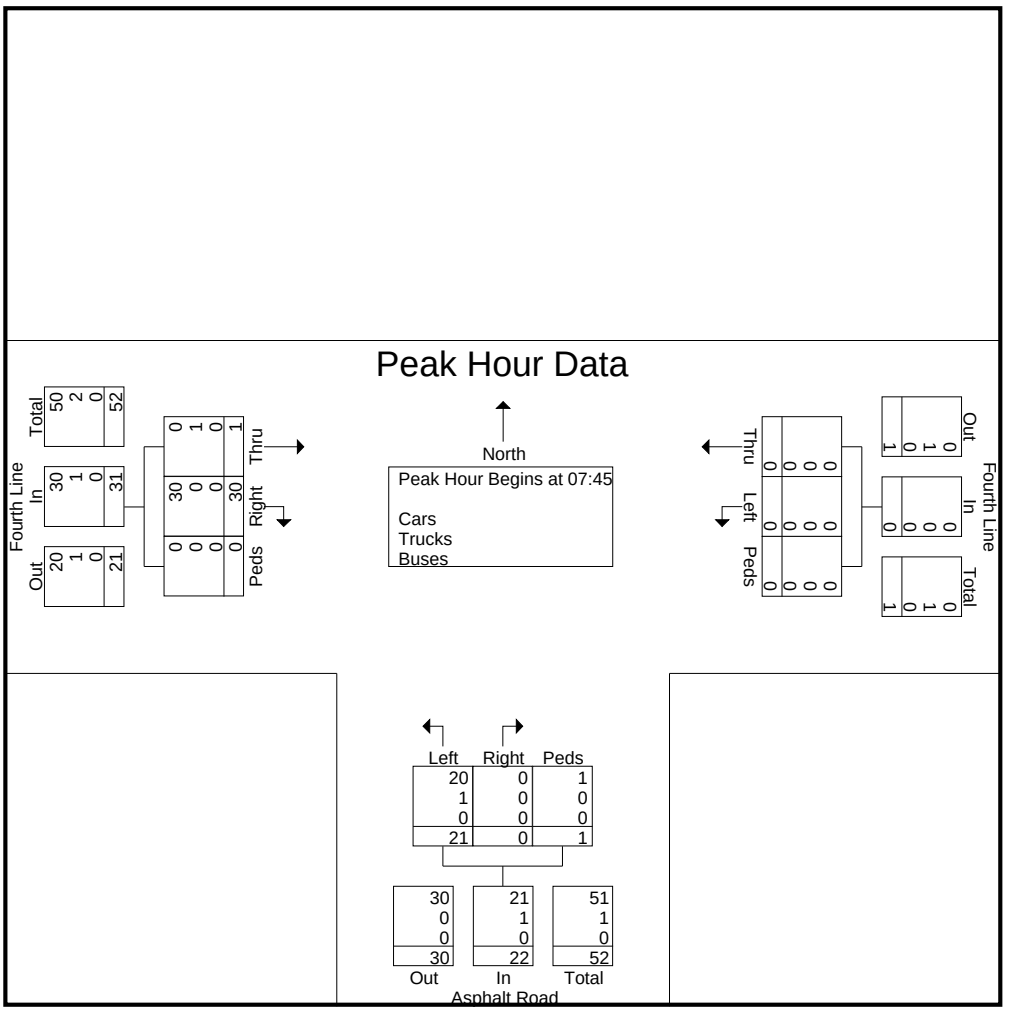


LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : AsphaltRd&FourthLn-AM
Site Code : 20253026
Start Date : 2019-11-19
Page No : 3

	Fourth Line Westbound				Asphalt Road Northbound				Fourth Line Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 09:15 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45													
07:45	0	0	0	0	5	0	**1**	6	0	9	0	9	15
08:00	0	0	0	0	4	0	0	4	**1**	2	0	3	7
08:15	0	0	0	0	3	0	0	3	0	**11**	0	**11**	14
08:30	0	0	0	0	**9**	0	0	**9**	0	8	0	8	**17**
Total Volume	0	0	0	0	21	0	1	22	1	30	0	31	53
% App. Total	0	0	0		95.5	0	4.5		3.2	96.8	0		
PHF	.000	.000	.000	.000	.583	.000	.250	.611	.250	.682	.000	.705	.779
Cars	0	0	0	0	20	0	1	21	0	30	0	30	51
% Cars	0	0	0	0	95.2	0	100	95.5	0	100	0	96.8	96.2
Trucks	0	0	0	0	1	0	0	1	1	0	0	1	2
% Trucks	0	0	0	0	4.8	0	0	4.5	100	0	0	3.2	3.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0



LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 20253
Location: Asphalt Rd & Fourth Ln
Weather: Light Rain
Surveyor: Mile Mothibe

File Name : AsphaltRd&FourthLn-PM
Site Code : 20253026
Start Date : 2019-11-19
Page No : 1

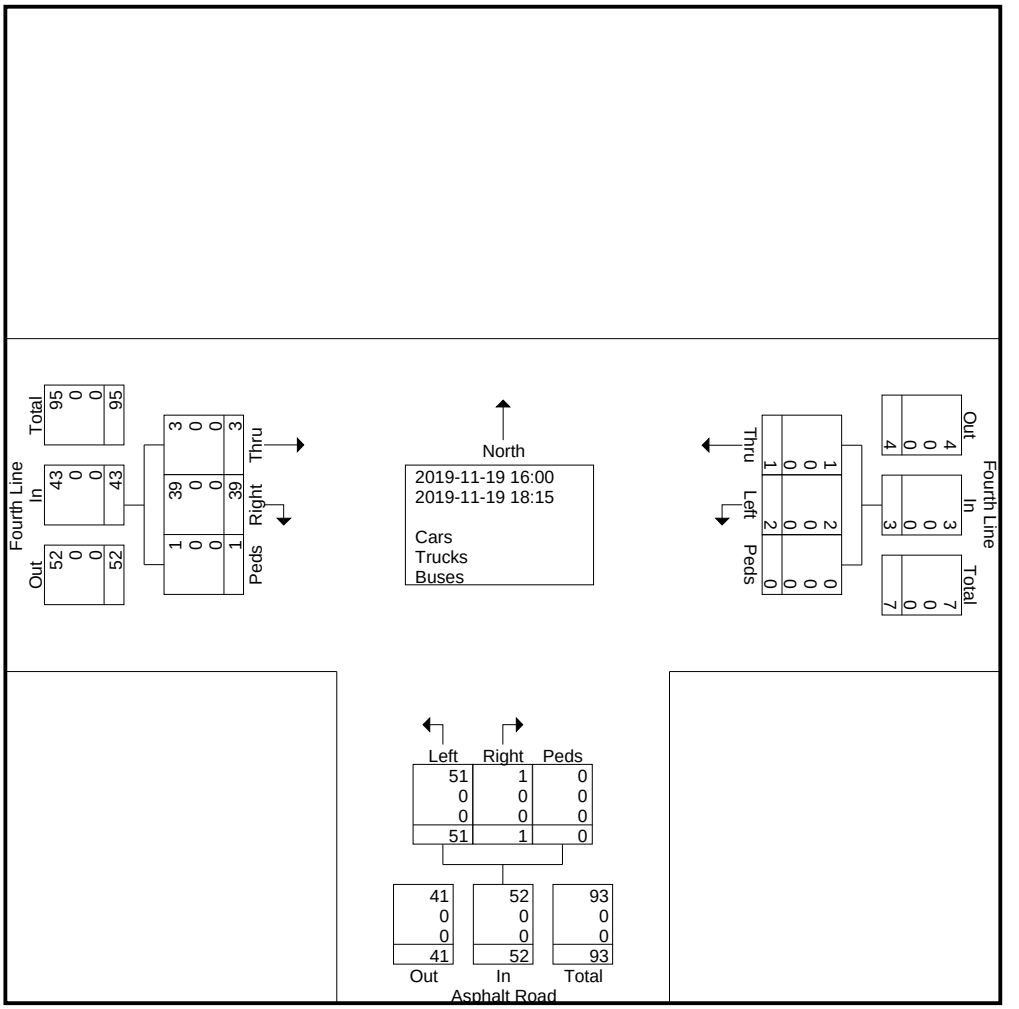
Groups Printed- Cars - Trucks - Buses

	Fourth Line Westbound				Asphalt Road Northbound				Fourth Line Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
16:00	0	0	0	0	3	0	0	3	0	3	0	3	6
16:15	1	0	0	1	2	0	0	2	2	6	0	8	11
16:30	0	0	0	0	10	0	0	10	0	6	0	6	16
16:45	0	0	0	0	4	0	0	4	0	7	0	7	11
Total	1	0	0	1	19	0	0	19	2	22	0	24	44
17:00	0	0	0	0	11	0	0	11	0	7	0	7	18
17:15	0	0	0	0	9	0	0	9	0	4	1	5	14
17:30	0	0	0	0	5	0	0	5	0	3	0	3	8
17:45	0	0	0	0	2	0	0	2	0	2	0	2	4
Total	0	0	0	0	27	0	0	27	0	16	1	17	44
18:00	0	0	0	0	4	0	0	4	0	0	0	0	4
18:15	1	1	0	2	1	1	0	2	1	1	0	2	6
Grand Total	2	1	0	3	51	1	0	52	3	39	1	43	98
Apprch %	66.7	33.3	0		98.1	1.9	0		7	90.7	2.3		
Total %	2	1	0	3.1	52	1	0	53.1	3.1	39.8	1	43.9	
Cars	2	1	0	3	51	1	0	52	3	39	1	43	98
% Cars	100	100	0	100	100	100	0	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : AsphaltRd&FourthLn-PM
Site Code : 20253026
Start Date : 2019-11-19
Page No : 2



LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : AsphaltRd&FourthLn-PM
Site Code : 20253026
Start Date : 2019-11-19
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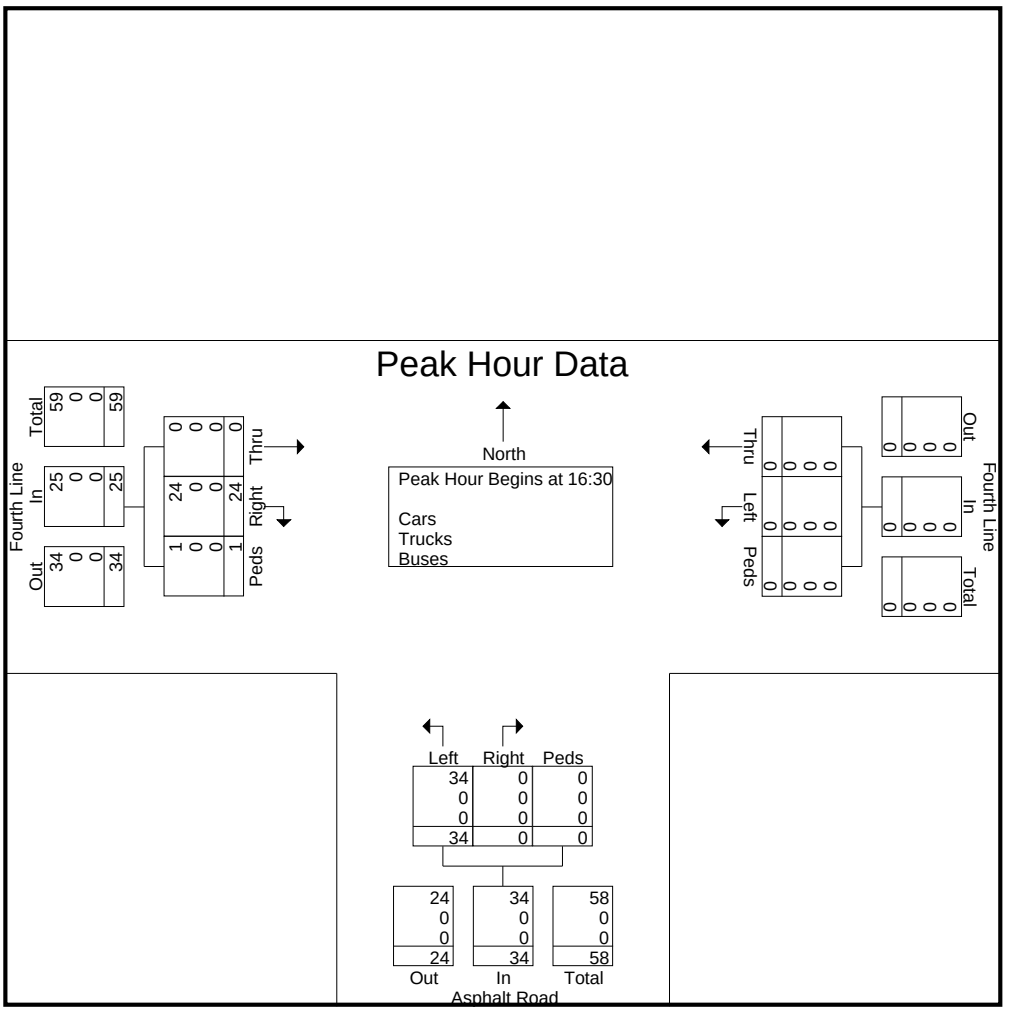
	Fourth Line Westbound				Asphalt Road Northbound				Fourth Line Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 18:15 - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 16:30													
16:30	0	0	0	0	10	0	0	10	0	6	0	6	16
16:45	0	0	0	0	4	0	0	4	0	**7**	0	**7**	11
17:00	0	0	0	0	**11**	0	0	**11**	0	7	0	7	**18**
17:15	0	0	0	0	9	0	0	9	0	4	**1**	5	14
Total Volume	0	0	0	0	34	0	0	34	0	24	1	25	59
% App. Total	0	0	0		100	0	0		0	96	4		
PHF	.000	.000	.000	.000	.773	.000	.000	.773	.000	.857	.250	.893	.819
Cars	0	0	0	0	34	0	0	34	0	24	1	25	59
% Cars	0	0	0	0	100	0	0	100	0	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0



