REPORT NO. 17M-02201-00

## **Transportation Impact Assessment**

Phoenix Homes Subdivision Old Montreal Road

March 2018

CONFIDENTIAL





### **ABOUT US**

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WSP CANADA GROUP LTD. 1145 HUNT CLUB ROAD, SUITE 200 OTTAWA, ONTARIO K1V 0Y3

T +1 613-736-7200 F +1 613-836-8710 **WSP.COM** 

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## **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
- I am either a licensed<sup>1</sup> or registered<sup>2</sup> professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ⊠ or transportation planning □.

<sup>1,2</sup> 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



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Dated at <u>O</u> -	Hawa_ (City)	$ON$ this $39$ day of $M_{asc}$ , 20.18.	
	(City)		
Name:		Sarah Mc Donald, P. Eng.	
		(Please Print)	
Professional	Title:	Project Manager, Transportation Planning	í.
-		SR Mipu	
	Signatur	e of Individual certifier that s/he meets the above four criteria	

Office Contact Information (Please Print)			
Address: 1145 Hunt Club Road, Suite 200			
City/Postal Code: Ottawa_ON KIV OY3			
Telephone / Extension: 613 - 690 - 1178			
E-Mail Address: Sarah.j. mcdonald @ wsp. com			

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### City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development			
Municipal Address	1154, 1172, 1180, and 1208 Old Montreal Road		
Description of Location	South side of Old Montreal Road, 800m east of Trim Road		
Land Use Classification			
Development Size (units)	16 semi-detached, 467 town/terrace		
Development Size (m <sup>2</sup> )			
Number of Accesses and Locations	2 x full movement (800m + 1000m east of Trim), 2 x RIRO (880m + 9	940m e of Ti	
Phase of Development			
Buildout Year			

If available, please attach a sketch of the development or site plan to this form.

### 2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type	Minimum Development Size
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m <sup>2</sup>
Industrial	5,000 m <sup>2</sup>
Fast-food restaurant or coffee shop	100 m <sup>2</sup>
Destination retail	1,000 m <sup>2</sup>
Gas station or convenience market	75 m <sup>2</sup>

\* If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

### If the proposed development size is greater than the sizes identified above, <u>the Trip Generation</u> <u>Trigger is satisfied.</u>



### **3.** Location Triggers

S. Location mggers		
	Yes	No
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 Bicycle Networks?	Spine	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*	DPA, Arterial Mainstreet	

\*DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).

