PLACK Property Holding Inc.

875 Montreal Road





875 Montreal Road

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

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Table of Contents

1		Screening1						
2		Existing and Planned Conditions1						
	2.1	Prop	oosed Development	. 1				
	2.2	Exist	ing Conditions	. 3				
	2.2	2.1	Area Road Network	. 3				
	2.2	2.2	Existing Intersections	. 3				
	2.2	2.3	Existing Driveways	. 3				
	2.2	2.4	Cycling and Pedestrian Facilities	. 4				
	2.2	2.5	Existing Transit	. 5				
	2.2	2.6	Existing Area Traffic Management Measures	. 6				
	2.2	2.7	Existing Peak Hour Travel Demand	. 6				
	2.2	2.8	Collision Analysis	. 7				
	2.3	Plan	ned Conditions	. 9				
	2.3	8.1	Changes to the Area Transportation Network	. 9				
	2.3	3.2	Other Study Area Developments	. 9				
3		Study	Area and Time Periods	10				
	3.1	Stud	y Area	10				
	3.2	Time	e Periods	10				
	3.3	Hori	zon Years	10				
4		Exemp	otion Review	11				
5		Desigr	n Review Component	13				
	5.1	Deve	elopment Design	13				
	5.1	1	Circulation and Access Location / Design	13				
	5.2 Parking Supply							
6	Multi-Modal Level of Service							
	6.1 Pedestrian MMLOS							
	6.2 Bicycle MMLOS							
	6.2	Bicy		15				
	6.2 6.3	Bicyo Tran	sit MMLOS	15 16				
	6.2 6.3 6.4	Bicyo Tran Truc	sit MMLOS	15 16 16				

List of Figures

Figure 1: Area Context Plan	1
-igure 2: Site Plan	2
-igure 3: Study Area Pedestrian Facilities	4
Figure 4: Study Area Cycling Facilities	4
-igure 5: Existing Study Area Transit Service	5
-igure 6: Existing Study Area Stops	6
Figure 7: Existing Traffic Counts	7
Figure 8: Study Area Representation of Collision Location	8
-igure 9: 807-825 Montreal Road Site-Generated Traffic Volumes	9



Figure 10	: 245	Squadron	Cres/335 S	t. Laurent	Blvd/775	Mikinak	Rd/1400	Hemlock	Rd	Site-Generated	Traffic
Volumes.											10

Table of Tables

Table 1: Intersection Count Date	6
Table 2: Existing Intersection Operations	7
Table 3: Montreal Road @ Codd's Road / Carsons Road Collision Summary	8
Table 4: Exemption Review	11
Table 5: Recommended Additional Exemptions	11
Table 6: Parking Statistic Summary	13
Table 7: Pedestrian LOS	14
Table 8: PETSI Score Montreal Road at Codd's Road / Carsons Road	14
Table 9: Bicycle LOS for Road Segments	15
Table 10: Bicycle LOS Criteria Montreal Road at Codd's Road / Carsons Road	15
Table 11: Transit LOS for Road Segment	16
Table 12:Truck LOS for Road Segments	16
Table 13: Truck LOS Criteria Montreal Road at Codd's Road / Carsons Road	16

List of Appendices

Appendix A – TIA Screening Form and Certification Form Appendix B – Traffic Data Appendix C – 2019 Existing Conditions Synchro Worksheets Appendix D – Collision Data



1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including only the Design Review component as the trip generation trigger was not met.

2 Existing and Planned Conditions

2.1 Proposed Development

The proposed development, located at 875 Montreal Road, is within the Montreal Road Arterial Main Street Design Priority Area. The site is currently zoned as AM10 [2199] (Arterial Main Street), permitting select residential and non-residential units. The existing land use is a used car sales lot.

The proposed development consists of two buildings which are planned to be constructed in two phases. Phase 1 development includes a two-storey mixed-use building with 257 square metres of commercial area, eight outdoor parking spots, one residential unit and three residential parking spots within the garage area. The Phase 2 development will follow in rapid succession and includes a three-storey mixed-use building with 163 square metres of commercial area, two outdoor parking spaces, three residential units and two parking spots within the garage area. The site is proposed to have one full-movement access on Codd's Road approximately 30 metres north of Montreal Road. The anticipated full build-out and occupancy horizon is 2022. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the site plan.





NOTES & SITE STATS:



Figure 2: Site Plan

SITE PLAN



+ 1916 project number

2.2 Existing Conditions

2.2.1 Area Road Network

Montreal Road: Montreal Road is a City of Ottawa arterial road with a five-lane cross-section including two travel lanes each way, a two-way left-turn lane and both bike lanes and sidewalks on either side. Montreal Road has a 60 km/h posted speed limit as well as curbs and gutters within the Study Area. The Ottawa Official Plan reserves a 37.5 metre right-of-way within the Study Area. Montreal Road is designated as a trucking route.

Codd's Road / Carsons Road: Codd's Road / Carsons Road is a collector road with a two-lane cross-section and a posted speed limit of 50 km/h. Sidewalks as well as curbs and gutters are present on both sides of the road within the Study Area. The measured right-of-way ranges from 20 to 25 metres.

Brunel Street: Brunel Street is a local road with a two-lane cross-section and an unposted speed limit of 50 km/h. The shoulders are primarily grass, however intermittent paved shoulders are present. The measured right-of-way is 15 metres.

2.2.2 Existing Intersections

Codd's Road / Carsons Road at Montreal Road

The intersection of Codd's Road / Carsons Road at Montreal Road is a signalized intersection. Both the northbound and southbound approaches consist of an auxiliary left-turn lane and a shared through/right-turn lane. Both the eastbound and westbound approaches consist of an auxiliary left-turn lane, a through lane and a shared through/rightturn lane. No turn restrictions were noted.



Despite Brunel Street serving as a boundary street to the proposed site, the intersection of Montreal Road at Brunel Street is not considered to be part of the Study Area. There is no site access onto Brunel Street indicating that 875 Montreal Road will not encourage traffic on this street especially given it is a residential road and loops back around to Montreal Road. The intersection configuration of Brunel Street and Montreal Road is composed of westbound through, westbound right and southbound right movements which further discourages additional volume at this location as a result of the proposed development. Additionally, no turning movement counts are available for analysis.

2.2.3 Existing Driveways

Within 200 metres of the proposed driveway, the following developments have existing driveways:

• Residential accesses along Codd's Road and Carsons Road



- Access to East Gate Alliance Church on Codd's Road
- Residential accesses along Brunel Street
- Commercial/retail accesses along Montreal Road

Additionally, none of the driveways would provide access to significant traffic generators and would therefore have no impact on this TIA.

2.2.4 Cycling and Pedestrian Facilities

Within the Study Area, sidewalks are provided along both sides of Montreal Road and Codd's Road / Carsons Road. The cycling network consists of bike lanes on Montreal Road and a suggested local route along Codd's Road / Carsons Road as part of the Ultimate Cycling Network. Figure 3 illustrates the pedestrian facilities in the Study Area and Figure 4 illustrates the cycling facilities.



Figure 4: Study Area Cycling Facilities





2.2.5 Existing Transit

Within the Study Area, Route #12 is serviced by three stops along Montreal Road, one of which is on the southwest corner of the intersection of Codd's Road / Carsons Road and Montreal Road. Route #17 and 27 share one stop on Codd's Road and one stop on Montreal Road (which also services Route #12). Route #129 has one stop on Carsons Road and one stop on Montreal Road (which also services Route #12). The frequencies of these routes within the proximity of the proposed site currently are:

- Route #12 every 10-15 minutes during peak and off-peak times
- Route #17 every 30 minutes in the peak direction and corresponding peak time with no weekend service
- Route #27 every 30 minutes in the peak direction and corresponding peak time with no weekend service
- Route #129 every 15 minutes in the peak direction, and 30 minutes in the off-peak direction, off-peak times and weekends

Figure 5 illustrates the transit system map. Figure 6 illustrates the transit stops in the Study Area.