Town of Oakville, ON

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Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Configuration Controller Sequence

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Hardware Alternate Sequence Enable: No

Town of Oakville, ON

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Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X	X						

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: No
Enable SDLC Stop Time: No
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green																
Yellow																
Red																

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

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REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Configuration Communications 1 (SDLC)

Ethernet Port Configuration (MM) 1-5-1

DHCP Enable:	No
Controller IP:	172.16.2.107
Subnet Mask:	255.255.0.0
Default Gateway IP:	172.16.0.254
Server IP:	10.104.0.1

NTCIP (MM) 1-5-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2 Priority (Port C50S for 2070):	4
Port 3A Priority (Port C21S for 2070):	3
Port 3B Priority (Port C22S for 2070):	2

Port Configuration (MM) 1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Comm Module	FSK	Telem	Telem
Protocol	NTCIP	NTCIP	ECPIP
Enable	No	No	Yes
Data Rate (BPS)	9600	9600	1200
Data, Parity, Stop	8 N 1	8 N 1	8 O 1
Address	0	0	4
Telemetry Response Delay	0.0	0.0	1.0
Duplex - Half or Full	Half	Full	Full
Flow Control	No	Yes	Yes
Group Address	0	0	0
Single Flag Enable	Yes	Yes	Yes
RTS to CTS Delay	n/a	n/a	3.0
RTS Turn Off Delay	n/a	n/a	2.0
Dropout Time	10	10	10
Early RTS	n/a	n/a	No
Telemetry Mode	n/a	n/a	FSK
ATCS Railroad	0	n/a	n/a
ATCS Railroad Line	0	n/a	n/a
ATCS Group	0	n/a	n/a
Wayside Device	0	n/a	n/a
ATC Device	0	n/a	n/a
Wayside Subnode	0	n/a	n/a
ATC Subnode	0	n/a	n/a

ECPIP (MM) 1-5-6

Controller Address:	4
Expanded System Detector Address:	0

System Detector Assignment

System Detector	Local Detector

Wireless Configuration (MM) 1-5-7

Wireless Channel Number:	1
Wireless Access Code:	327423274

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REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	Yes
Switch to Graphics Mode:	No
LED Mode:	Auto
Display Mode:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 32.66.10
OS (Boot) Version: 06.07.00

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REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control

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REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Logic Processor Page 2

Logic Statements (MM) 1-8-2

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Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Min Green	7	20	0	0	0	20	0	7	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	7	0	7	0	27	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	4.0	5.0	0.0	0.0	0.0	5.0	0.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 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	0.0	0.0	0.0	0.0
Max1	17	60	0	0	0	60	0	10	35	35	35	35	35	35	35	35
Max2	0	40	0	0	0	40	0	7	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.7	3.0	3.0	3.0	3.7	3.0	3.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.3	1.0	1.0	1.0	2.3	1.0	2.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

Plan 2 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 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	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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

Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

Plan 3 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 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	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

Plan 4 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 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	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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

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Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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Controller Pedestrian Overlaps
Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

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Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	.
3	.
4	.
5	.
6	.
7	.
8	Y
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap

Flash Thru Mon: Yes
Flash Time: 0
All Red: 2
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: Yes
Exit Flash: W
Minimum Flash: 8
Mimimum Recall: No
Cycle Through Phase: No

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Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II				X				X								
Dual Entry		X				X										
Cond Service																
Cond Reservice																
Ped Re-Service		X														
Rest In Walk																
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall																
Max Recall																
Soft Recall																
No Rest																
AI Calc																

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Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	TBC	System Format	STD
Splits In	Percent	Offsets In	Percent
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	Yes
Local Zero Override	Yes	FO Added Ini Green	No
Re-sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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Coordination Pattern Data

Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Percent
Cycle	120	Std (COS)	9	Offsets In	Percent
Offset Value	87%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 1)	10	62	0	0	0	72	0	28	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	72%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Percent
Cycle	120	Std (COS)	17	Offsets In	Percent
Offset Value	86%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 2)	10	55	0	0	0	65	0	35	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	65%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Percent
Cycle	120	Std (COS)	25	Offsets In	Percent
Offset Value	76%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 3)	10	55	0	0	0	65	0	35	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	65%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Percent
Cycle	120	Std (COS)	33	Offsets In	Percent
Offset Value	86%	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Splits (Split Pat 4)	10	55	0	0	0	65	0	35	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	65%	100%	0%	0%

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

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Coordination Split Pattern

Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Split (percent)	10	62	0	0	0	72	0	28	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	72%	100%	0%	0%

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Split (percent)	10	55	0	0	0	65	0	35	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	65%	100%	0%	0%

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Split (percent)	10	55	0	0	0	65	0	35	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	65%	100%	0%	0%

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	N	E-T	N	N	N	W-T	N	N-T	N	N	N	N	N	N	N	N
Split (percent)	10	55	0	0	0	65	0	35	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	65%	100%	0%	0%

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Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Veh	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases																
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	10	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	Yes	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	7	3	4.0	2.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	2.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	0	0.0	0	4.0	2.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Preempt **Preempt Filtering**
Enable Preempt Filtering & TSP/SCP
(MM) 4-2

Input	Solid	Pulsing
1	...BYPASSED...	...BYPASSED...
2	...BYPASSED...	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

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Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP
Free Default Pattern: 120
Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255

Town of Oakville, ON

ECONOLITE
CONTROL PRODUCTS, INC.
Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Time Base Clock/Calendar
Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	03:15
SYNC Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	3:30:00
Standard Time From GMT:	0

Town of Oakville, ON

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REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1 - "1"

Pattern	1	Override Sys	No
Timing Plan	0	Sequence	1
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2 - "2"

Pattern	2	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3 - "3"

Pattern	3	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4 - "4"

Pattern	4	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 5 - "5"

Pattern	5	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Town of Oakville, ON

ECONOLITE
CONTROL PRODUCTS, INC.
Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1 - "1"

Event	Action Plan	Start Time
1	1	06:00
2	2	10:00
3	3	15:15
4	4	19:00
5	5	22:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Town of Oakville, ON

ECONOLITE CONTROL PRODUCTS, INC.

Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Time Base Exceptions
Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan

Town of Oakville, ON

ECONOLITE CONTROL PRODUCTS, INC.

Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Called Phase	Type

Vehicle Detector Plan Number - 2

Veh Detector	Called Phase	Type

Vehicle Detector Plan Number - 3

Veh Detector	Called Phase	Type

Vehicle Detector Plan Number - 4

Veh Detector	Called Phase	Type

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	Yes	
2	S-STANDARD	Yes	
3	S-STANDARD	Yes	
4	S-STANDARD	Yes	
5	S-STANDARD	Yes	
6	S-STANDARD	Yes	
7	S-STANDARD	Yes	
8	S-STANDARD	Yes	
9	S-STANDARD	Yes	
10	S-STANDARD	Yes	
11	S-STANDARD	Yes	
12	S-STANDARD	Yes	
13	S-STANDARD	Yes	
14	S-STANDARD	Yes	
15	S-STANDARD	Yes	
16	S-STANDARD	Yes	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	

40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	
48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	
60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	
63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	8	No	Yes	5.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Town of Oakville, ON

ECONOLITE CONTROL PRODUCTS, INC.

Solutions that Move the World™

REG1223 - Dundas St @ Fourth Line - Econolite Type - Cobalt

Detectors

Detectors - Pg 2

Log - Speed Detector Setup (MM) 6-4

NTCIP Log Period: 60 ECPI Log Period: 0 Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5

Veh Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Pedestrian Detector Diagnostics (MM) 6-6

Ped Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier

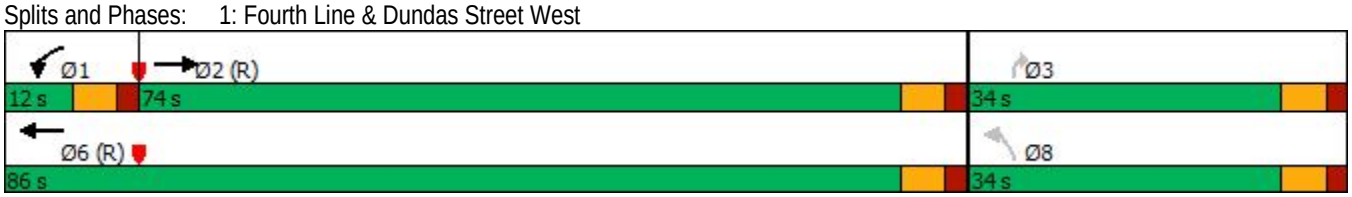
APPENDIX B

Intersection Capacity Analysis Results – Existing Conditions

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	2379	9	1400	12	8
Future Volume (vph)	2379	9	1400	12	8
Turn Type	NA	Prot	NA	Perm	Perm
Protected Phases	2	1	6		
Permitted Phases				8	3
Detector Phase	2	1	6	8	3
Switch Phase					
Minimum Initial (s)	68.0	6.0	80.0	28.0	28.0
Minimum Split (s)	74.0	12.0	86.0	34.0	34.0
Total Split (s)	74.0	12.0	86.0	34.0	34.0
Total Split (%)	61.7%	10.0%	71.7%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effct Green (s)	109.6	6.2	112.0	28.0	28.0
Actuated g/C Ratio	0.91	0.05	0.93	0.23	0.23
v/c Ratio	0.61	0.12	0.33	0.05	0.02
Control Delay	7.2	57.3	2.7	36.4	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	57.3	2.7	36.4	18.9
LOS	A	E	A	D	B
Approach Delay	7.2		3.0	29.2	
Approach LOS	A		A	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 100.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Fourth Line & Dundas Street West



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2735	10	1505	13	9
v/c Ratio	0.61	0.12	0.33	0.05	0.02
Control Delay	7.2	57.3	2.7	36.4	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	57.3	2.7	36.4	18.9
Queue Length 50th (m)	0.0	2.4	0.0	2.5	0.0
Queue Length 95th (m)	#280.4	8.3	70.2	8.1	4.5
Internal Link Dist (m)	245.1		308.6	24.6	
Turn Bay Length (m)		150.0			
Base Capacity (vph)	4499	86	4567	280	377
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.12	0.33	0.05	0.02