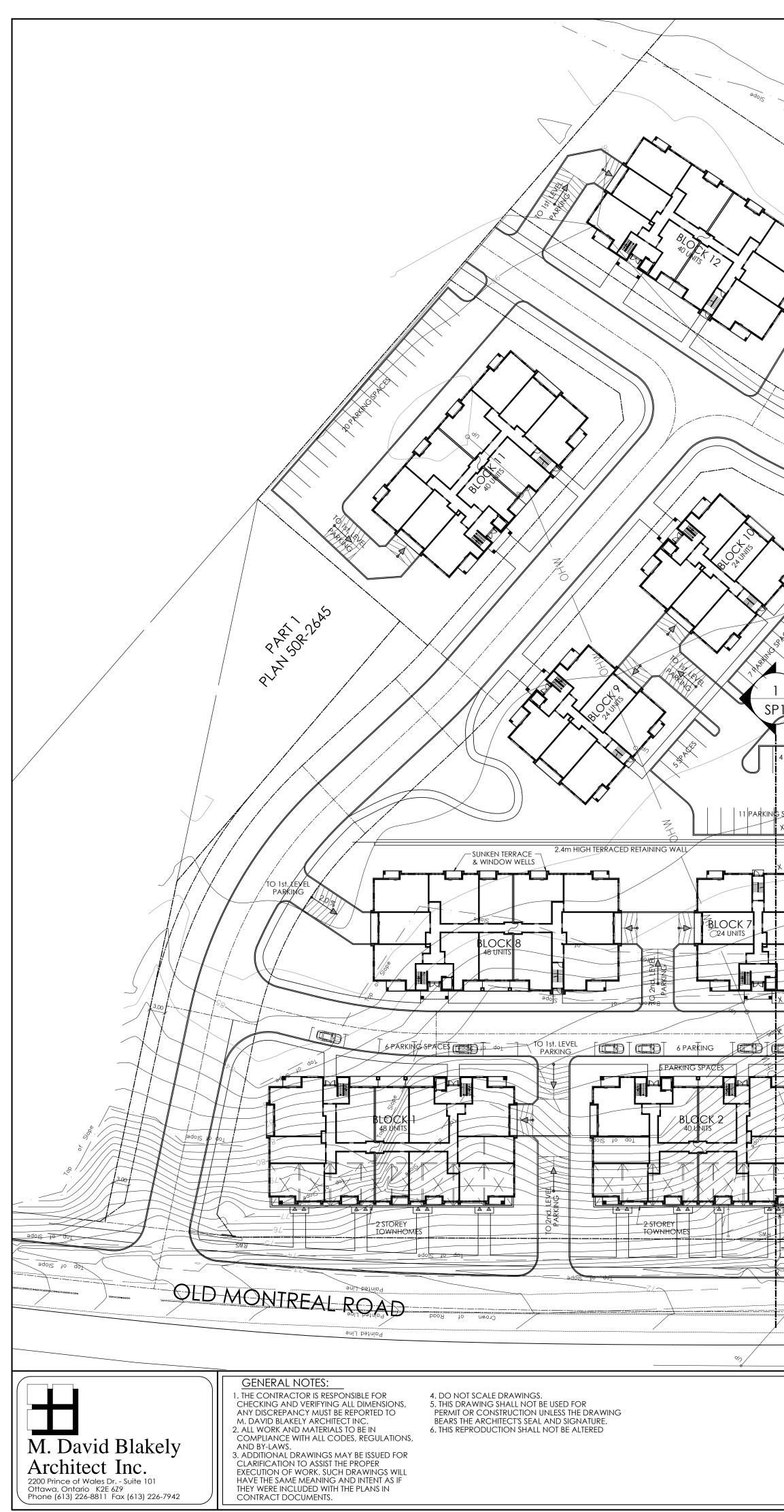
### If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers		
	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		X
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	х	
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)?		x
Is the proposed driveway within auxiliary lanes of an intersection?		Х
Does the proposed driveway make use of an existing median break that serves an existing site?		x
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		х
Does the development include a drive-thru facility?		х

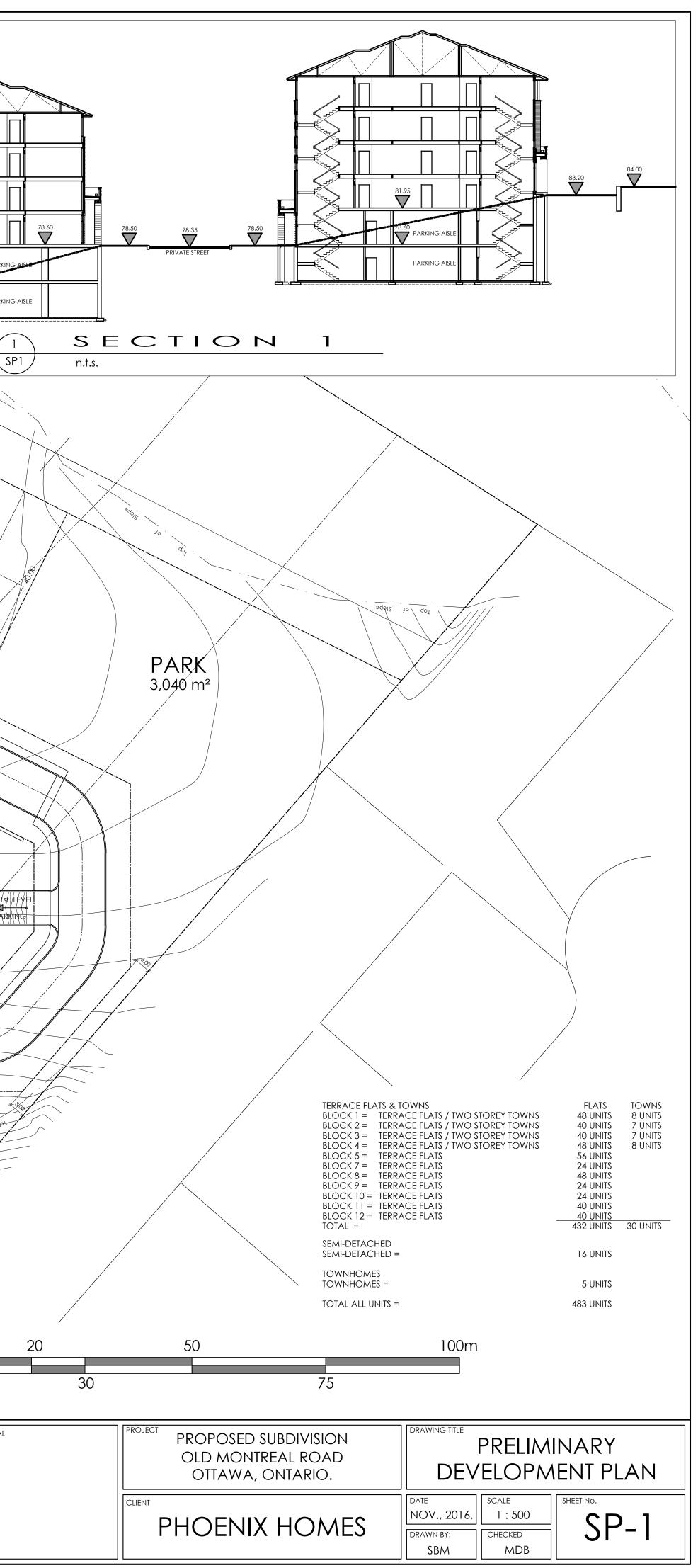
If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary		
	Yes	No
Does the development satisfy the Trip Generation Trigger?	Х	
Does the development satisfy the Location Trigger?	Х	
Does the development satisfy the Safety Trigger?		Х