Figure 6: Existing Study Area Stops

2.2.6 Existing Area Traffic Management Measures

There are no existing area traffic management measures within the Study Area.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were provided by the City of Ottawa for the existing Study Area intersection. Table 1 summarizes the intersection count date and data source.

Table 1: Intersection Count Date				
Intersection	Count Date	Data Source		
Montreal Road at Carsons Road / Codd's Road	Wednesday January 30, 2019	City of Ottawa		

Figure 7 illustrates the 2019 existing horizon traffic volumes and Table 2 summarizes the existing intersection operations. The level of service at signalized intersections is based on the V / C ratio as required by the City of Ottawa. The detailed turning movement count data and signal timing plan are included in Appendix B and the Synchro worksheets are provided in Appendix C.





Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour			PM Peak Hour				
Intersection		LOS	Delay	V/C	Q (95 th)	LOS	Delay	V/C	Q (95 th)
	EBL	А	11	0.23	9	А	7	0.13	7
	EBT/R	А	9	0.44	58	А	8	0.49	74
	WBL	А	17	0.35	33	А	12	0.10	8
Churchill Avenue	WBT/R	А	16	0.60	114	А	11	0.44	79
& Richmond Road	NBL	А	47	0.58	41	А	55	0.54	38
Signalized	NBT/R	А	36	0.24	13	А	45	0.24	13
	SBL	А	38	0.11	12	А	49	0.26	23
	SBT/R	А	37	0.38	15	А	46	0.38	15
	Overall	В	17	-	-	В	14	-	-
Notos	Saturation	flow rate o	of 1800 veh/	′h/lane					
Notes:	PHF = 0.90								

Overall, the intersection of Montreal Road at Codd's Road / Carsons Road operates well during the AM and PM peak hours with low delays and V/C ratios.

2.2.8 Collision Analysis

Collision data has been acquired from the City of Ottawa for five years (2013-2017) prior to the commencement of this TIA at the Study Area intersection of Montreal Road at Codd's Road / Carsons Road. Figure 8 illustrates the collisions at the intersection of interest within the Study Area. Collision data is included in Appendix D.





Figure 8: Study Area Representation of Collision Location

Montreal Road at Codd's Road / Carsons Road experienced 21 collisions between 2013-2017, one of which involved a pedestrian. Four of these collisions resulted in non-fatal injuries while the remaining 17 resulted in property damage only. The main impact type at this intersection is rear end with 47.60% of all collisions falling into this category. The remaining collisions are dispersed among angle, sideswipe, turning movement, SMV other and other initial impact type categories with 9.50%, 9.50%, 14.20%, 14.20% and 4.80% of all collisions respectively. Weather/road conditions are considered a contributing factor for 38.10% of collisions at this intersection. Table 3 summarizes the collision types and conditions at this intersection.

		Number	%
To	tal Collisions	21	100%
Classification	Non-Fatal Injury	4	19.00%
	Property Damage Only	17	81.00%
Initial Impact	Approaching	0	0.00%
Туре	Angle	2	9.50%
	Rear end	10	47.60%
	Sideswipe	2	9.50%
	Turning Movement	3	14.20%
	SMV Unattended Vehicle	0	0.00%
	SMV Other	3	14.20%
	Other	1	4.80%
Road Surface	Dry	13	61.90%
Condition	Wet	5	23.80%
	Loose Snow	0	0.00%
	Slush	1	4.80%
	Packed Snow	1	4.80%
	Ice	1	4.80%
	Loose sand or gravel	0	0.00%

Table 3: Montreal Road @ Codd's Road / Carsons Road Collision Summary



Pedestrian Involved	1	4.80%
Cyclists Involved	0	0.00%

2.3 Planned Conditions

2.3.1 Changes to the Area Transportation Network

The proposed development is subject to the Arterial Main Street policies, but no transportation upgrades are currently planned within the Study Area.

2.3.2 Other Study Area Developments

At the time of this report, a few development applications were available for the adjacent properties as listed on the City's Development Application Search tool:

807/811/817/825 Montreal Road – 10 storey mixed-use apartment building with approximately 150 apartment units, 600 square metres of commercial area, 96 residential parking spaces, five commercial parking spaces and 76 bicycle parking spaces. The anticipated trip generation from this site is illustrated in Figure 9 and is an excerpt from the 807-825 Montreal Road Transportation Impact Study, prepared by CGH Transportation in 2018.



Figure 9: 807-825 Montreal Road Site-Generated Traffic Volumes

Source: 807-825 Montreal Road-Transportation Impact Study - February 2019

- 765 Montreal Road four-storey building proposed to replace the existing vacant detached dwelling. The
 proposed mixed-use building will include a community centre with 42 studio residential units above. No
 TIA is included on the City of Ottawa development application, but based on the size of the development
 and the proposed land uses, it is anticipated that this development will not trigger a TIA and will not
 generate a significant amount of traffic.
- 681 Mikinak Road Site plan control application to develop four, mid-rise, mixed-use buildings with a total of 357 residential units and 2,088 square metres of commercial space. There are 37 proposed surface parking spaces, 381 proposed underground parking spaces and 184 bicycle spaces. No TIA is included on the City of Ottawa development application, and so at this time the site-generated traffic is unknown.



- 745 Mikinak Road Site plan control application to develop a three-storey, 40-unit apartment building with 19 outdoor parking spaces and twenty bicycle parking spaces. No TIA is required at this site and so it is anticipated that the development will not generate a significant amount of traffic.
- 245 Squadron Crescent/ 335 St. Laurent Boulevard/775 Mikinak Road / 1400 Hemlock Road Zoning Bylaw Amendment Application and a Site Plan Control application to allow for the construction of residential dwellings on three blocks in the Wateridge Village Phase 1B development. Between the three blocks, a total of 312 townhouse and stacked townhouse units are proposed. The anticipated trip generation from this site can be seen in Figure 10 and is an excerpt from Wateridge Village Phase 1B-Blocks 15, 22, and 24 Transportation Overview.

Figure 10: 245 Squadron Cres/335 St. Laurent Blvd/775 Mikinak Rd/1400 Hemlock Rd Site-Generated Traffic Volumes



Source: Wateridge Village Phase 1B-Blocks 15, 22, and 24 Transportation Overview-August 11, 2017

3 Study Area and Time Periods

3.1 Study Area

The Study Area will include the intersection of Montreal Road at Codd's Road / Carsons Road.

3.2 Time Periods

The AM and PM peak hours will be examined for the proposed development.

3.3 Horizon Years

The anticipated build-out year is 2022. As a result, the full build-out plus five years horizon year is 2027.



4 Exemption Review

Table 4 summarizes the exemptions for this TIA.

Table 4: Exemption Review					
Module	Element	Explanation	Exempt/Required		
Design Review Compo	nent				
4.1 Development	4.1.2 Circulation	Only required for site plans	Required		
Design	4.2.3 New Street Networks	Only required for plans of subdivision	Exempt		
	4.2.1 Parking Supply	Only required for site plans	Required		
4.2 Parking	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Exempt		
Network Impact Comp	onent				
4.5 Transportation Demand Management	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	Exempt		
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Exempt		
4.8 Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt		

In addition to the above TIA requirements and exemptions, the following exemptions in Table 5 are also recommended for this TIA.