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2379	165	9	1400	12	8
Future Volume (vph)	2379	165	9	1400	12	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.6	3.6	3.0	3.6	3.6	3.6
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	4927		1685	4893	1203	1589
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	4927		1685	4893	1203	1589
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2558	177	10	1505	13	9
RTOR Reduction (vph)	3	0	0	0	0	9
Lane Group Flow (vph)	2732	0	10	1505	13	0
Confl. Peds. (#/hr)						2
Heavy Vehicles (%)	4%	8%	0%	6%	50%	0%
Turn Type	NA		Prot	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases					8	3
Actuated Green, G (s)	95.2		1.2	102.4	5.6	5.6
Effective Green, g (s)	95.2		1.2	102.4	5.6	5.6
Actuated g/C Ratio	0.79		0.01	0.85	0.05	0.05
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3908		16	4175	56	74
v/s Ratio Prot	c0.55		0.01	c0.31		
v/s Ratio Perm					c0.01	0.00
v/c Ratio	0.70		0.62	0.36	0.23	0.01
Uniform Delay, d1	5.8		59.2	1.9	55.1	54.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		57.6	0.2	2.1	0.0
Delay (s)	6.8		116.8	2.1	57.3	54.6
Level of Service	A		F	A	E	D
Approach Delay (s)	6.8			2.9	56.2	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	30	0	0	21	0
Future Volume (Veh/h)	1	30	0	0	21	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	1	38	0	0	27	0
Pedestrians					1	
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)	111					
pX, platoon unblocked						
vC, conflicting volume			40		21	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		21	21
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		97	100
cM capacity (veh/h)			1581		987	1061

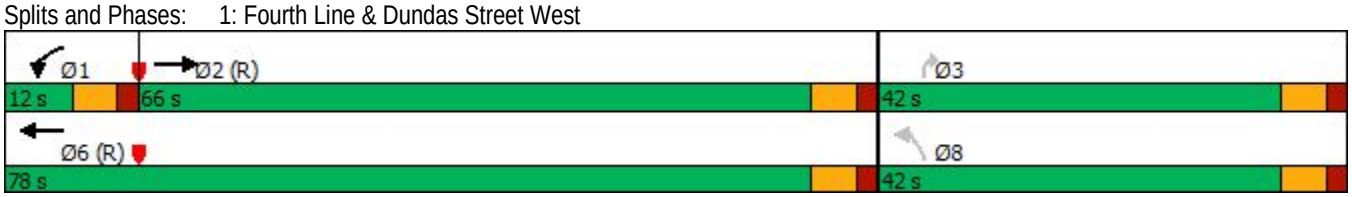
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	39	0	27
Volume Left	0	0	27
Volume Right	38	0	0
cSH	1700	1700	987
Volume to Capacity	0.02	0.00	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		3.6	
Intersection Capacity Utilization		13.7%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	1154	6	2427	16	15
Future Volume (vph)	1154	6	2427	16	15
Turn Type	NA	Prot	NA	Perm	Perm
Protected Phases	2	1	6		
Permitted Phases				8	3
Detector Phase	2	1	6	8	3
Switch Phase					
Minimum Initial (s)	60.0	6.0	72.0	36.0	36.0
Minimum Split (s)	66.0	12.0	78.0	42.0	42.0
Total Split (s)	66.0	12.0	78.0	42.0	42.0
Total Split (%)	55.0%	10.0%	65.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effct Green (s)	108.0	6.1	110.4	36.0	36.0
Actuated g/C Ratio	0.90	0.05	0.92	0.30	0.30
v/c Ratio	0.27	0.07	0.55	0.03	0.03
Control Delay	5.2	56.0	5.6	30.1	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	56.0	5.6	30.1	13.1
LOS	A	E	A	C	B
Approach Delay	5.2		5.7	21.8	
Approach LOS	A		A	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 5.7	Intersection LOS: A
Intersection Capacity Utilization 100.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: Fourth Line & Dundas Street West



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1232	6	2555	17	16
v/c Ratio	0.27	0.07	0.55	0.03	0.03
Control Delay	5.2	56.0	5.6	30.1	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	56.0	5.6	30.1	13.1
Queue Length 50th (m)	0.0	1.5	0.0	3.0	0.0
Queue Length 95th (m)	84.3	6.1	198.3	8.7	5.5
Internal Link Dist (m)	245.1		308.6	24.6	
Turn Bay Length (m)		150.0			
Base Capacity (vph)	4567	91	4678	540	495
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.07	0.55	0.03	0.03

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1154	16	6	2427	16	15
Future Volume (vph)	1154	16	6	2427	16	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	0.91		1.00	0.91	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	5074		1805	5085	1801	1615
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	5074		1805	5085	1801	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1215	17	6	2555	17	16
RTOR Reduction (vph)	0	0	0	0	0	15
Lane Group Flow (vph)	1232	0	6	2555	17	1
Confl. Peds. (#/hr)		5	5		1	
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Turn Type	NA		Prot	NA	Perm	Perm
Protected Phases	2		1	6		
Permitted Phases					8	3
Actuated Green, G (s)	93.6		1.2	100.8	7.2	7.2
Effective Green, g (s)	93.6		1.2	100.8	7.2	7.2
Actuated g/C Ratio	0.78		0.01	0.84	0.06	0.06
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	3957		18	4271	108	96
v/s Ratio Prot	0.24		0.00	c0.50		
v/s Ratio Perm					c0.01	0.00
v/c Ratio	0.31		0.33	0.60	0.16	0.01
Uniform Delay, d1	3.8		59.0	3.1	53.5	53.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		10.6	0.6	0.7	0.0
Delay (s)	4.0		69.6	3.7	54.2	53.1
Level of Service	A		E	A	D	D
Approach Delay (s)	4.0			3.9	53.7	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	24	0	0	34	0
Future Volume (Veh/h)	0	24	0	0	34	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	29	0	0	41	0
Pedestrians	1					
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)	111					
pX, platoon unblocked						
vC, conflicting volume			29		16	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			29		16	14
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		96	100
cM capacity (veh/h)			1597		1007	1071

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	29	0	41
Volume Left	0	0	41
Volume Right	29	0	0
cSH	1700	1700	1007
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (m)	0.0	0.0	1.0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

Background Developments

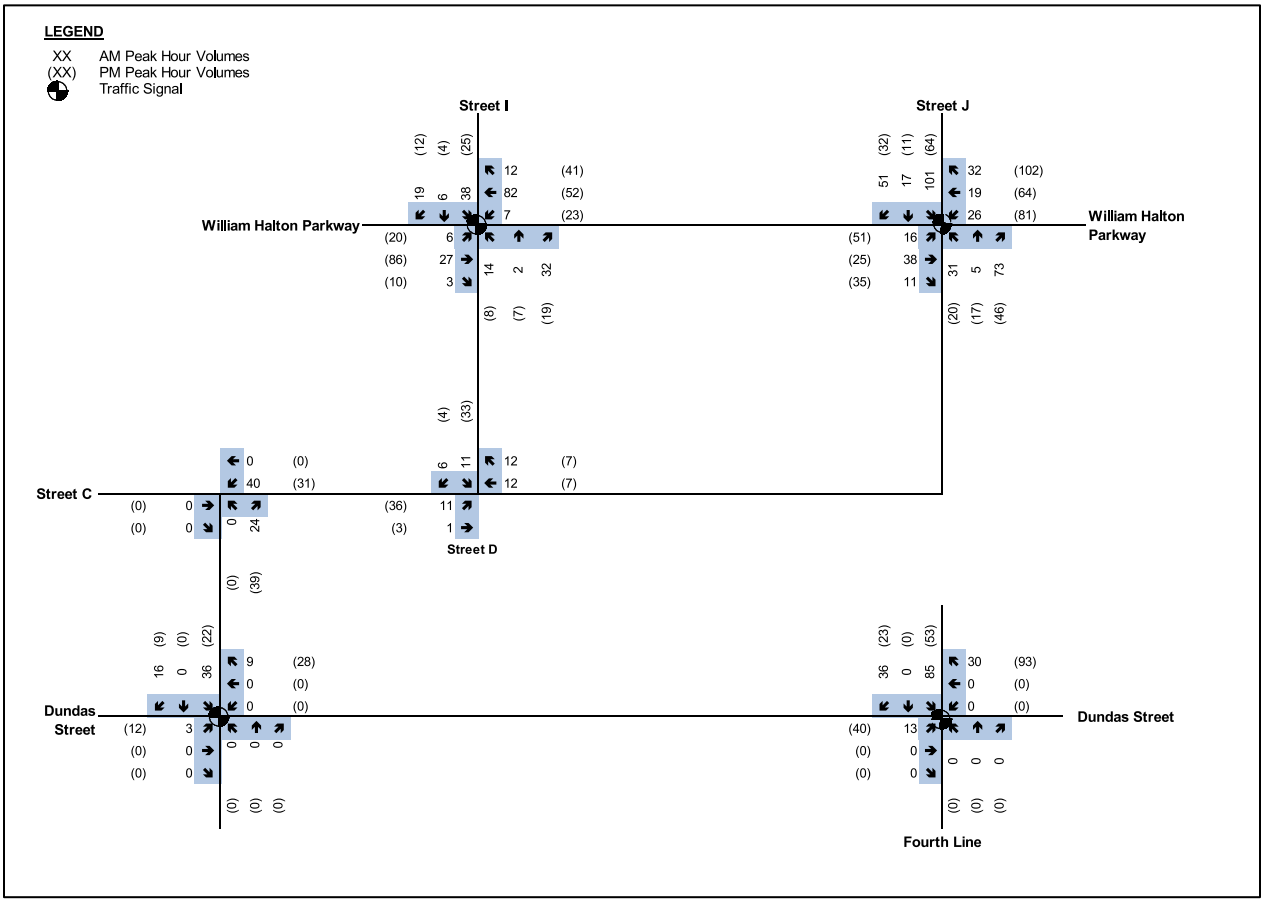


Figure 9 Estimated Site Trips Ultimate

6. Future Total Traffic Conditions

The future total traffic conditions was derived by combining the future background traffic volumes with the corresponding estimate of the site generated traffic.

6.1 Future Total Interim Conditions

Figure 10 summarizes the future total traffic volumes during the weekday a.m. and p.m. peak hours for the Interim Conditions.