If none of the triggers are satisfied, <u>the TIA Study is complete</u>. If one or more of the triggers is satisfied, <u>the TIA Study must continue into the next stage</u> (Screening and Scoping).



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REVISIONS	REVISIONS (DETAIL LOCATION	1)



## TRANSPORTATION IMPACT ASSESSMENT SCOPING REPORT

DATE:	November 2017
SUBJECT:	Phoenix Homes, Proposed Subdivision Old Montreal Road, Ottawa, ON
FROM:	Sarah McDonald, P. Eng. Project Manager, Transportation Planning, WSP
TO:	Asad Yousfani, Project Manager, Infrastructure Approvals, City of Ottawa

## SCREENING FORM

This Transportation Impact Assessment (TIA) is being prepared in support of a Plan of Subdivision and Zoning By-Law Amendment Application. The screening form and preliminary site plan are attached.

### DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed development is located at 1154, 1172, 1180, and 1208 Old Montreal Road. It is approximately 800m east of Trim Road and within the general urban area defined by the City of Ottawa's Official Plan. The existing zoning on the properties is:

- Rural Residential (RR7), 1154 and 1180 Old Montreal Road
- RR7(19r), 1172 Old Montreal Road
- Rural Countryside (RU), 1208 Old Montreal Road

The rural exception on 1172 Old Montreal Road notes that the property is developable despite the lack of frontage onto a public street (Zoning By-Law 2008-250 Consolidation, Section.59).

The proposed development by Phoenix Homes includes 432 terrace flats, 35 townhomes, and 16 semi-detached homes. It includes the construction of one new public road and one private street as shown in the attached preliminary development plan (SP-1).

The timeline for the development has not been determined. For the purpose of this TIA it is assumed that the development will be fully occupied in December 2022, five years from now.

The exact number of parking spaces provided has not been determined at the time of this report. However, each of the 12 blocks with terrace flats will have two levels of indoor parking. Additionally, the following surface parking facilities are proposed:

- 25 street parking spaces on the south side of Private Street One
- 16 parking stalls on the north side of Private Street One
- 36 parking stalls for Blocks 9 & 10; 20 parking stalls adjacent to Block 11
- 12 parking stalls adjacent to Block 12
- 7 parking stalls behind the 5 townhomes that front onto the new public road
- Private driveways at each of the 16 semi-detached homes

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There are four proposed accesses to this development from Old Montreal Road as described in Table 1.