Table 5:	Recommende	d Additional	Exemptions
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Module	Element	Explanation			
Forecasting					
3.1 Development Generated Travel Demand	All Elements	Trip generation trigger was not met, therefore trip and mode share forecasting is not required for the subject site. An estimation of the on-site activity is less than 10 person trips during the peak hour.			
3.2 Background Network Travel Demand	All Elements	No intersection constraints were noted for the existing volumes and the background growth would continue to be accommodated within the network.			
3.3 Demand Rationalization	All Elements	Subject to the trip generation trigger not being met, no demand rationalization is required as part of this TIA. The existing conditions summarized in Section 2.2.7 illustrate residual capacity in the existing road network and the network can support the anticipated trip generation of the proposed development.			
Design Review Component					
4.3 Boundary Street Design	All Elements	Along Montreal Road, the ROW is designated as a design priority area. This street will be upgraded as a whole corridor. The frontage of the subject site along Montreal Road is also very short and any MMLOS upgrades would not be continuous. A ROW widening has been taken			



Module	Element	Explanation				
		along the Montreal Road frontage to allow for future upgrades to the entire corridor.				
4.4 Access Intersection Design	4.4.2 Intersection Control 4.4.3 Intersection Design	The access intersection is anticipated to be a typical private approach design, completed as per City standards and operational requirements for site vehicles. Therefore, the need for a TIA to review the intersection control or operational characteristics is not required and can be completed as part of the site plan review process within the existing submission.				
Network Impact Components						
4.7 Transit	All Elements	Subject to the trip generation trigger not being met, no demand rationalization is required as part of this TIA as there will not be a significant increase in the number of transit riders as a result of this development.				
4.9 Network Intersections	All Elements	As outlined previously in this table, the low traffic generation will have minimal impact on network intersections and sufficient capacity is currently provided to accommodate an increase in line with background growth.				



5 Design Review Component

5.1 Development Design

5.1.1 Circulation and Access Location / Design

The proposed site plan includes one access point, which provides access to 10 commercial parking spaces and five residential garage parking spaces. This access will meet the private approach bylaw in terms of access width and grade. This access point is located approximately 30 metres north of the Codd's Road at Montreal Road intersection. The driveway has been located on the site such that it maximizes the distance between the driveway and the intersection while still allowing parking along the northern edge of the drive aisle.

Garbage collection will be via curbside pickup at the Codd's Road access. The access will accommodate passenger vehicles only and therefore no turning templates are required for site circulation of municipal vehicles. Emergency services will access the building from the adjacent streets and will not be required to circulate the proposed site.

5.2 Parking Supply

The proposed development will have a total of fifteen parking spaces. Of these spaces, 10 are outdoor commercial parking spaces and five are indoor residential spaces in garages. Table 6 below summarizes the required and provided parking for the proposed development.

Land Use	Units / GFA	Parking Rate	Required Parking	Provided Parking	Surplus / (Deficit)
Residential- Detached Dwelling	1 unit	1/unit	1	3	2
Residential-Three Unit Dwelling	3 units	0.5/unit	2	2	0
Office	420 s.m.	1/100 s.m.	5	10	5
Total			8	15	7

Table 6: Parking Statistic Summary

The proposed site plan will include a total of 15 parking spaces which is seven more than the minimum required under the zoning by-law.



6 Multi-Modal Level of Service

Intersection Multi-Modal Level of Service (MMLOS) is only undertaken at signalized intersections. Therefore, this section will examine both the segment and intersection MMLOS for Montreal Road at Codd's Road / Carsons Road.

6.1 Pedestrian MMLOS

The primary intent of the Pedestrian Level of Service (PLOS) tool is to evaluate pedestrian comfort, safety and convenience. Segment MMLOS for pedestrian facilities is evaluated based the quality of pedestrian facilities and roadway characteristics, as well as looking at the impact of adjacent traffic. Along both frontages of the site, the existing sidewalks will be maintained, each of which are currently 2.0 metres in width and have no boulevard. Montreal Road is estimated to have an AADT greater than 3000 and Codd's Road is estimated to have an AADT less than 3000. Table 7 below shows the actual and target PLOS.

Table 7: Pedestrian LOS					
Segment	PLOS	Land Use Designation	Target		
Montreal Road	E	Arterial Main Street	С		
Codd's Road	В	General Urban Area	С		

Montreal Road does not meet its PLOS Target while Codd's Road does. A road widening easement has been taken along the Montreal Road frontage. At the time that Montreal Road is reconstructed, the PLOS will be improved by constructing upgraded sidewalks and providing a boulevard, if required.

Intersection MMLOS for pedestrian facilities is undertaken at signalized intersections. Using various intersection geometry elements and their corresponding points tables, the total Pedestrian Exposure to Traffic at Signalized Intersections (PETSI) score can be determined. Table 8 summarizes the PETSI score evaluation for the signalized intersection of Montreal Road at Codd's Road / Carsons Road.

Tuble 8. PETSI Score Montreal Road at Coad's Road / Carson's Road									
	Crossing Ea	st West	Crossing Eas	st West	Crossing Nort	th South	Crossing Nort	h South	
	(North App	proach)	(South App	(South Approach) (East A		(East Approach) (V		West Approach)	
Element	Condition	Points	Condition	Points	Condition	Points	Condition	Points	
Crossing	3 Lanes- No	105	3 Lanes- No	105	6 Lanes- No	55	5 Lanes- No	72	
Distance	Median		Median		Median		Median		
Island	No	-4	No	-4	No	-4	No	-4	
Refuge									
Left Turn Type	Permissive	-8	Permissive	-8	Permissive	-8	Protected / permissive	-8	
Right Turn Conflict	Permissive	-4	Permissive	-4	Permissive	-4	Permissive	-4	
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	
Leading Ped. Interval	No	-2	No	-2	No	-2	No	-2	
Corner Radius	>10m to 15m	-6	>10m to 15m	-6	>10m to 15m	-6	>10m to 15m	-6	
Crosswalk	Standard Markings	-7	Standard Markings	-7	Standard Markings	-7	Standard Markings	-7	
	Actual	C 71	Actual	C 71	Actual	F 21	Actual	E 38	

Table 8: PETSI Score Montreal Road at Codd's Road / Carsons Road



	Crossing Ea	ast We	est	Crossing Eas	st Wo	est	Crossing Nor	rth So	outh	Crossing No	rth So	outh
	(North Ap	proac	h)	(South App	roac	:h)	(East App	roach	า)	(West App	proach	h)
PETSI LOS	Target	С		Target	С		Target	С		Target	С	

The east-west pedestrian crossings on both the north and south approaches meet the target PLOS C for an arterial main street. The north-south pedestrian crossings does not meet the target PLOS C for an arterial main street on either the east or west approaches. The north-south pedestrian crossing is dominant as it has the lowest PETSI score, giving the intersection a LOS F. This existing intersection has a very long north-south crossing distance and would be very difficult to improve without removing lanes on Montreal Road, which is not feasible. Therefore, in this case the intersection LOS F should be tolerated as it is not reasonable to achieve the target PLOS.

6.2 Bicycle MMLOS

Bicycle LOS (BLOS) is evaluated by analyzing elements that impact the level of traffic stress (LTS) experienced by cyclists at both segments and signalized intersections.

Segment MMLOS for bicycle facilities is evaluated based on a look-up table and the cross-section and roadway characteristics. Montreal Road provides bike lanes as part of the spine network and Codd's Road provides mixed traffic cycling facilities. Table 9 summarizes the actual and target BLOS.

Segment	BLOS	Land Use Designation	Target
Montreal Road	С	Arterial Main Street	С
Codd's Road	В	General Urban Area	D

Table 9. Bicycle LOS for Road Seaments

Both streets meet their target BLOS. These may be further improved upon as part of the future Ultimate Cycling Network and any Arterial Main Street policies.

For the existing intersection of Montreal Road at Codd's Road / Carsons Road, the Pocket Bike Lanes on a Signalized Intersection Approach criteria has been applied along Montreal Road. Along the minor street, the Mixed Traffic on a Signalized Intersection Approach has been applied. Table 10 summarizes the BLOS for the intersection of Montreal Road at Codd's Road / Carsons Road.

	North-South		East-West		
Right-turn Lane and Turning Speed of Motorists	No Right Turn Lanes	N/A	No Right Turn Lanes	N/A	
Cyclist Making a Left-turn and Operating Speed of Motorists	1 lane crossed, 50 km/h	D	2 or more lanes crossed, ≥ 50 km/h	F	

Both the north-south approach and the east-west approach do not meet the target BLOS of C for an Arterial Main Street. The east-west direction is dominant as it has the lowest LOS, giving the intersection a LOS F. The BLOS for the east-west approaches are governed by the number of lanes crossed and the operating speed on Montreal Road. A bike box style left turn would have to be implemented to improve the LOS along with eliminating the right turn lanes. This is not considered feasible at this existing intersection.