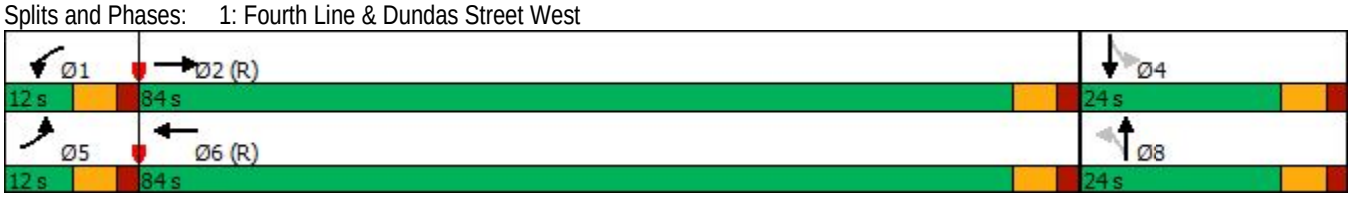
APPENDIX D

Intersection Capacity Analysis Results – Future Background Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	13	2627	9	1546	12	0	85	0
Future Volume (vph)	13	2627	9	1546	12	0	85	0
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	70.0	5.0	70.0	4.0	4.0	5.0	5.0
Minimum Split (s)	12.0	80.0	12.0	80.0	24.0	24.0	24.0	24.0
Total Split (s)	12.0	84.0	12.0	84.0	24.0	24.0	24.0	24.0
Total Split (%)	10.0%	70.0%	10.0%	70.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	6.2	92.8	6.0	90.1	12.8	12.8	12.8	12.8
Actuated g/C Ratio	0.05	0.77	0.05	0.75	0.11	0.11	0.11	0.11
v/c Ratio	0.16	0.90	0.12	0.53	0.13	0.04	0.60	0.14
Control Delay	58.7	16.3	57.6	8.2	49.2	0.2	66.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	16.3	57.6	8.2	49.2	0.2	66.4	1.1
LOS	E	B	E	A	D	A	E	A
Approach Delay		16.5		8.4		29.2		46.8
Approach LOS		B		A		C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

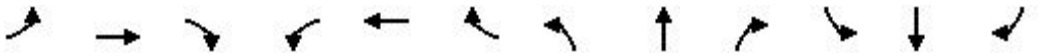
Splits and Phases: 1: Fourth Line & Dundas Street West



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	14	3002	10	1694	13	9	91	39
v/c Ratio	0.16	0.90	0.12	0.53	0.13	0.04	0.60	0.14
Control Delay	58.7	16.3	57.6	8.2	49.2	0.2	66.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	16.3	57.6	8.2	49.2	0.2	66.4	1.1
Queue Length 50th (m)	3.4	170.5	2.4	48.7	3.0	0.0	21.8	0.0
Queue Length 95th (m)	10.6	#373.4	8.3	108.8	9.2	0.0	38.2	0.0
Internal Link Dist (m)		245.1		308.6		24.6		206.3
Turn Bay Length (m)	87.0		150.0					
Base Capacity (vph)	88	3354	86	3226	139	308	214	335
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.90	0.12	0.53	0.09	0.03	0.43	0.12

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)	13	2627	165	9	1546	30	12	0	8	85	0	36
Future Volume (vph)	13	2627	165	9	1546	30	12	0	8	85	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.6	3.6	3.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1685	4336		1685	4294		1203	1589		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	1685	4336		1685	4294		927	1589		1428	1615	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	14	2825	177	10	1662	32	13	0	9	91	0	39
RTOR Reduction (vph)	0	4	0	0	1	0	0	8	0	0	35	0
Lane Group Flow (vph)	14	2998	0	10	1693	0	13	1	0	91	4	0
Confl. Peds. (#/hr)									2			
Heavy Vehicles (%)	0%	4%	8%	0%	6%	0%	50%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	2.6	88.0		1.2	86.6		12.8	12.8		12.8	12.8	
Effective Green, g (s)	2.6	88.0		1.2	86.6		12.8	12.8		12.8	12.8	
Actuated g/C Ratio	0.02	0.73		0.01	0.72		0.11	0.11		0.11	0.11	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	36	3179		16	3098		98	169		152	172	
v/s Ratio Prot	c0.01	c0.69		0.01	0.39			0.00			0.00	
v/s Ratio Perm							0.01			c0.06		
v/c Ratio	0.39	0.94		0.62	0.55		0.13	0.01		0.60	0.02	
Uniform Delay, d1	57.9	13.8		59.2	7.7		48.6	47.9		51.1	48.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	7.3		57.6	0.7		0.6	0.0		6.2	0.1	
Delay (s)	64.7	21.1		116.8	8.4		49.2	47.9		57.4	48.1	
Level of Service	E	C		F	A		D	D		E	D	
Approach Delay (s)		21.3			9.0			48.7			54.6	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	30	0	0	21	0
Future Volume (Veh/h)	1	30	0	0	21	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	1	38	0	0	27	0
Pedestrians					1	
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)	111					
pX, platoon unblocked						
vC, conflicting volume			40		21	21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		21	21
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		97	100
cM capacity (veh/h)			1581		987	1061

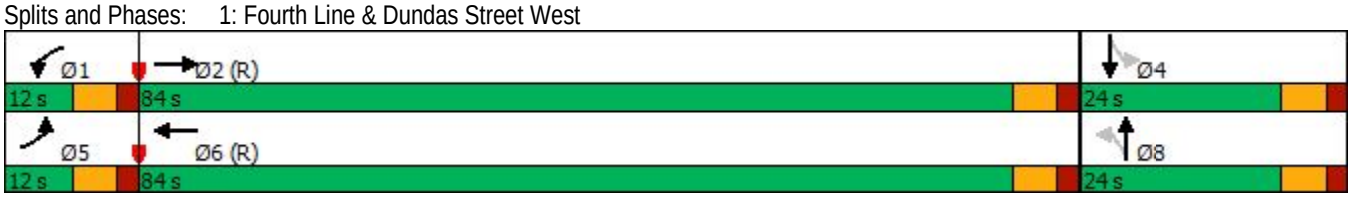
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	39	0	27
Volume Left	0	0	27
Volume Right	38	0	0
cSH	1700	1700	987
Volume to Capacity	0.02	0.00	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay		3.6	
Intersection Capacity Utilization		13.7%	ICU Level of Service A
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	1274	6	2680	16	0	53	0
Future Volume (vph)	40	1274	6	2680	16	0	53	0
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	70.0	5.0	70.0	4.0	4.0	5.0	5.0
Minimum Split (s)	12.0	80.0	12.0	80.0	24.0	24.0	24.0	24.0
Total Split (s)	12.0	84.0	12.0	84.0	24.0	24.0	24.0	24.0
Total Split (%)	10.0%	70.0%	10.0%	70.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	8.1	98.8	6.1	89.7	10.1	10.1	10.1	10.1
Actuated g/C Ratio	0.07	0.82	0.05	0.75	0.08	0.08	0.08	0.08
v/c Ratio	0.37	0.37	0.07	0.88	0.14	0.06	0.47	0.11
Control Delay	62.5	4.5	55.7	19.4	51.8	0.5	64.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	4.5	55.7	19.4	51.8	0.5	64.2	1.1
LOS	E	A	E	B	D	A	E	A
Approach Delay		6.2		19.4		26.9		45.2
Approach LOS		A		B		C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 15.8	Intersection LOS: B
Intersection Capacity Utilization 77.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Fourth Line & Dundas Street West



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	1358	6	2919	17	16	56	24
v/c Ratio	0.37	0.37	0.07	0.88	0.14	0.06	0.47	0.11
Control Delay	62.5	4.5	55.7	19.4	51.8	0.5	64.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	4.5	55.7	19.4	51.8	0.5	64.2	1.1
Queue Length 50th (m)	10.1	29.0	1.5	239.0	4.0	0.0	13.5	0.0
Queue Length 95th (m)	22.1	71.3	6.0	#347.8	11.2	0.0	26.6	0.0
Internal Link Dist (m)		245.1		308.6		24.6		206.3
Turn Bay Length (m)	87.0		150.0					
Base Capacity (vph)	114	3674	88	3328	211	362	212	311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.37	0.07	0.88	0.08	0.04	0.26	0.08

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)	40	1274	16	6	2680	93	16	0	15	53	0	23
Future Volume (vph)	40	1274	16	6	2680	93	16	0	15	53	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.6	3.6	3.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1685	4461		1685	4451		1802	1615		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.75	1.00	
Satd. Flow (perm)	1685	4461		1685	4451		1406	1615		1419	1615	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	1341	17	6	2821	98	17	0	16	56	0	24
RTOR Reduction (vph)	0	1	0	0	2	0	0	15	0	0	22	0
Lane Group Flow (vph)	42	1357	0	6	2917	0	17	1	0	56	2	0
Confl. Peds. (#/hr)			5	5			1					
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	7.0	91.6		1.4	86.0		9.0	9.0		9.0	9.0	
Effective Green, g (s)	7.0	91.6		1.4	86.0		9.0	9.0		9.0	9.0	
Actuated g/C Ratio	0.06	0.76		0.01	0.72		0.08	0.08		0.08	0.08	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	98	3405		19	3189		105	121		106	121	
v/s Ratio Prot	c0.02	c0.30		0.00	c0.66			0.00			0.00	
v/s Ratio Perm							0.01			c0.04		
v/c Ratio	0.43	0.40		0.32	0.91		0.16	0.01		0.53	0.01	
Uniform Delay, d1	54.6	4.8		58.8	14.0		52.0	51.4		53.5	51.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	0.3		9.3	5.3		0.7	0.0		4.7	0.0	
Delay (s)	57.6	5.2		68.2	19.3		52.7	51.4		58.1	51.4	
Level of Service	E	A		E	B		D	D		E	D	
Approach Delay (s)		6.8			19.4			52.1			56.1	
Approach LOS		A			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	24	0	0	34	0
Future Volume (Veh/h)	0	24	0	0	34	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	29	0	0	41	0
Pedestrians	1					
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)	111					
pX, platoon unblocked						
vC, conflicting volume			29		16	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			29		16	14
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		96	100
cM capacity (veh/h)			1597		1007	1071

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	29	0	41
Volume Left	0	0	41
Volume Right	29	0	0
cSH	1700	1700	1007
Volume to Capacity	0.02	0.00	0.04
Queue Length 95th (m)	0.0	0.0	1.0
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX E

Trip Generation & TTS Modal Split

Land Use: 255
Continuing Care Retirement Community

Description

A continuing care retirement community (CCRC) is a land use that provides multiple elements of senior adult living. CCRCs combine aspects of independent living with increased care, as lifestyle needs change with time. Housing options may include various combinations of senior adult (detached), senior adult (attached), congregate care, assisted living, and skilled nursing care—aimed at allowing the residents to live in one community as their medical needs change. The communities may also contain special services such as medical, dining, recreational, and some limited, supporting retail facilities. CCRCs are usually self-contained villages. Senior adult housing—detached (Land Use 251), senior adult housing—attached (Land Use 252), congregate care facility (Land Use 253), assisted living (Land Use 254), and nursing home (Land Use 620) are related uses.

Additional Data

Caution should be used when applying these data. CCRCs are relatively new and unique land uses. These developments consist of various housing components (dwelling units, rooms, and beds[1]) that often exist in varying proportions. Therefore, the use of a single housing component does not fully describe the trip generation characteristics of these communities. Based upon the limited data submitted for this land use, it was determined that a comprehensive independent variable, units, was the most appropriate descriptor of the characteristics. This variable is defined as an aggregate of all living accommodations common to these communities. The independent variable, occupied units, provides data on the number of units that were occupied at the study sites at the time of the survey.

To illustrate the varying proportions of housing options that exist, the following table is provided for nine of the CCRCs included in this land use as an example. Users are strongly cautioned to exercise proper professional judgment in applying these data.

Living Accommodations at CCRCs		
Occupied Dwelling Units/Rooms[2]	Occupied Beds	Total Occupied Units
215	46	261
220	151	371
620	100	720
312	166	478
210	37	247
323	120[3]	443
233	121[3]	354
209	33	242
234	94	328

The sites were surveyed in the 1980s, the 1990s, and the 2000s in Connecticut, Illinois, Maryland, Massachusetts, Pennsylvania, and Virginia.

A complete study of CCRCs requires future analysis of their various components. Therefore, it is important to collect as much information as possible. At the very least, the total number of dwelling units, rooms, and beds should be obtained; if possible, the number of corresponding occupied units should be recorded as well.

Source Numbers

244, 253, 388, 501, 576, 713, 715

[1] Dwelling units, rooms, and beds are the independent variables typically used to represent independent housing (detached/attached/congregate care), assisted living facilities, and nursing homes, respectively. Occupied dwelling units/rooms may be private or shared accommodations.

[2] Total number of combined dwelling units and rooms available within a community.

[3] For analysis purposes, an assumption was made that the total number of beds equaled the total number of occupied beds.