#### Table 1. Development Accesses onto Old Montreal Road

IDENTIFIER	LOCATION	RESTRICTIONS	PROVIDES ACCESS TO
West Access	Opposite Famille- Laporte Avenue (800m east of Trim)	Full movement	New public road
Block 2/3 Parking	880m east of Trim	Right-In / Right-Out (RIRO)	Second level parking for Block 2 and Block 3
Block 1 Parking	940m east of Trim	RIRO	Second level parking for Block 1
East Access	1000m east of Trim	Full movement	New public road

## **EXISTING CONDITIONS**

### **ROAD NETWORK**

All roads in the study area are under the jurisdiction of the City of Ottawa.

**Old Montreal Road** is a two-lane arterial road that runs in an east-west direction between Trim Road and Ottawa Road 174 near the eastern edge of the City. The posted speed limit adjacent to the development property is 60 km/h.

**Trim Road** is a four-lane divided arterial road that runs in a north-south direction south from Ottawa Road 174. The posted speed limit is 70 km/h.

**Dairy Drive** is a two-lane local road that connects to Trim Road at a two-lane roundabout and to Old Montreal Road at stop control. It provides access to business and industry.

**Famille-Laporte Avenue** is a two-lane collector road that is part of the new Cardinal Creek subdivision. It is directly opposite the development property on Old Montreal Road.

### INTERSECTIONS AND DRIVEWAYS

There are three intersections in the study area:

- Old Montreal Road and Trim Road (two lane roundabout, new summer 2015)
- Old Montreal Road and Dairy Drive (two-way stop control)
- Old Montreal and Famille-Laporte Avenue (one-way stop control, new 2014/2015)

There are a number of private residential driveways along Old Montreal Road in the study area. However, there are no existing commercial accesses.

### **CYCLE AND TRANSIT FACILITIES**

There are eastbound and westbound cycling lanes on Old Montreal Road from Trim Road to Dairy Drive. There is a paved shoulder that could be used by cyclists from Dairy Drive eastward.

There is a separated sidewalk on the north side of Old Montreal Road between Trim Road and Dairy Drive that can be used by pedestrians.

OC Transpo bus route #221 travels along Old Montreal Road east of Trim Road, providing a connection between Cumberland and Downtown Ottawa. Bus service on this route includes two westbound trips in the morning and two eastbound trips in the evening.

The Trim Transit Station / Trim Park & Ride is located at Trim Road and Ottawa Road 174 and is accessible from Dairy Drive. It is served by rapid transit route 95, route 22, connection route 221, and local route 122. This Park & Ride can currently accommodate 1,089 vehicles.

### AREA TRAFFIC MANAGEMENT MEASURES

There does not appear to be existing Area Traffic Management (ATM) measures along this section of Old Montreal Road.

### PEAK HOUR TRAVEL DEMAND BY MODE

The results from the 2011 Origin-Destination (O-D) survey were reviewed to identify the existing peak hour travel demands by mode. Given the proximity of the development near the eastern boundary of the Orléans district, it was assumed that any trip without an O-D of the Rural East district would be to/from the Old Montreal Road / Trim Road intersection. According to the O-D survey, in the AM peak 2% of all Orléans trips go to Rural East and 5% originate from Rural East.

Based on the O-D survey, the peak hour travel demands by mode are:

### Table 2. Peak Hour Travel Demands

MODE	AM PEAK (TO/FROM)	PM PEAK (TO/FROM)
Auto Driver	55% / 61%	64% / 56%
Auto Passenger	8% / 13%	21% / 11%
Transit	35% / 10%	12% / 32%
Bicycle	1% / 0%	0% / 1%
Walk	0% / 0%	0% / 0%
Other (primarily school bus)	2% / 16%	3% / 1%

### **CRASH HISTORY**

The past 5-years of crash data (January 2012 – January 2017) for the three intersections in our study area and the section of Old Montreal Road adjacent to the development were obtained from the City of Ottawa and reviewed to determine any trends in collision history. The data available along Old Montreal Road is for the 1500m section between Grand Chene Cour Du Court and Ted Kelly Lane making it difficult to identify crash trends in the vicinity of the proposed development.

The intersection of Old Montreal Road and Trim Road was reconstructed from a signalized intersection to a two-lane roundabout in the summer of 2015. The crash history of the previous configuration has not been reviewed.