6.3 Transit MMLOS

Transit LOS (TLOS) is evaluated by examining the average signal delay and the relative attractiveness of transit compared to automobile trips.

The TLOS for Montreal Road is F and the TLOS for Codd's Road is E. Segment MMLOS for transit is primarily applied along corridors with existing rapid transit priority measures of which neither Montreal Road or Codd's Road have. For this reason no TLOS Targets are provided for these segments in Table 11 which summarizes the segment Transit LOS.

Segment	Facility Type	TLOS
Montreal Road	Mixed Traffic-Frequent parking/driveway friction	F
Codd's Road	Mixed Traffic-Moderate	E

parking/driveway friction

Table 11: Transit LOS for Road Segment

While transit service is provided along the frontage of the proposed development, no Transit Upgrades are anticipated within the Study Horizon. Therefore, the TLOS for the intersection is F, until TSP or BRT is implemented.

6.4 Truck MMLOS

The intent of truck LOS (TkLOS) is to facilitate goods movement and as such is applied only along truck routes, arterial roads and key delivery access roads.

Segment MMLOS for trucks is evaluated based on the curb lane width and the number of travel lanes. Montreal Road is a designated trucking route while Codd's Road is not. For this reason, only Montreal Road is included in Table 12 which summarizes the segment Truck LOS.

Table 12:Truck LOS for Road Segments				
Segment	TkLOS	Land Use Designation	Target	
Montreal Road	А	Arterial Main Street	D	

Montreal Road meets the Truck LOS target.

Truck LOS is evaluated by examining intersection geometry including corner radius and the number of receiving lanes. Table 13 summarizes the TkLOS for Montreal Road at Codd's Road / Carsons Road.

Table 13: Truck I	LOS Criteria Montreal	Road at Codd's Road	/ Carsons Road
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	North-South	East-West
Corner Radius	10 to 15m	10 to 15m
Receiving Lanes	2	1
TkLOS	В	E

As Montreal Road is a designated trucking route, the east-west approach does not meet the corresponding TkLOS target of D. Codd's Road is not a trucking route and TkLOS is met in the north-south direction. The east-west approach is dominant and therefore gives the intersection its TkLOS of E.



7 Summary and Conclusion

Based on the foregoing TIA, the following transportation related conclusions can be offered.

- A. The proposed development at 875 Montreal Road will include four residential units and 420 square metres of office space.
- B. The proposed development will trigger the Design Review component of the TIA Guidelines, based on the Design Priority Area criteria, as the section of Montreal Road adjacent to the site is designated as part of the Montreal Road Arterial Main Street.
- C. The proposed development will trigger the Design Review component of the TIA Guidelines, as part of the safety trigger criteria, as the proposed driveway on Codd's Road is within 150m of a signalized intersection.
- D. The existing development is served by OCTranspo Routes 12, 17, 27, and 129 with stops at the signalized intersection of Montreal Road at Codd's Road / Carsons Road
- E. The operational analysis of the intersection of Montreal Road at Codd's Road / Carsons Road illustrated that the intersection is operating well and there is residual capacity to accommodate additional vehicular traffic.
- F. Twenty-one collisions have been reported at the intersection of Montreal Road at Codd's Road / Carsons Road within a five-year period prior to this report. No patterns have been identified and as such no resulting mitigation measures are required.
- G. The MMLOS review has shown that the Montreal Road segment adjacent to the subject development meets the criteria for an Arterial Main Street area, with the exception of the pedestrian LOS and transit LOS.
- H. The MMLOS review has shown that the Codd's Road segment adjacent to the subject development meets the criteria for a General Urban Area, with the exception of the transit LOS.
- I. The MMLOS review has shown that Montreal Road at Codd's Road / Carsons Road does not meet the criteria for an Arterial Main Street area. Future changes due to Arterial Main Street policies are expected to improve these results.
- J. The site design characteristics have been reviewed and it has been determined that intersection location and design is appropriate for the proposed land use and will allow access to and from the proposed parking lots.
- K. The proposed 15 parking spaces are adequate to support the proposed development.

Given the above, it is the recommendation of this Screening/Scoping Report that the TIA requirements for the proposed development have been met and no further review or assessment of the development is required.

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Appendix A

TIA Screening Form and PM Certification Form



City of Ottawa 2017 TIA Guidelines	Date:	25-Nov-19
Step 1 - Screening Form	Project Number:	2019-05
	Project Reference:	875 Montreal Road

1.1 Description of Proposed Development	
Municipal Address	875 Montreal Road
Description of Location	PLAN 22 PT LOT 1 LOT 2;BRUNEL W
Land Use Classification	AM 10 [2199]- Arterial Mainstreet
Development Size	4 residential units, 420 s.m. office space, 10 outdoor parking spaces, 5 indoor parking spaces in a garage
	area
Accesses	One access on Codds Road
Phase of Development	Two Phases
Buildout Year	2022
TIA Requirement	Design Review Component

1.2 Trip Generation Trigger	
Land Use Type	See attached. Does not meet Trip Gen Trigger.
Development Size	G.F.A.
Trip Generation Trigger	Enter Size

1.3 Location Triggers	
Does the development propose a new driveway to a boundary street that	
is designated as part of the City's Transit Priority, Rapid Transit or Spine	No
Bicycle Networks?	
Is the development in a Design Priority Area (DPA) or Transit-oriented	Vac
Development (TOD) zone?	res
Location Trigger	Yes

1.4. Safety Triggers	
Are posted speed limits on a boundary street are 80 km/hr or greater?	No
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	Yes
Is the proposed driveway within auxiliary lanes of an intersection?	No
Does the proposed driveway make use of an existing median break that serves an existing site?	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	No
Does the development include a drive-thru facility?	No
Safety Trigger	Yes

Land Use Type	Min. Dev. Size	Units/m ²	Developme	ent
Single-family homes	40	Units		
Townhomes or apartments	90	Units	4	4%
Office	3500	m ²	420	12%
Industrial	500	m ²		
Fast-food restaurant or coffee shop	100	m ²		
Destination retail	1000	m ²		
Gas station or convenience market	75	m ²		
			Total	16%



TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

- 1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
- 2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- 3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- 4. I am either a licensed¹ or registered² professional in good standing, whose field of expertise [check $\sqrt{}$ appropriate field(s)] is either transportation engineering $\sqrt{}$ or transportation planning \Box .

^{1,2} License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

City Of Ottawa Infrastructure Services and Community Sustainability Planning and Growth Management 110 Laurier Avenue West, 4th fl. Ottawa, ON K1P 1J1 Tel.: 613-580-2424 Fax: 613-560-6006 Ville d'Ottawa Services d'infrastructure et Viabilité des collectivités Urbanisme et Gestion de la croissance 110, avenue Laurier Ouest Ottawa (Ontario) K1P 1J1 Tél.: 613-580-2424 Télécopieur: 613-560-6006

Dated at	<u>Newmarket</u>	this	25	day of	<u>November</u>	, 2019.
_	(City)					

Name:

Mark Crockford (Please Print)

(Fieas

Professional Title:

Professional Engineer

Signature of Individual certifier that s/he meets the above four criteria

Office Contact Information (Please Print)