TRIP GENERATION RATES
ITE 10th Edition

Land Uses		
ITE 255		
Continuing Care Retirement Community		342
AM		
Equation (R2 = 0.95)	T = 0.13(X) + 21.28	66
Average Rate	0.15	51
PM		
Equation (R2 = 0.95)	T = 0.13(X) + 59.19	104
Average Rate	0.2	68

		Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
	Continuing Care Retirement Community						
	ITE 255	65%	35%	-	40%	60%	-
	Trip Rate	0.13	0.07	0.19	0.12	0.18	0.30
	ITE Trips	43	23	66	42	62	104
18%	Non-Auto	8	4	12	8	11	19
	Internal	0	0	0	0	0	0
	Pass-By	0	0	0	0	0	0
	Trips	35	19	54	34	51	85
	Total						
	Primary	35	19	54	34	51	85

Tue Jul 21 2020 17:44:28 GMT-0400 (Eastern Daylight Time) - Run Time: 2385ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of origin - gta06_orig In 4039
and
Start time of trip - start_time In 600-900
and
Trip purpose - trip_purp In 1-3

Trip 2016
Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	School bus	Walk	
4039	210	50	3546	284	52	736	234	848	5960
	4%	**1%**	**59%**	**5%**	**1%**	**12%**	**4%**	**14%**	

Auto	72%
Non-Auto	28%

Note: GHD Report assumed 18% mode split. Accepted by the Region in the TOR

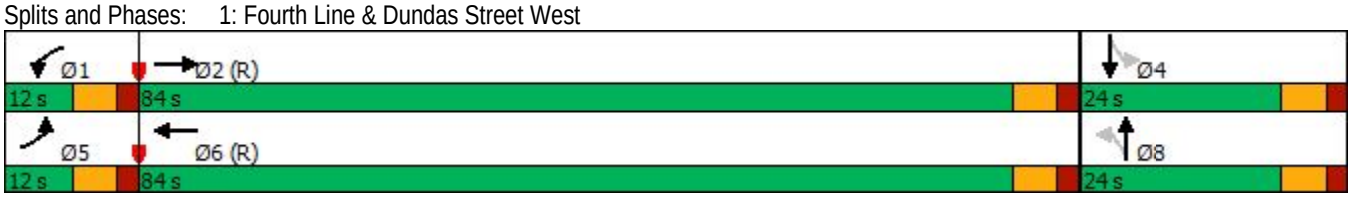
APPENDIX F

Intersection Capacity Analysis Results – Future Total Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	13	2627	12	1546	24	0	85	0
Future Volume (vph)	13	2627	12	1546	24	0	85	0
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	70.0	5.0	70.0	4.0	4.0	5.0	5.0
Minimum Split (s)	12.0	80.0	12.0	80.0	24.0	24.0	24.0	24.0
Total Split (s)	12.0	84.0	12.0	84.0	24.0	24.0	24.0	24.0
Total Split (%)	10.0%	70.0%	10.0%	70.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	6.2	90.1	6.1	90.1	12.9	12.9	12.9	12.9
Actuated g/C Ratio	0.05	0.75	0.05	0.75	0.11	0.11	0.11	0.11
v/c Ratio	0.16	0.93	0.15	0.53	0.26	0.07	0.60	0.14
Control Delay	58.7	21.3	58.4	8.2	54.0	0.5	66.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	21.3	58.4	8.2	54.0	0.5	66.6	1.1
LOS	E	C	E	A	D	A	E	A
Approach Delay		21.4		8.6		33.6		47.0
Approach LOS		C		A		C		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 79.7%	ICU Level of Service D
Analysis Period (min) 15	

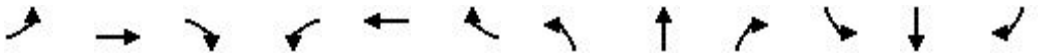
Splits and Phases: 1: Fourth Line & Dundas Street West



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	14	3037	13	1694	26	16	91	39
v/c Ratio	0.16	0.93	0.15	0.53	0.26	0.07	0.60	0.14
Control Delay	58.7	21.3	58.4	8.2	54.0	0.5	66.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	21.3	58.4	8.2	54.0	0.5	66.6	1.1
Queue Length 50th (m)	3.4	178.3	3.1	49.0	6.0	0.0	21.8	0.0
Queue Length 95th (m)	10.6	#381.2	10.1	108.8	14.9	0.0	38.2	0.0
Internal Link Dist (m)		245.1		308.6		24.6		206.3
Turn Bay Length (m)	87.0		150.0					
Base Capacity (vph)	88	3255	88	3225	139	308	212	335
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.93	0.15	0.53	0.19	0.05	0.43	0.12

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)	13	2627	197	12	1546	30	24	0	15	85	0	36
Future Volume (vph)	13	2627	197	12	1546	30	24	0	15	85	0	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.6	3.6	3.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1685	4327		1685	4294		1203	1589		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00		0.73	1.00		0.75	1.00	
Satd. Flow (perm)	1685	4327		1685	4294		927	1589		1419	1615	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	14	2825	212	13	1662	32	26	0	16	91	0	39
RTOR Reduction (vph)	0	5	0	0	1	0	0	14	0	0	35	0
Lane Group Flow (vph)	14	3032	0	13	1693	0	26	2	0	91	4	0
Confl. Peds. (#/hr)									2			
Heavy Vehicles (%)	0%	4%	8%	0%	6%	0%	50%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	2.6	86.5		2.6	86.5		12.9	12.9		12.9	12.9	
Effective Green, g (s)	2.6	86.5		2.6	86.5		12.9	12.9		12.9	12.9	
Actuated g/C Ratio	0.02	0.72		0.02	0.72		0.11	0.11		0.11	0.11	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	36	3119		36	3095		99	170		152	173	
v/s Ratio Prot	c0.01	c0.70		0.01	0.39			0.00			0.00	
v/s Ratio Perm							0.03			c0.06		
v/c Ratio	0.39	0.97		0.36	0.55		0.26	0.01		0.60	0.02	
Uniform Delay, d1	57.9	15.6		57.9	7.7		49.2	47.8		51.1	47.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	10.8		6.1	0.7		1.4	0.0		6.2	0.1	
Delay (s)	64.7	26.4		64.0	8.4		50.6	47.9		57.3	48.0	
Level of Service	E	C		E	A		D	D		E	D	
Approach Delay (s)		26.6			8.8			49.6			54.5	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	36	30	0	19	21	0
Future Volume (Veh/h)	36	30	0	19	21	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	46	38	0	24	27	0
Pedestrians					1	
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)	111					
pX, platoon unblocked						
vC, conflicting volume			85		90	66
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		90	66
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		97	100
cM capacity (veh/h)			1523		902	1003

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	84	24	27
Volume Left	0	0	27
Volume Right	38	0	0
cSH	1700	1523	902
Volume to Capacity	0.05	0.00	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	9.1
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.1
Approach LOS			A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	14.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	35	0	0	19	0
Future Volume (Veh/h)	0	35	0	0	19	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	0	0	21	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)	170					
pX, platoon unblocked						
vC, conflicting volume			38		19	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			38		19	19
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		98	100
cM capacity (veh/h)			1585		1004	1065

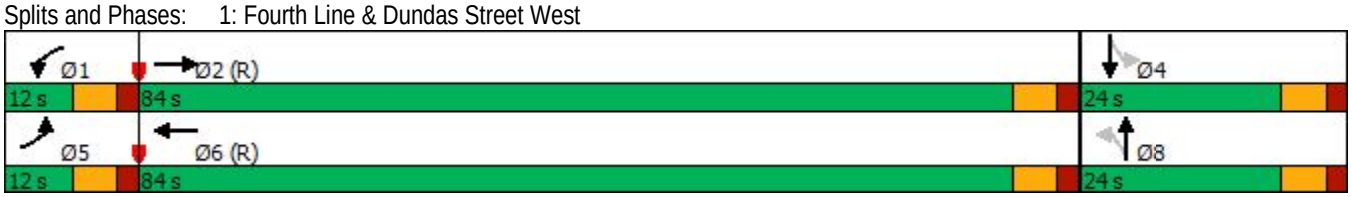
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	38	0	21
Volume Left	0	0	21
Volume Right	38	0	0
cSH	1700	1700	1004
Volume to Capacity	0.02	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	1274	18	2680	62	0	53	0
Future Volume (vph)	40	1274	18	2680	62	0	53	0
Turn Type	Prot	NA	Prot	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases					8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	70.0	5.0	70.0	4.0	4.0	5.0	5.0
Minimum Split (s)	12.0	80.0	12.0	80.0	24.0	24.0	24.0	24.0
Total Split (s)	12.0	84.0	12.0	84.0	24.0	24.0	24.0	24.0
Total Split (%)	10.0%	70.0%	10.0%	70.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	None	None	None	None
Act Effct Green (s)	7.8	95.1	6.9	89.2	10.9	10.9	10.8	10.8
Actuated g/C Ratio	0.06	0.79	0.06	0.74	0.09	0.09	0.09	0.09
v/c Ratio	0.39	0.39	0.20	0.88	0.51	0.08	0.44	0.11
Control Delay	63.6	6.2	58.2	20.0	65.0	0.6	61.3	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	6.2	58.2	20.0	65.0	0.6	61.3	1.0
LOS	E	A	E	B	E	A	E	A
Approach Delay		7.9		20.2		49.3		43.2
Approach LOS		A		C		D		D

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

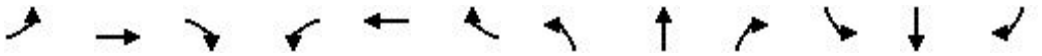
Splits and Phases: 1: Fourth Line & Dundas Street West



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	1381	19	2919	65	21	56	24
v/c Ratio	0.39	0.39	0.20	0.88	0.51	0.08	0.44	0.11
Control Delay	63.6	6.2	58.2	20.0	65.0	0.6	61.3	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	6.2	58.2	20.0	65.0	0.6	61.3	1.0
Queue Length 50th (m)	10.1	31.1	4.6	245.2	15.6	0.0	13.4	0.0
Queue Length 95th (m)	22.3	78.6	12.6	#347.8	29.7	0.0	26.3	0.0
Internal Link Dist (m)		245.1		308.6		24.6		206.3
Turn Bay Length (m)	87.0		150.0					
Base Capacity (vph)	111	3529	98	3310	211	362	212	311
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.19	0.88	0.31	0.06	0.26	0.08

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)	40	1274	38	18	2680	93	62	0	20	53	0	23
Future Volume (vph)	40	1274	38	18	2680	93	62	0	20	53	0	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.6	3.6	3.0	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1685	4449		1685	4451		1802	1615		1805	1615	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00		0.74	1.00	
Satd. Flow (perm)	1685	4449		1685	4451		1406	1615		1413	1615	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	1341	40	19	2821	98	65	0	21	56	0	24
RTOR Reduction (vph)	0	2	0	0	2	0	0	19	0	0	22	0
Lane Group Flow (vph)	42	1379	0	19	2917	0	65	2	0	56	2	0
Confl. Peds. (#/hr)			5	5			1					
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8			4		
Actuated Green, G (s)	6.7	89.1		3.2	85.6		9.7	9.7		9.7	9.7	
Effective Green, g (s)	6.7	89.1		3.2	85.6		9.7	9.7		9.7	9.7	
Actuated g/C Ratio	0.06	0.74		0.03	0.71		0.08	0.08		0.08	0.08	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	3303		44	3175		113	130		114	130	
v/s Ratio Prot	c0.02	c0.31		0.01	c0.66			0.00			0.00	
v/s Ratio Perm							c0.05			0.04		
v/c Ratio	0.45	0.42		0.43	0.92		0.58	0.01		0.49	0.01	
Uniform Delay, d1	54.9	5.8		57.5	14.3		53.2	50.7		52.8	50.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.4		6.7	5.6		6.9	0.0		3.3	0.0	
Delay (s)	58.2	6.2		64.2	19.9		60.1	50.8		56.1	50.8	
Level of Service	E	A		E	B		E	D		E	D	
Approach Delay (s)		7.7			20.1			57.8			54.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	34	24	0	51	34	0
Future Volume (Veh/h)	34	24	0	51	34	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	41	29	0	62	41	0
Pedestrians	1					
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)	111					
pX, platoon unblocked						
vC, conflicting volume			70		118	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		118	56
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		95	100
cM capacity (veh/h)			1544		881	1017

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	70	62	41
Volume Left	0	0	41
Volume Right	29	0	0
cSH	1700	1544	881
Volume to Capacity	0.04	0.00	0.05
Queue Length 95th (m)	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	34	0	0	51	0
Future Volume (Veh/h)	0	34	0	0	51	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	37	0	0	55	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)	170					
pX, platoon unblocked						
vC, conflicting volume			37		18	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			37		18	18
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		95	100
cM capacity (veh/h)			1587		1004	1066

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	37	0	55
Volume Left	0	0	55
Volume Right	37	0	0
cSH	1700	1700	1004
Volume to Capacity	0.02	0.00	0.05
Queue Length 95th (m)	0.0	0.0	1.4
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

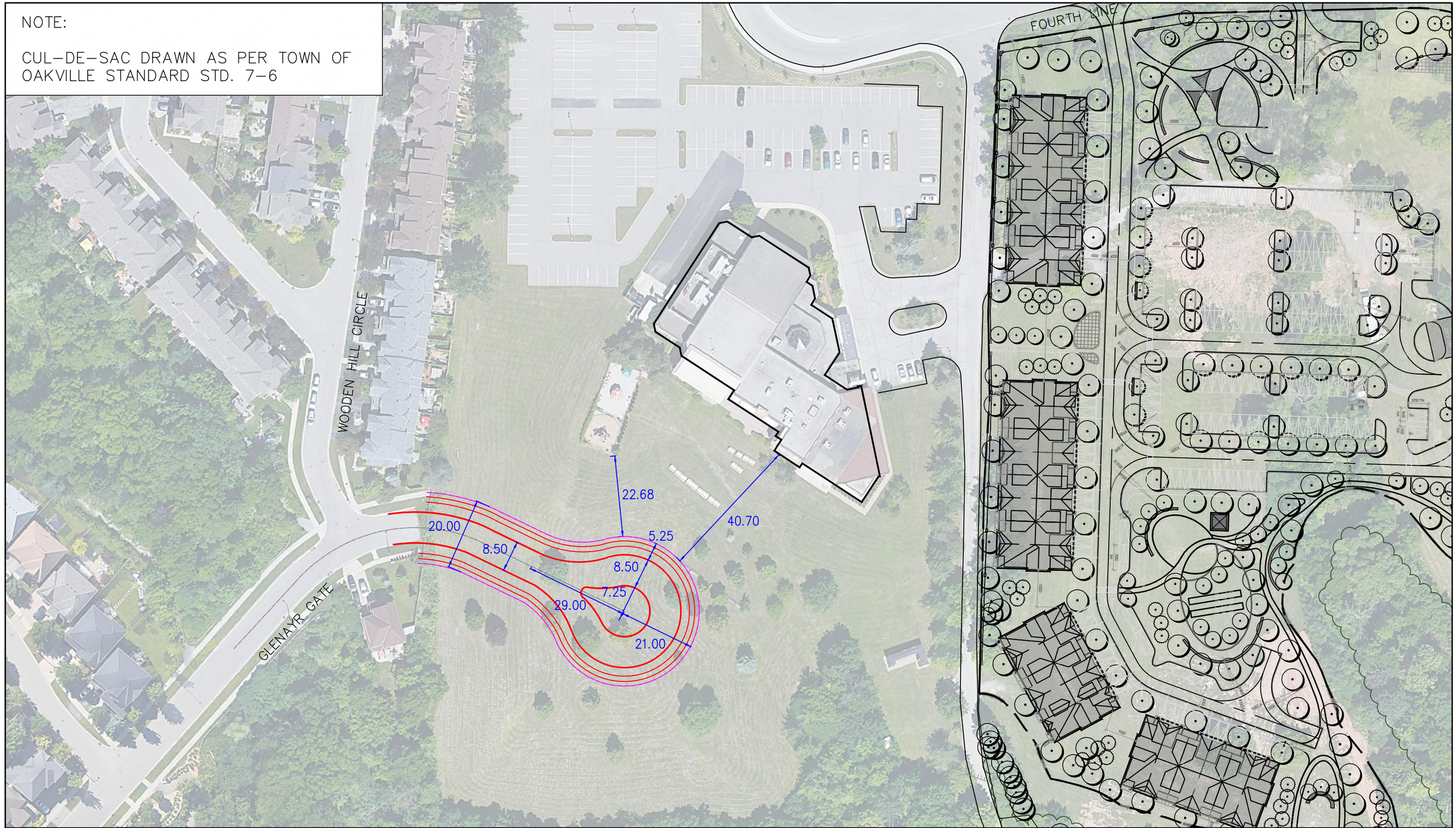
Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX G

Area Design Plans

NOTE:

CUL–DE–SAC DRAWN AS PER TOWN OF OAKVILLE STANDARD STD. 7–6

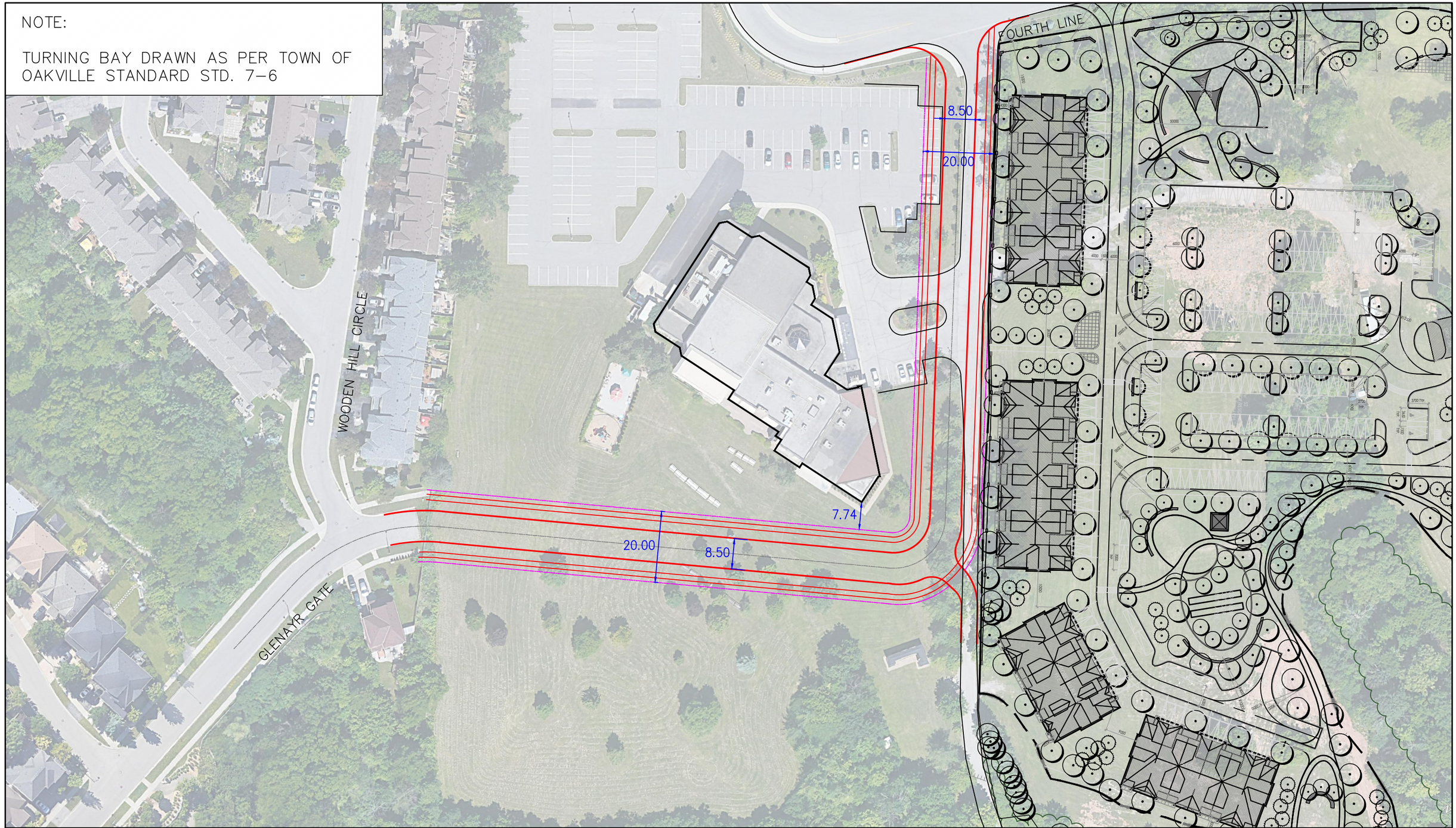


LEA Consulting Ltd. Consulting Engineers and Planners **www.LEA.ca**	N	Project No. 20253 Date AUG. 27, 2020		1280 DUNDAS STREET W OAKVILLE ONTARIO 10 0 10 20 30m 1:1000	OPTION 1 PROPOSED CUL–DE–SAC	Drawing No. 001

DRAWING NAME: C:\Users\DTat\appdata\local\temp\AcPublish_25720\20253WF008B – Cul De Sac.dwg

NOTE:

TURNING BAY DRAWN AS PER TOWN OF OAKVILLE STANDARD STD. 7-6



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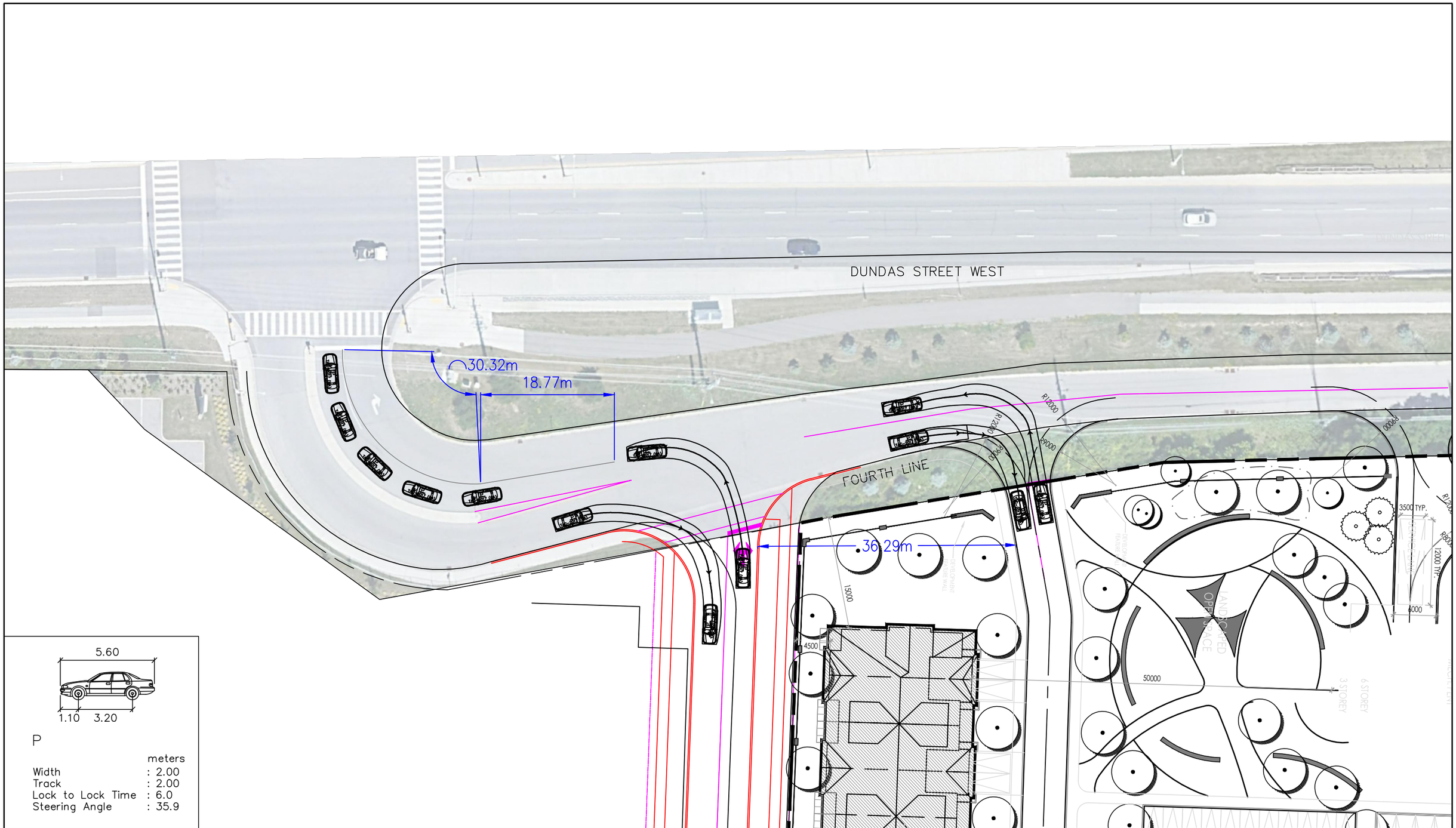