Address: 628 Haines Road

City / Postal Code: Newmarket / L3Y 6V5

Telephone / Extension: (905) 251-4070

E-Mail Address: Mark.Crockford@CGHTransportation.com





Traffic Data



















Turning Movement Count - Full Study Diagram

MONTREAL RD @ CARSON'S RD/CODD'S RD





38341

Turning Movement Count - Full Study Summary Report

MONTREAL RD @ CARSON'S RD/CODD'S RD

Survey Da	ate: \	Nedne	esday,	Janua	ary 30,	201		Total Observed U-Turns									AADT Factor		
							l	Northbou	und: 1		Sout	thbound	d: 0				1.00		
								Eastbou	nd: 7		Wes	stbound	l: 11						
								F	ull Stu	udy									
		CA	RSON	I'S RD	/CODE)'S RE)					Μ	ONTRI	EAL F	RD				
-	Ν	orthb	ound		S	Southb	ound		_		Eastb	ound			Westb	ound			
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08:00 09:00	82	10	38	130	27	8	84	119	249	41	716	99	856	51	1034	29	1114	1970	2219
09:00 10:00	41	4	16	61	17	1	50	68	129	39	650	67	756	22	724	22	768	1524	1653
11:30 12:30	50	2	17	69	15	3	50	68	137	41	735	80	856	28	637	21	686	1542	1679
12:30 13:30	61	2	31	94	25	1	33	59	153	31	635	62	728	26	651	21	698	1426	1579
15:00 16:00	91	8	43	142	50	5	75	130	272	48	1002	77	1127	29	865	19	913	2040	2312
16:00 17:00	72	2	36	110	32	2	60	94	204	59	1148	73	1280	26	781	19	826	2106	2310
17:00 18:00	65	4	39	108	22	4	41	67	175	66	1038	71	1175	28	665	14	707	1882	2057
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EQ 12Hr	753	49	346	1150	289	40	634	963	2113	559	9089	960	10618	428	8890	256	9590	20208	22321
Note: These	values a	re calcu	lated by	y multipl	ying the	totals b	y the ap	opropriat	e expans	ion fac	tor.			1.39					
AVG 12Hr	753	49	346	1150	289	40	634	963	2113	559	9089	960	10618	428	8890	256	9590	20208	22321
Note: These	volumes	are calo	culated	by multi	plying th	e Equiv	alent 1	2 hr. tota	ls by the	AADT	factor.			1.00					
AVG 24Hr	987	64	453	1506	379	53	830	1262	2768	732	11907	1258	13910	561	11646	335	12562	26472	29240
Note: These	volumes	are calo	culated	by multi	plying th	e Avera	age Dail	y 12 hr.	totals by	12 to 2	24 expan	ision fa	ctor.	1.31					

Comments:

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



Transportation Services - Traffic Services W.O.

Turning Movement Count - 15 Minute Summary Report

MONTREAL RD @ CARSON'S RD/CODD'S RD

	Survey Date: Wednesday, January 30, 201							2019		٦	otal	Obser	ved l	J-Turn	S						
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16:15 16:30 14 0 7 21 10 0 23 33 54 11 293 19 323 3 201 5 209 532 586 16:30 16:45 11 1 9 21 11 1 16 28 49 18 294 19 331 7 189 3 199 530 579 16:45 17:00 20 0 8 28 3 0 5 8 36 14 266 21 301 10 168 6 184 485 521 16:45 17:00 17:15 16 2 11 29 9 0 11 20 499 17 275 14 307 8 191 4 204 511 560 17:15 17:30 13 0 16 29 1 11 14 40 10 265 18 293 5 154 3 162 455 495 495	16:00	16:15	27	1	12	40	8	1	16	25	65	16	295	14	325	6	223	5	235	560	625
16:30 16:45 11 1 9 21 11 1 16 28 49 18 294 19 331 7 189 3 199 530 579 16:45 17:00 20 0 8 28 3 0 5 8 36 14 266 21 301 10 168 6 184 485 521 17:00 17:15 16 2 11 29 9 0 11 20 49 17 275 14 307 8 191 4 204 511 560 17:15 17:30 13 0 16 29 5 1 10 16 45 15 269 12 298 5 165 1 171 469 514 17:30 17:45 17 1 8 26 2 1 11 14 40 10 265 18 293 5 154 3 162 455 495 <t< td=""><td>16:15</td><td>16:30</td><td>14</td><td>0</td><td>7</td><td>21</td><td>10</td><td>0</td><td>23</td><td>33</td><td>54</td><td>11</td><td>293</td><td>19</td><td>323</td><td>3</td><td>201</td><td>5</td><td>209</td><td>532</td><td>586</td></t<>	16:15	16:30	14	0	7	21	10	0	23	33	54	11	293	19	323	3	201	5	209	532	586
16:45 17:00 20 0 8 28 3 0 5 8 36 14 266 21 301 10 168 6 184 485 521 17:00 17:15 16 2 11 29 9 0 11 20 49 17 275 14 307 8 191 4 204 511 560 17:15 17:30 13 0 16 29 5 1 10 16 45 15 269 12 298 5 165 1 171 469 514 17:30 17:45 17 1 8 26 2 1 11 14 40 10 265 18 293 5 154 3 162 455 495 17:45 18:00 19 1 4 24 21 17 41 24 229 27 280 10 155 6 172 452 493 TOTAL: 542	16:30	16:45	11	1	9	21	11	1	16	28	49	18	294	19	331	7	189	3	199	530	579
17:00 17:15 16 2 11 29 9 0 11 20 49 17 275 14 307 8 191 4 204 511 560 17:15 17:30 13 0 16 29 5 1 10 16 45 15 269 12 298 5 165 1 171 469 514 17:30 17:45 17 1 8 26 2 1 11 14 40 10 265 18 293 5 154 3 162 455 495 17:45 18:00 19 1 4 24 6 2 9 17 41 24 229 27 280 10 155 6 172 452 493 TOTAL: 542 35 249 827 208 29 163 691 7639 308 6396 184 6899 14538 16058	16:45	17:00	20	0	8	28	3	0	5	8	36	14	266	21	301	10	168	6	184	485	521
17:15 17:30 13 0 16 29 5 1 10 16 45 15 269 12 298 5 165 1 171 469 514 17:30 17:45 17 1 8 26 2 1 11 14 40 10 265 18 293 5 154 3 162 455 495 17:45 18:00 19 1 4 24 6 2 9 17 41 24 229 27 280 10 155 6 172 452 493 TOTAL: 542 35 249 827 208 29 456 693 1520 402 6539 691 7639 308 6396 184 6899 14538 16058 184 6899 14538 16058	17:00	17:15	16	2	11	29	9	0	11	20	49	17	275	14	307	8	191	4	204	511	560
17:30 17:45 17 1 8 26 2 1 11 14 40 10 265 18 293 5 154 3 162 455 495 17:45 18:00 19 1 4 24 6 2 9 17 41 24 229 27 280 10 155 6 172 452 493 TOTAL: 542 35 249 827 208 29 451 402 6539 691 7639 308 6396 184 6899 14538 16058	17:15	17:30	13	0	16	29	5	1	10	16	45	15	269	12	298	5	165	1	171	469	514
17:45 18:00 19 1 4 24 6 2 9 17 41 24 229 27 280 10 155 6 172 452 493 TOTAL: 542 35 249 827 208 29 456 693 1520 402 6539 691 7639 308 6396 184 6899 14538 16058	17:30	17:45	17	1	8	26	2	1	11	14	40	10	265	18	293	5	154	3	162	455	495
TOTAL: 542 35 249 827 208 29 456 693 1520 402 6539 691 7639 308 6396 184 6899 14538 16058	17:45	18:00	19	1	4	24	6	2	9	17	41	24	229	27	280	10	155	6	172	452	493
	TOTAL	.: 5	542	35	249	827	208	29	456	693	1520	402	6539	691	7639	308	6396	184	4 689	9 14538	16058

Note: U-Turns are included in Totals.

.



Transportation Services - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order

38341

MONTREAL RD @ CARSON'S RD/CODD'S RD

Count Date: Wednesday, January 30, 2019

Start Time: 07:00

_	CARS	ON'S RD/CODD	'S RD		D				
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total		
07:00 08:00	0	0	0	0	2	2	2		
08:00 09:00	0	1	1	0	0	0	1		
09:00 10:00	0	0	0	0	0	0	0		
11:30 12:30	0	0	0	0	0	0	0		
12:30 13:30	1	0	1	0	0	0	1		
15:00 16:00	0	0	0	0	0	0	0		
16:00 17:00	0	0	0	1	0	1	1		
17:00 18:00	0	0	0	1	0	1	1		
Total	1	1	2	2	2	4	6		

Comment:

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary.