P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

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20253

Date
AUG. 27, 2020

1280 DUNDAS STREET W
OAKVILLE ONTARIO

5 0 5 10 15m
1:500

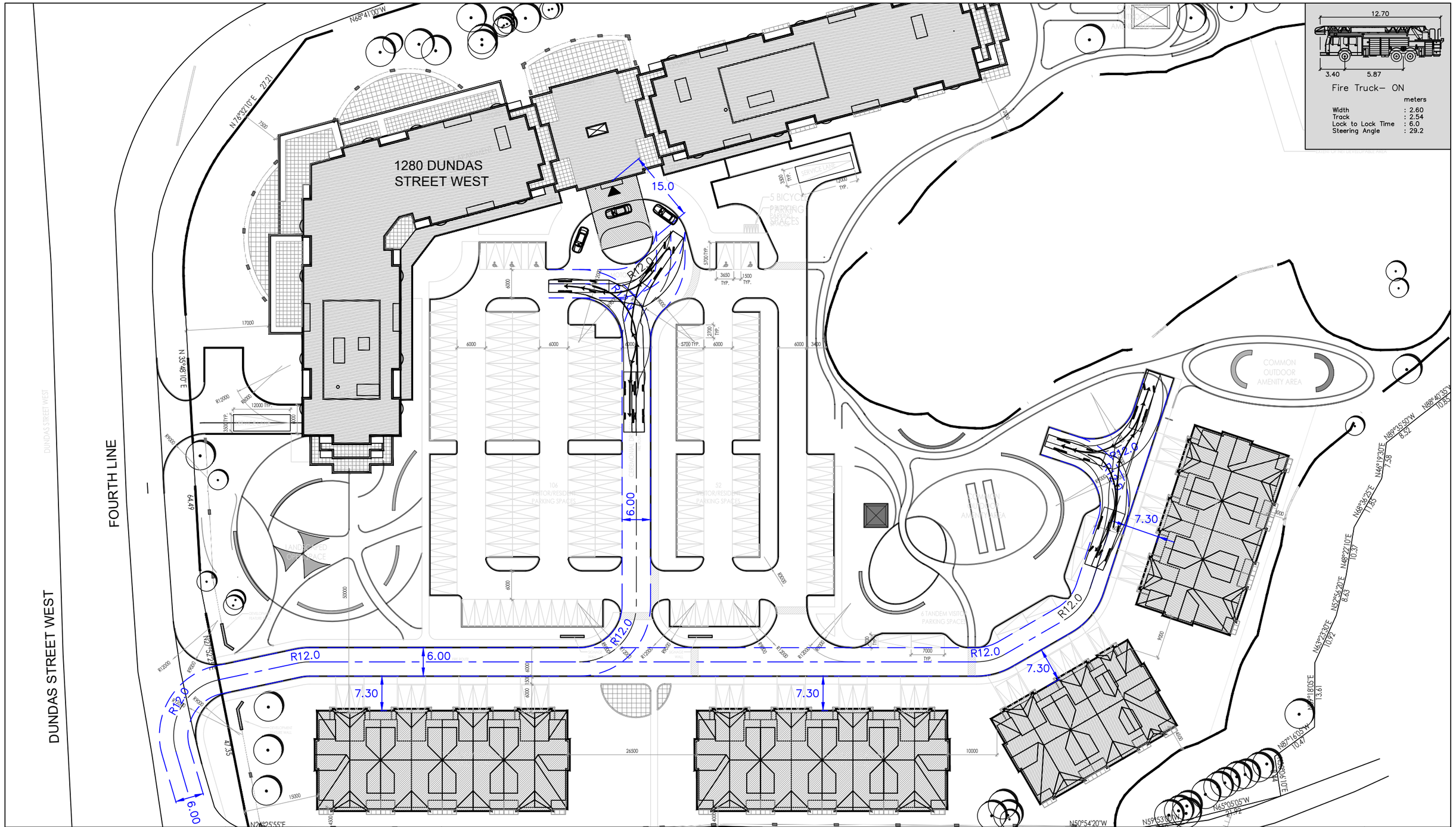
OPTION 2
SITE ACCESS & PROPOSED ROAD

Drawing No.
003

DRAWING NAME: C:\Users\DTat\appdata\local\temp\AcPublish_25720\20253WF008B – Cul De Sac.dwg

APPENDIX H

Swept Path Diagrams

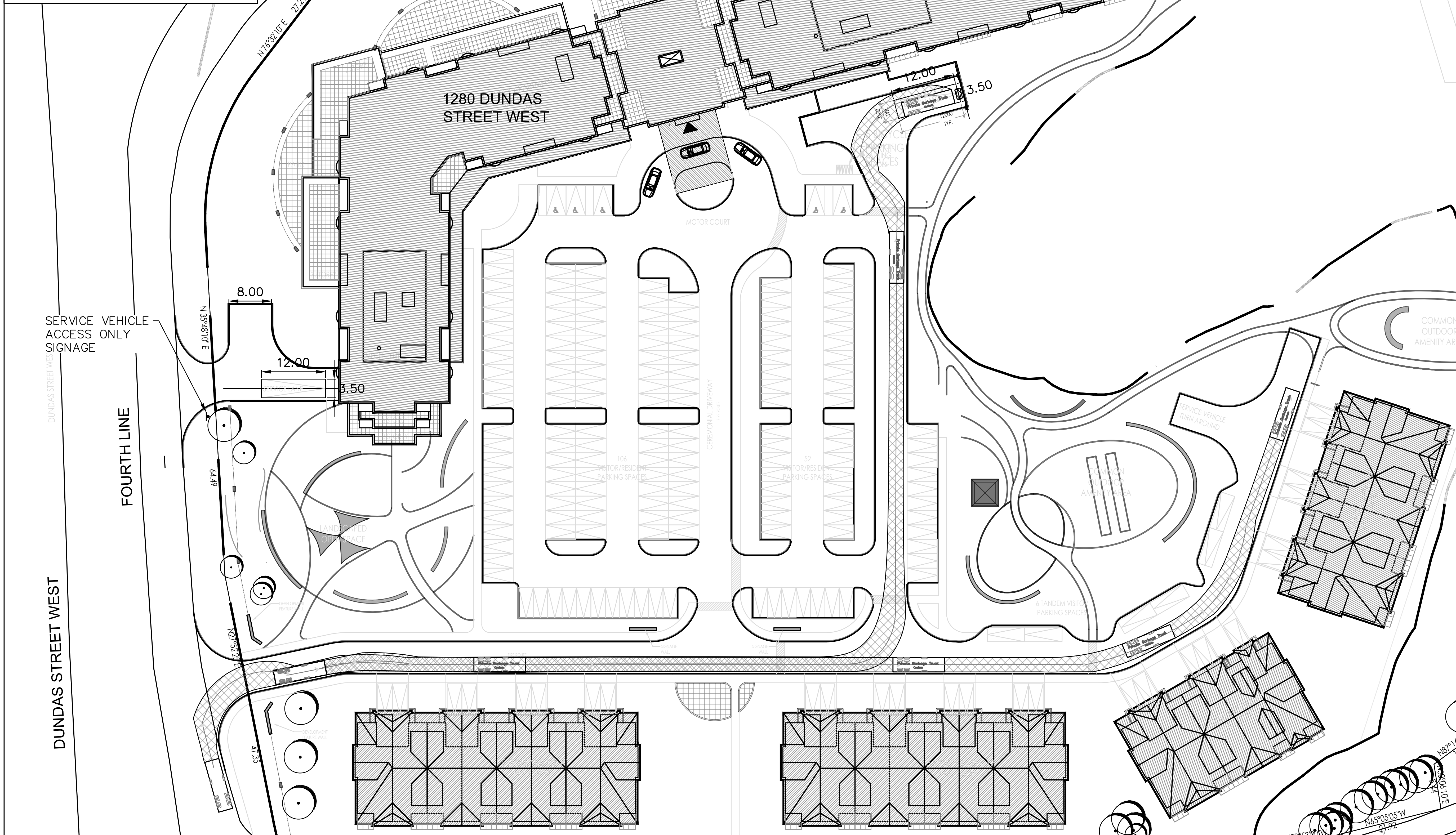


LEA Consulting Ltd. Consulting Engineers and Planners **www.LEA.ca**	Project No. 20253–210 Date AUG. 27, 2020	1280 DUNDAS STREET WEST OAKVILLE ONTARIO 7.5 0 7.5 15 22.5m 1:750	SITE PLAN FIRE ROUTE	Drawing No. 001

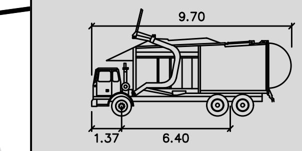
DRAWING NAME: C:\Users\DLim\AppData\Local\Temp\AcPu

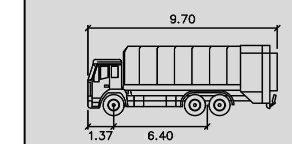
NOTE:

1. WASTE COLLECTION AT SOUTH BUILDINGS WILL REQUIRE SIDE LOADERS



1280 DUNDAS STREET WEST
SERVICE VEHICLE ACCESS ONLY SIGNAGE
8.00
12.00
3.50
12.00
3.50
FOURTH LINE
DUNDAS STREET WEST
MOTOR COURT
COMMON OUTDOOR AMENITY AREA
SERVICE VEHICLE TURN AROUND
N68°41'00"W
N76°32'10"E
27.21
N35°48'10"E
64.49
47.35
N24°25'55"E
N50°54'20"W
N59°53'00"W
N65°05'05"W
N89°35'50"W
8.52
N88°40'35"W
10.85
N46°19'30"E
7.38
N69°36'25"E
11.85
N48°22'10"E
10.37
N52°56'20"E
8.63
N63°23'30"E
10.72
13.61
N87°16'05"W
10.47