38341

Turning Movement Count - Heavy Vehicle Report

MONTREAL RD @ CARSON'S RD/CODD'S RD

MONTREAL RD

Survey Date: Wednesday, January 30, 2019

CARSON'S	RD/CODD'S RD
0/11/00/11/0	

		Northb	ound		5	Southb	ound	_			Eastb	ound		1	Westbo	ound				
Time P	eriod	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	Е ТОТ	LT	ST	RT	w тот	STR TOT	Grand Total
07:00	08:00	6	0	3	9	3	0	5	8	17	12	17	14	43	8	23	1	32	75	92
08:00	09:00	1	1	1	3	3	0	3	6	9	4	27	6	37	3	30	4	37	74	83
09:00	10:00	3	0	0	3	2	0	1	3	6	2	25	3	30	1	19	0	20	50	56
11:30	12:30	1	0	0	1	0	0	3	3	4	1	21	4	26	1	16	2	19	45	49
12:30	13:30	1	0	0	1	1	0	2	3	4	1	17	6	24	2	21	3	26	50	54
15:00	16:00	4	0	2	6	0	0	4	4	10	3	22	6	31	0	33	2	35	66	76
16:00	17:00	1	0	0	1	4	0	4	8	9	5	25	5	35	4	13	2	19	54	63
17:00	18:00	0	0	0	0	3	0	3	6	6	3	12	7	22	0	14	2	16	38	44
Sub T	otal	17	1	6	24	16	0	25	41	65	31	166	51	248	19	169	16	204	452	517
U-Turns	s (Heav	vy Veh	icles)		0				0	0				0				0	0	0
Tota	al	17	1	6	0	16	0	25	41	65	31	166	51	248	19	169	16	204	452	517



Transportation Services - Traffic Services

Work Order

38341

Turning Movement Count - Pedestrian Volume Report

MONTREAL RD @ CARSON'S RD/CODD'S RD

Count Dat	e: Wednesday,	January 30, 2019				Start Time:	07:00
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	6	0	6	6
07:15 07:30	12	2	14	11	2	13	27
07:30 07:45	8	8	16	21	1	22	38
07:45 08:00	19	6	25	17	5	22	47
07:00 08:00	39	16	55	55	8	63	118
08:00 08:15	10	2	12	18	2	20	32
08:15 08:30	8	11	19	8	0	8	27
08:30 08:45	7	5	12	7	5	12	24
08:45 09:00	6	3	9	15	2	17	26
08:00 09:00	31	21	52	48	9	57	109
09:00 09:15	5	0	5	10	1	11	16
09:15 09:30	3	4	7	5	4	9	16
09:30 09:45	3	1	4	13	0	13	17
09:45 10:00	1	1	2	2	0	2	4
09:00 10:00	12	6	18	30	5	35	53
11:30 11:45	9	1	10	6	3	9	19
11:45 12:00	2	5	7	9	4	13	20
12:00 12:15	4	5	9	6	3	9	18
12:15 12:30	11	2	13	9	4	13	26
11:30 12:30	26	13	39	30	14	44	83
12:30 12:45	5	2	7	5	1	6	13
12:45 13:00	4	1	5	2	4	6	11
13:00 13:15	7	2	9	10	0	10	19
13:15 13:30	10	2	12	18	3	21	33
12:30 13:30	26	7	33	35	8	43	76
15:00 15:15	16	1	17	15	2	17	34
15:15 15:30	16	2	18	9	3	12	30
15:30 15:45	8	6	14	8	5	13	27
15:45 16:00	10	1	11	5	4	9	20
15:00 16:00	50	10	60	37	14	51	111
16:00 16:15	12	7	19	12	8	20	39
16:15 16:30	13	4	17	12	1	13	30
16:30 16:45	6	4	10	8	4	12	22
16:45 17:00	7	1	8	5	3	8	16
16:00 17:00	38	16	54	37	16	53	107
17:00 17:15	8	0	8	5	3	8	16
17:15 17:30	5	4	9	13	4	17	26
17:30 17:45	7	4	11	8	5	13	24
17:45 18:00	12	0	12	7	3	10	22
17:00 18:00	32	8	40	33	15	48	88
Total	254	97	351	305	89	394	745

Comment:



Turning Movement Count - 15 Min U-Turn Total Report

MONTREAL RD @ CARSON'S RD/CODD'S RD

Survey Date:	Wed	lnesday, January	30, 2019			
Time Pe	riod	Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	1	0	0	1	2
08:30	08:45	0	0	1	0	1
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	1	0	1
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	1	0	1
11:30	11:45	0	0	0	1	1
11:45	12:00	0	0	0	0	0
12:00	12:15	0	0	1	1	2
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	2	2
12:45	13:00	0	0	0	0	0
13:00	13:15	0	0	0	1	1
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	2	2
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	1	1
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	1	1	2
17:15	17:30	0	0	2	0	2
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	1	1
Tota	1	1	0	7	11	19

Traffic Signal Timing

	City of Ott	awa, Transportation	Services Departme	nt
		Traffic Signal Opera	tions Unit	
Intersection:	Main:	Montreal	Side:	Carson/Codd's
Controller:	ATC-3		TSD:	5200
Author:	Sarah S	Saade	Date:	30-Jul-2018

Existing Timing Plans[†]

	Plan						Ped Mir	nimum T	ime
	AM Peak	Off Peak	PM Peak	Night	AM Heavy	Evening	Walk	DW	A+R
	1	2	3	4	11	12			
Cycle	105	100	120	65	120	95			
Offset	31	45	16	х	5	36			
EB Thru	70	65	82	30	80	60	7	16	3.7+2.3
WB Thru	57	49	67	30	67	44	7	16	3.7+2.3
NB Thru	35	35	38	35	40	35	7	22	3.3+3.2
SB Thru	35	35	38	35	40	35	7	22	3.3+3.2
EB Left	13	16	15	-	13	16	-	-	3.7+1.0

Phasing Sequence[‡]



Schedule

Weekday		Weeken	d
Time	Plan	Time	Plan
0:15	4	0:15	4
6:30	1	8:30	2
7:15	11	 23:30	4
9:30	2		
15:00	3		
18·30	12		

22:30 4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

<----> Pedestrian signal

Appendix C

Synchro Worksheets – Existing Conditions

Lanes, Volumes, Timings 1: Carsons Road/Codd's Road & Montreal Road

	٦	-	\mathbf{r}	4	-	•	1	†	1	1	Ŧ	-
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	≜ 1≽		5	≜ 16		ሻ	ĥ		5	f,	
Traffic Volume (vph)	61	691	164	112	1020	26	115	10	53	25	9	90
Future Volume (vph)	61	691	164	112	1020	26	115	10	53	25	9	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	65.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			30.0			30.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.996			0.874			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1593	3093	0	1593	3173	0	1593	1465	0	1593	1448	0
Flt Permitted	0.176			0.301			0.686			0.711		
Satd. Flow (perm)	295	3093	0	505	3173	0	1150	1465	0	1192	1448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50			3			59			100	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		222.5			108.5			102.1			100.9	
Travel Time (s)		13.4			6.5			7.4			7.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	768	182	124	1133	29	128	11	59	28	10	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	950	0	124	1162	0	128	70	0	28	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			CI+Ex			Cl+Ex	
Detector 2 Channel		• •										
Detector 2 Extend (s)		0.0		_	0.0		_	0.0		_	0.0	
Iurn Iype	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		_	6		_	8			4	
Permitted Phases	2			6			8			4		

875 Montreal Road 07-10-2019 2019 Existing - AM RM

CGH Transportation Page 1

Lanes, Volumes, Timings 1: Carsons Road/Codd's Road & Montreal Road

	٦	→	\mathbf{F}	4	+	*	•	t	1	1	Ļ	~
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	9.7	29.0		29.0	29.0		35.5	35.5		35.5	35.5	
Total Split (s)	13.0	69.5		56.5	56.5		35.5	35.5		35.5	35.5	
Total Split (%)	12.4%	66.2%		53.8%	53.8%		33.8%	33.8%		33.8%	33.8%	
Maximum Green (s)	8.3	63.5		50.5	50.5		29.0	29.0		29.0	29.0	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	2.3		2.3	2.3		3.2	3.2		3.2	3.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.7	6.0		6.0	6.0		6.5	6.5		6.5	6.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	(C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		16.0		16.0	16.0		22.0	22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	76.7	75.4		65.9	65.9		17.1	17.1		17.1	17.1	
Actuated g/C Ratio	0.73	0.72		0.63	0.63		0.16	0.16		0.16	0.16	
v/c Ratio	0.23	0.43		0.39	0.58		0.68	0.24		0.14	0.34	
Control Delay	6.9	7.0		17.5	14.8		58.7	13.7		36.6	11.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.9	7.0		17.5	14.8		58.7	13.7		36.6	11.6	
LOS	А	А		В	В		Е	В		D	В	
Approach Delay		7.0			15.1			42.8			16.7	
Approach LOS		А			В			D			В	
Queue Length 50th (m)	3.3	33.4		12.1	70.9		25.0	1.9		5.0	1.7	
Queue Length 95th (m)	9.1	57.5		33.1	114.4		41.1	12.8		11.8	15.1	
Internal Link Dist (m)		198.5			84.5			78.1			76.9	
Turn Bay Length (m)	100.0			65.0			25.0			25.0		
Base Capacity (vph)	318	2234		316	1991		317	447		329	472	
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	0.21	0.43		0.39	0.58		0.40	0.16		0.09	0.23	
Intersection Summary	000											
Area Type:	CRD											
Cycle Length: 105	0-											
Actuated Cycle Length: 10	05											
Offset: 31 (30%), Referen	ced to phase	e 2:EBTL a	and 6:WBT	L, Starl	t of Green							
Natural Cycle: 80												
Control Type: Actuated-C	oordinated											
Maximum v/c Ratio: 0.68				-		100 -						
Intersection Signal Delay:	14.1			lr	ntersection	1 LOS: B	-					
Intersection Capacity Utili Analysis Period (min) 15	zation 64.5%	0		10	U Level	of Service	ЭC					

Splits and Phases: 1: Carsons Road/Codd's Road & Montreal Road



	≯	-	\mathbf{r}	</th <th>-</th> <th>*</th> <th>1</th> <th>1</th> <th>1</th> <th>1</th> <th>ŧ</th> <th>~</th>	-	*	1	1	1	1	ŧ	~
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦ ۲	A12		۲	A12		7	f)		۳.	eî 🔒	
Traffic Volume (veh/h)	61	691	164	112	1020	26	115	10	53	25	9	90
Future Volume (veh/h)	61	691	164	112	1020	26	115	10	53	25	9	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1710	1676	1676	1710	1676	1676	1710	1676	1676	1710
Adj Flow Rate, veh/h	68	768	182	124	1133	29	128	11	59	28	10	100
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	1742	413	357	1890	48	222	46	246	259	26	262
Arrive On Green	0.04	0.68	0.68	0.60	0.60	0.60	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1597	2556	606	529	3174	81	1150	229	1230	1193	131	1313
Grp Volume(v), veh/h	68	478	472	124	569	593	128	0	70	28	0	110
Grp Sat Flow(s),veh/h/ln	1597	1593	1570	529	1593	1662	1150	0	1459	1193	0	1445
Q Serve(g s), s	1.6	14.4	14.4	14.6	23.6	23.6	11.4	0.0	4.2	2.1	0.0	6.9
Cycle Q Clear(g_c), s	1.6	14.4	14.4	20.0	23.6	23.6	18.3	0.0	4.2	6.4	0.0	6.9
Prop In Lane	1.00		0.39	1.00		0.05	1.00		0.84	1.00		0.91
Lane Grp Cap(c), veh/h	295	1085	1069	357	948	990	222	0	291	259	0	289
V/C Ratio(X)	0.23	0.44	0.44	0.35	0.60	0.60	0.58	0.00	0.24	0.11	0.00	0.38
Avail Cap(c_a), veh/h	355	1085	1069	357	948	990	310	0	403	350	0	399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.2	7.6	7.6	14.2	13.4	13.4	44.3	0.0	35.3	38.0	0.0	36.4
Incr Delay (d2), s/veh	0.4	1.3	1.3	2.7	2.8	2.7	2.3	0.0	0.4	0.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/In	0.7	6.6	6.5	2.4	11.0	11.5	3.8	0.0	1.7	0.7	0.0	2.8
LnGrp Delay(d),s/veh	10.6	8.9	8.9	16.9	16.2	16.1	46.7	0.0	35.7	38.2	0.0	37.2
LnGrp LOS	В	А	А	В	В	В	D		D	D		D
Approach Vol, veh/h		1018			1286			198			138	
Approach Delay, s/veh		9.0			16.2			42.8			37.4	
Approach LOS		А			В			D			D	
Timer	1	2	3	4	5	6	7	8				
Assianed Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		77.5		27.5	9.0	68.5		27.5				
Change Period (Y+Rc), s		6.0		6.5	* 4.7	6.0		6.5				
Max Green Setting (Gmax), s		63.5		29.0	* 8.3	50.5		29.0				
Max Q Clear Time (q c+I1), s		16.4		8.9	3.6	25.6		20.3				
Green Ext Time (p_c), s		9.1		0.8	0.1	11.9		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			16.5									
HCM 2010 LOS			В									
Notes												

875 Montreal Road 07-10-2019 2019 Existing - AM RM

Lanes, Volumes, Timings 1: Carsons Road/Codd's Road & Montreal Road

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	5	≜t ≽		5	≜t ⊾		5	ĥ		5	ĥ	
Traffic Volume (vph)	48	1002	77	29	865	19	91	8	43	50	5	75
Future Volume (vph)	48	1002	77	29	865	19	91	8	43	50	5	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	65.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			30.0			30.0			15.0		
Lane Util, Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.997			0.874			0.859	
Flt Protected	0.950			0.950			0.950			0.950		
Satd, Flow (prot)	1593	3150	0	1593	3176	0	1593	1465	0	1593	1440	0
Flt Permitted	0.251			0.241			0.701			0.720		
Satd, Flow (perm)	421	3150	0	404	3176	0	1175	1465	0	1207	1440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			3			47			82	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		222.5			125.7			77.1			60.0	
Travel Time (s)		13.4			7.5			5.6			4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adi, Flow (vph)	52	1089	84	32	940	21	99	9	47	54	5	82
Shared Lane Traffic (%)			•.	-	• • •			, T		•.		
Lane Group Flow (vph)	52	1173	0	32	961	0	99	56	0	54	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes									•	
Headway Factor	1.14	1.14	1.14	1,14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)	0.0	9.4		0.0	9.4		0.0	9.4		0.0	9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		0. <u>L</u> A						U . L A			0. <u>L</u> A	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+nt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		. 3	6		. 5	8			4	
Permitted Phases	2	_		6			8			4		