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Date AUG. 27, 2020

1280 DUNDAS STREET WEST
OAKVILLE ONTARIO

7.5 0 7.5 15 22.5m
1:750

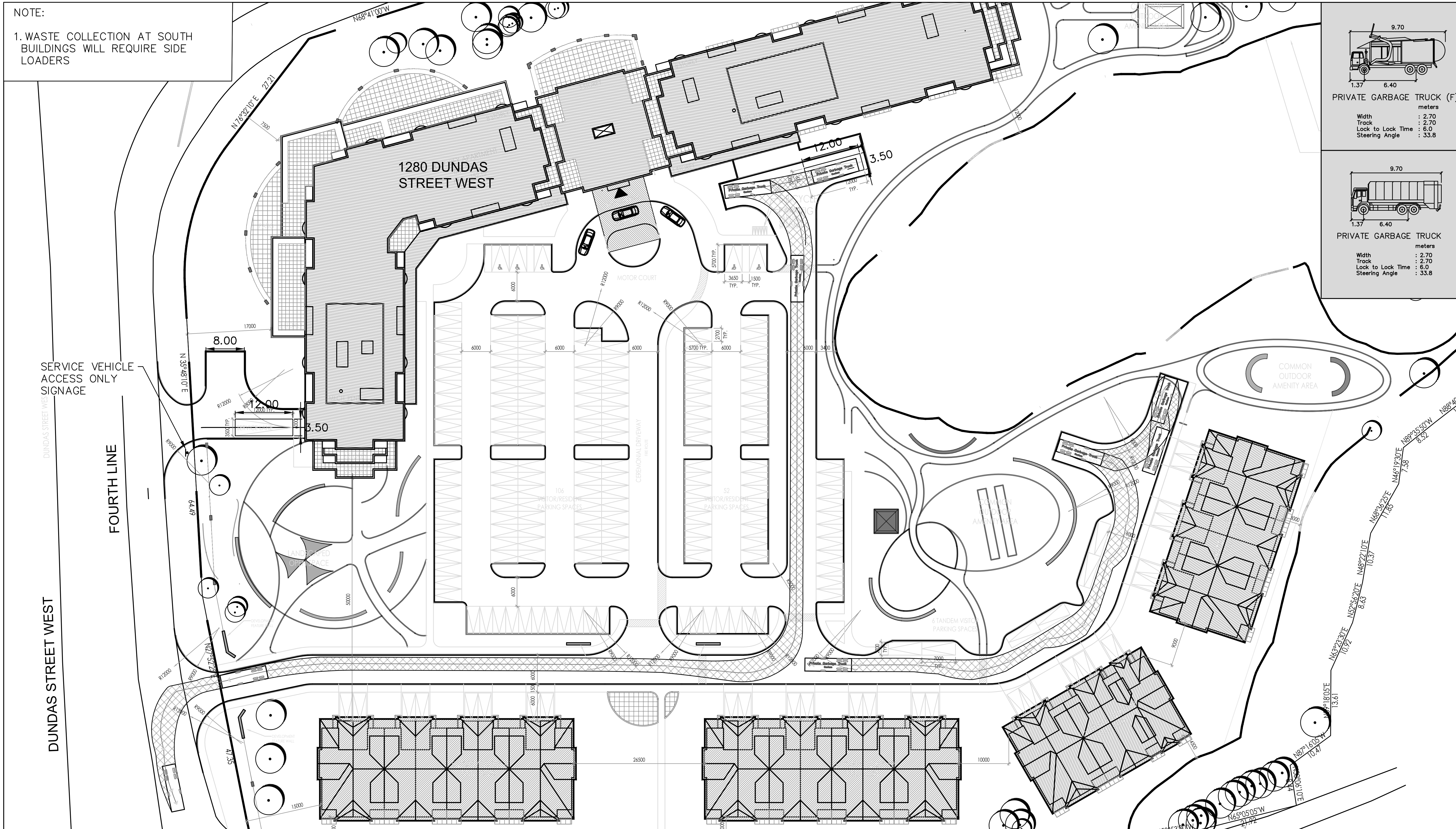
SITE PLAN
LOADING REVIEW
GARBAGE TRUCK
ENTRY PATHS

Drawing No. 002

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp\AcPu

NOTE:

1. WASTE COLLECTION AT SOUTH BUILDINGS WILL REQUIRE SIDE LOADERS



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Project No.	20253-210
Date	AUG. 27, 2020

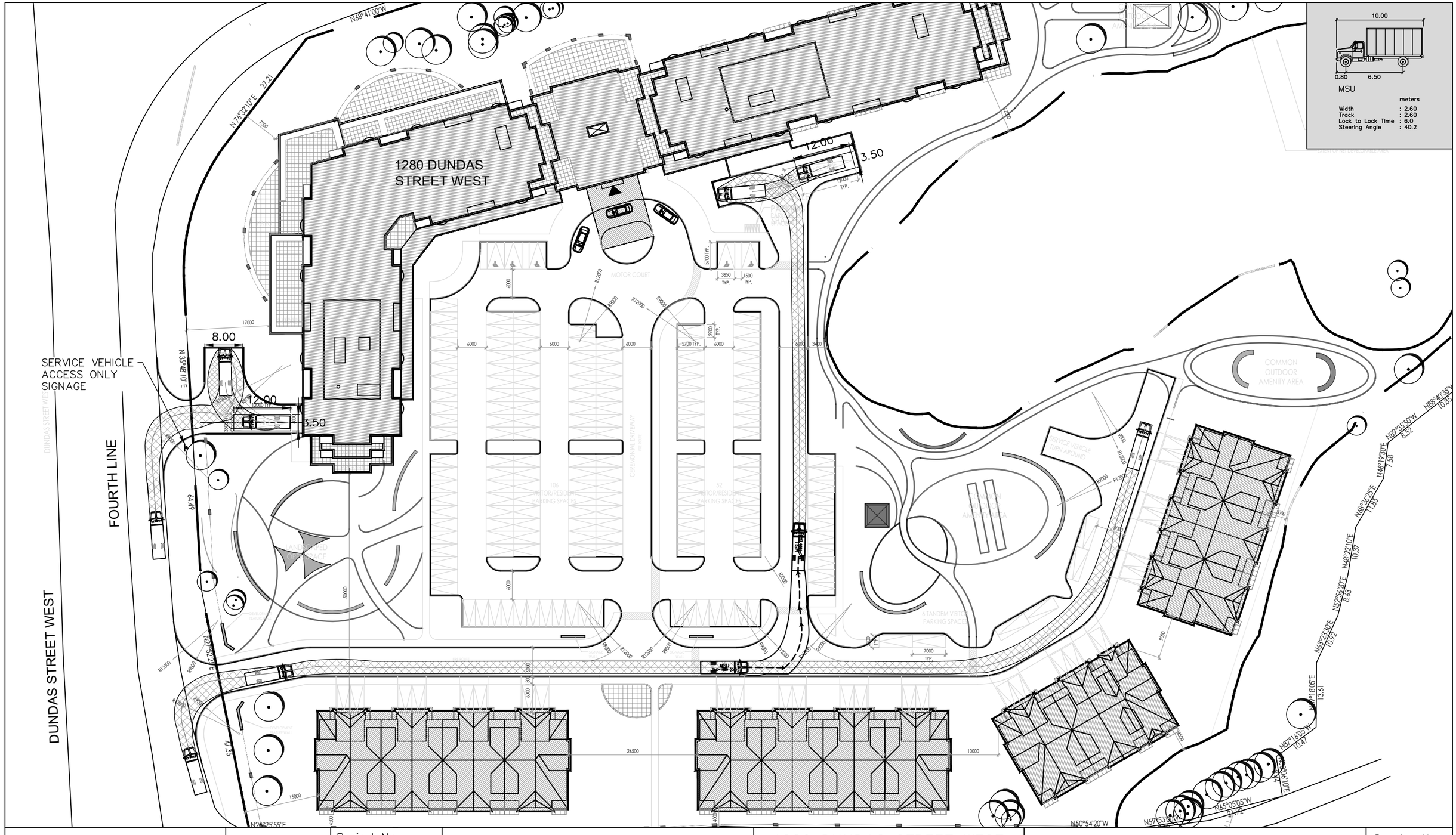
1280 DUNDAS STREET WEST
OAKVILLE ONTARIO

7.5 0 7.5 15 22.5m
1: 750

SITE PLAN
LOADING REVIEW
GARBAGE TRUCK
EXIT PATHS

Drawing No.
003

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp\AcPu



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20253-210

Date
AUG. 27, 2020

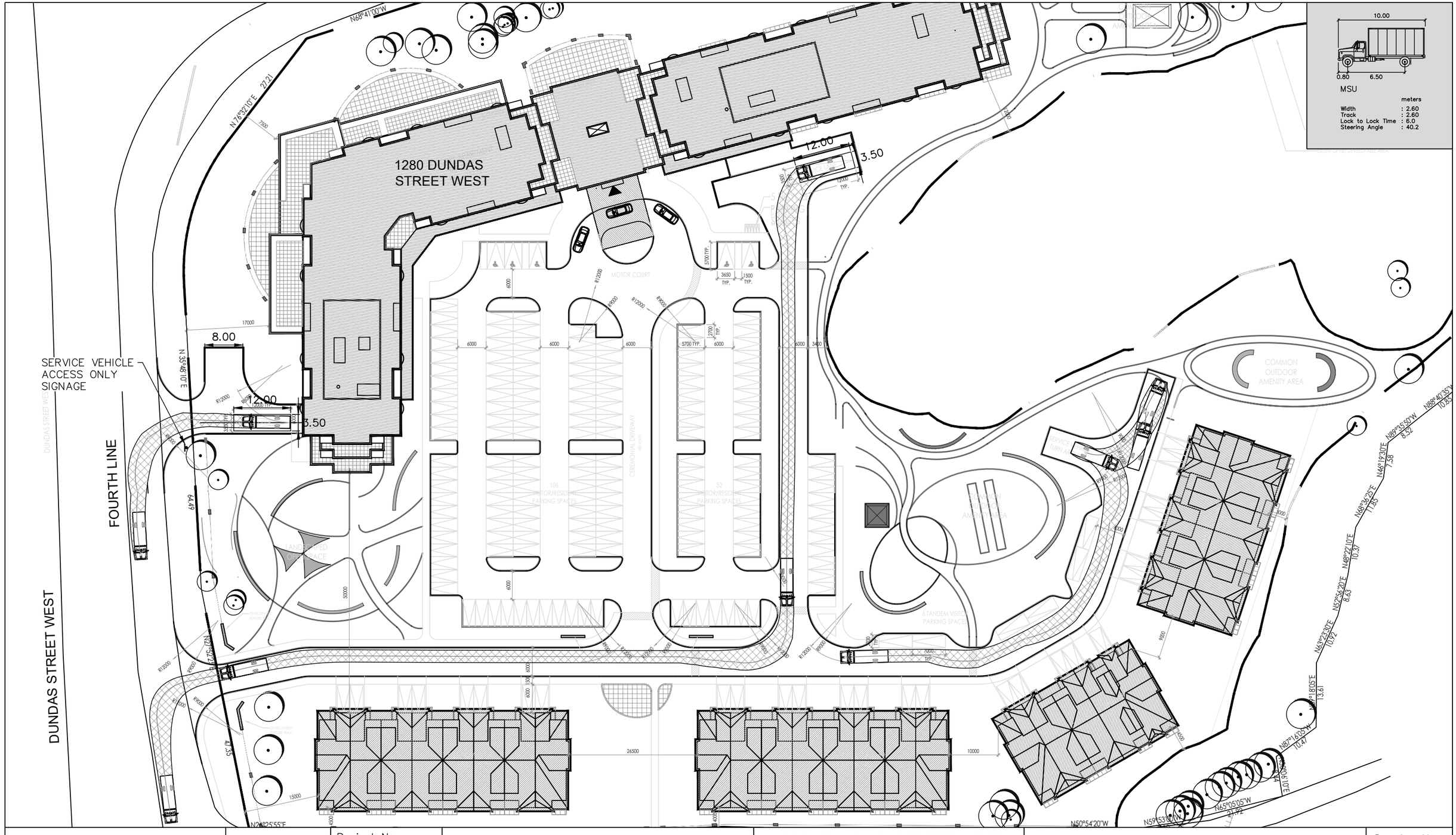
1280 DUNDAS STREET WEST
OAKVILLE ONTARIO

7.5 0 7.5 15 22.5m
1:750

SITE PLAN
LOADING REVIEW
MOVING/ DELIVERY TRUCK (MSU)
ENTRY PATHS

Drawing No.
004

DRAWING NAME: C:\Users\DLim\AppData\Local\Temp\AcPu



LEA Consulting Ltd. Consulting Engineers and Planners **www.LEA.ca**	Project No. 20253–210 Date AUG. 27, 2020	1280 DUNDAS STREET WEST OAKVILLE ONTARIO 7.5 0 7.5 15 22.5m 1:750	SITE PLAN LOADING REVIEW MOVING/ DELIVERY TRUCK (MSU) EXIT PATHS	Drawing No. 005

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