Lane Group EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT	SBR
Detector Phase 5 2 6 6 8 8 4 4	
Switch Phase	
Minimum Initial (s) 5.0 5.0 5.0 5.0 10.0 10.0 10.0 10.0	
Minimum Split (s) 9.7 29.0 29.0 29.0 35.5 35.5 35.5 35.5	
Total Split (s) 15.0 82.0 67.0 67.0 38.0 38.0 38.0 38.0	
Total Split (%) 12.5% 68.3% 55.8% 55.8% 31.7% 31.7% 31.7% 31.7%	
Maximum Green (s) 10.3 76.0 61.0 61.0 31.5 31.5 31.5 31.5	
Yellow Time (s) 3.7 3.7 3.7 3.3	
All-Red Time (s) 1.0 2.3 2.3 2.3 3.2 3.2 3.2 3.2	
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	
Total Lost Time (s) 4.7 6.0 6.0 6.0 6.5 6.5 6.5 6.5	
Lead/Lag Lead Lag Lag	
Lead-Lag Optimize? Yes Yes Yes	
Vehicle Extension (s) 3.0	
Recall Mode None C-Max C-Max C-Max None None None None	
Walk Time (s) 7.0 <	
Flash Dont Walk (s) 16.0 16.0 16.0 22.0 </td <td></td>	
Pedestrian Calls (#/hr) 0 0 0 0 0 0 0 0	
Act Effct Green (s) 93.0 91.7 82.5 82.5 15.8 15.8 15.8 15.8	
Actuated g/C Ratio 0.78 0.76 0.69 0.69 0.13 0.13 0.13 0.13 0.13	
v/c Ratio 0.13 0.49 0.12 0.44 0.64 0.24 0.34 0.33	
Control Delay 4.7 6.5 10.0 10.3 67.2 17.9 51.4 13.9	
Queue Delay 0.0 <th< td=""><td></td></th<>	
Total Delay 4.7 6.5 10.0 10.3 67.2 17.9 51.4 13.9	
LOS A A B B E B D B	
Approach Delay 6.5 10.3 49.4 28.3	
Approach LOS A B D C	
Queue Length 50th (m) 2.4 45.0 2.4 50.5 22.5 1.9 11.8 1.1	
Queue Length 95th (m) 6.6 74.0 8.1 79.3 38.4 12.9 22.9 14.6	
Internal Link Dist (m) 198.5 101.7 53.1 36.0	
Turn Bay Length (m) 100.0 65.0 25.0 25.0 25.0	
Base Capacity (vph) 426 2410 277 2185 308 419 316 438	
Starvation Cap Reductn 0	
Spillback Cap Reductn 0	
Storage Cap Reductn 0	
Reduced v/c Ratio 0.12 0.49 0.12 0.44 0.32 0.13 0.17 0.20	
Intersection Summary	
Area Type: CBD	
Cycle Length: 120	
Actuated Cycle Length: 120	
Uffset: 16 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Ivatural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum V/C Katio: U.64	
Intersection Signal Delay: 11.9 Intersection LUS: B	
Analysis Period (min) 15	

Splits and Phases: 1: Carsons Road/Codd's Road & Montreal Road



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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	↑ ĵ₀		1	↑ ĵ₀		1	el 🗍		1	el el	
Traffic Volume (veh/h)	48	1002	77	29	865	19	91	8	43	50	5	75
Future Volume (veh/h)	48	1002	77	29	865	19	91	8	43	50	5	75
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1676	1676	1710	1676	1676	1710	1676	1676	1710	1676	1676	1710
Adj Flow Rate, veh/h	52	1089	84	32	940	21	99	9	47	54	5	82
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	2210	170	312	2115	47	182	37	194	211	13	215
Arrive On Green	0.03	0.74	0.74	0.66	0.66	0.66	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1597	2997	231	429	3185	71	1174	235	1226	1208	83	1355
Grp Volume(v), veh/h	52	578	595	32	470	491	99	0	56	54	0	87
Grp Sat Flow(s),veh/h/ln	1597	1593	1636	429	1593	1664	1174	0	1460	1208	0	1437
Q Serve(q s), s	1.2	18.0	18.0	4.0	16.9	16.9	9.9	0.0	4.0	4.9	0.0	6.5
Cycle Q Clear(q c), s	1.2	18.0	18.0	13.2	16.9	16.9	16.4	0.0	4.0	8.9	0.0	6.5
Prop In Lane	1.00		0.14	1.00		0.04	1.00		0.84	1.00		0.94
Lane Grp Cap(c), veh/h	389	1174	1206	312	1057	1105	182	0	231	211	0	228
V/C Ratio(X)	0.13	0.49	0.49	0.10	0.44	0.44	0.54	0.00	0.24	0.26	0.00	0.38
Avail Cap(c a), veh/h	471	1174	1206	312	1057	1105	305	0	383	337	0	377
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.7	6.5	6.5	11.0	9.6	9.6	52.6	0.0	44.2	48.1	0.0	45.2
Incr Delay (d2), s/veh	0.2	1.5	1.4	0.7	1.4	1.3	2.5	0.0	0.5	0.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	8.4	8.6	0.5	7.7	8.0	3.3	0.0	1.7	1.7	0.0	2.7
LnGrp Delay(d),s/veh	6.8	8.0	7.9	11.7	11.0	10.9	55.1	0.0	44.7	48.7	0.0	46.3
LnGrp LOS	А	А	А	В	В	В	E		D	D		D
Approach Vol. veh/h		1225			993			155			141	
Approach Delay, s/veh		7.9			11.0			51.3			47.2	
Approach LOS		A			В			D			D	
Timer	1	2	3	Λ	5	6	7	8				
Assigned Phs		2	5		5	6		8				
Physical His Physical C+V+Rc) is		Q/ 5		25.5	8.8	85.7		25.5				
Change Period $(V+R_c)$ s		6.0		6.5	* / 7	6.0		6.5				
Max Green Setting (Gmax) s		76.0		31.5	* 10	61.0		31.5				
Max O Clear Time $(q, c+11)$ s		20.0		10.0	3.2	18.0		18./				
Green Ext Time (n, c) s		12.8		0.8	0.1	0.7		0.4				
		12.0		0.0	0.1	9.1		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.0									
HCM 2010 LOS			В									
Notes												



Collision Data

Accident Date	Accident Year	Accident Time	Location	Environment Condition	Light	Traffic Control	Classification Of Accident	Initial Impact Type	Road Surface Condition
2013-01-10	2013	11:30:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	03 - Rear end	02 - Wet
2013-06-28	2013	12:26:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	02 - Rain	01 - Daylight	01 - Traffic signal	03 - P.D. only	02 - Angle	02 - Wet
2014-08-05	2014	4:13:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	02 - Non-fatal injury	05 - Turning movement	01 - Dry
2014-10-08	2014	4:14:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	02 - Non-fatal injury	07 - SMV other	01 - Dry
2014-08-19	2014	8:47:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	03 - Rear end	01 - Dry
2014-11-01	2014	11:25:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	03 - Rear end	01 - Dry
2014-02-11	2014	7:50:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	04 - Sideswipe	05 - Packed snow
2014-12-03	2014	11:16:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	03 - Snow	01 - Daylight	01 - Traffic signal	03 - P.D. only	99 - Other	02 - Wet
2015-11-01	2015	4:36:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	05 - Dusk	01 - Traffic signal	02 - Non-fatal injury	07 - SMV other	01 - Dry
2015-01-27	2015	10:13:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	03 - Rear end	01 - Dry
2015-09-09	2015	4:00:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	07 - Dark	01 - Traffic signal	03 - P.D. only	07 - SMV other	01 - Dry
2015-03-03	2015	12:37:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	02 - Angle	01 - Dry
2015-04-09	2015	7:00:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	02 - Rain	05 - Dusk	01 - Traffic signal	03 - P.D. only	03 - Rear end	02 - Wet
2015-06-26	2015	11:43:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	07 - Dark	01 - Traffic signal	03 - P.D. only	05 - Turning movement	01 - Dry
2015-11-19	2015	4:54:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	02 - Rain	07 - Dark	01 - Traffic signal	03 - P.D. only	03 - Rear end	02 - Wet
2016-03-02	2016	8:19:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	03 - Snow	01 - Daylight	01 - Traffic signal	03 - P.D. only	03 - Rear end	04 - Slush
2016-12-08	2016	6:13:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	07 - Dark	01 - Traffic signal	03 - P.D. only	03 - Rear end	06 - Ice
2017-10-25	2017	12:06:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	05 - Turning movement	01 - Dry
2017-09-11	2017	9:20:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	02 - Non-fatal injury	03 - Rear end	01 - Dry
2017-03-08	2017	4:50:00 PM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	04 - Sideswipe	01 - Dry
2017-12-28	2017	8:01:00 AM	MONTREAL RD @ CARSON'S RD/CODD'S RD	01 - Clear	01 - Daylight	01 - Traffic signal	03 - P.D. only	03 - Rear end	01 - Dry

LOCATION & GEOID	TOTAL_COLLISIONS	TOTAL_CYCLIST _COLLISIONS	TOTAL_PEDESTRIAN _COLLISIONS
MONTREAL RD @ CARSON'S RD/CODD'S RD	21	0	1