LOCATION	TOTAL CRASHES	PROPERY DAMANGE ONLY	NON-FATAL
Old Montreal / Trim*	35	32	3
Old Montreal / Dairy	1	0	1
Old Montreal / Famille-Laporte	0	0	0
Old Montreal Segment (Frank Kenny Road to Grand- Chene Cour du Court)	16	12	4

### Table 3. Five-Year Review of Crash History (January 2012-January 2017)

\* reviewed with roundabout configuration only (September 2015 – January 2017)

Some of the crash trends identified from the crash reports include:

### Old Montreal Road / Trim Road

- Majority of crashes occur between 12:00pm and 4:00pm
- 86% of all crashes occurred during clear weather with dry roads
- 17 angle and 12 sideswipe crashes indicate that drivers are adjusting to entering and manoeuvring through the roundabout
- The average crash rate doubled with the introduction of the roundabout (signalized 1.1 crashes per month, roundabout 2.2 crashes per month)

### **Old Montreal Road Segment**

- 40% of crashes occur between 6:00pm and 11:00pm
- More than half the crashes occurred on adverse surface conditions (snow, ice, wet)
- 13 of 16 crashes involved a single motor vehicle
- There were no crashes reported between September 2015 and January 2017

## PLANNED CONDITIONS

In the City of Ottawa's 2013 Transportation Master Plan (TMP), the section of Old Montreal Road between Trim Road and the edge of the urban boundary is planned to be widened from two to four lanes by 2031. The widening is proposed to provide capacity for development areas east of Trim Road. To be conservative, this widening will not be included in the traffic impact assessment for this development. This section of Old Montreal Road is designated as part of the cycling Spine Route and as a conceptual future transit corridor in the TMP.

Cardinal Creek Village is a large subdivision being developed opposite our proposed development on the north side of Old Montreal Road. The subdivision will ultimately accommodate 569 single/semi-detached dwellings and 681 attached dwellings, and several large blocks for mixeduse/commercial, school, and parkland purposes. We can use the Transportation Impact Study (October 2013) completed for the development to estimate vehicle trips generated by Cardinal Creek Village.

There is a proposed commercial development at 1015 Dairy Drive to relocate the corporate headquarters of Drytech International (disaster restoration equipment and services). The Transportation Brief (December 2013) for this development can be used to estimate vehicle trips generated by this development. The application file has been pending since February 2014.

There is a proposed commercial development at 1375 Trim Road, in the north-east corner of the Old Montreal Road / Trim Road intersection. The development includes a high-end coffee shop, a restaurant with a drive-thru, a sit-down restaurant, a retail building, and a medical building. One of the proposed accesses is directly onto Old Montreal Road. The Transportation Impact Study (July 2016) can be used to estimate vehicle trips generated by this development. The agreement was registered and final legal clearance given in July 2017.

## STUDY AREA

Our proposed study area includes:

- Old Montreal Road between Trim Road and 200m east of the proposed development
  - Three intersections along Old Montreal Road at:
  - Trim Road
    - Dairy Drive
  - Famille-Laporte Avenue

### TIME PERIODS

Our proposed analysis periods for this traffic impact assessment are based on the 2017 turning movement counts at Old Montreal Road and Trim Road. We have selected the AM and PM peak hours: 7:15am – 8:15am and 4:30pm – 5:30pm.

## HORIZON YEARS

Our assumed horizon years for the traffic analysis are:

- Full occupancy: 2022
- Occupancy plus five years: 2027

## **EXEMPTIONS REVIEW**

The following table identifies the exemptions to the fourth step (Analysis) of the TIA process.

Table 4. Traffic Impact Module Exemptions

MODULE	ELEMENT	REQUIRED
4.1 Development Design	4.1.2 Circulation and Access	NO, only required for site plans
	4.1.3 New Street Networks	YES, plan of subdivision
4.2 Parking	4.2.1 Parking Supply	NO, only required for site plans
	4.2.2 Spillover Parking	NO, only required for site plans
4.5 Transportation Demand Management	All elements	NO, no employees or students
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	NO, does not rely on local or collector streets
4.8 Network Concept	-	NO, will not generate more than 200 person-trips in excess of the established zoning permissions

## TRAFFIC IMPACT ASSESSMENT FORECASTING REPORT

DATE:	Revised March 9, 2018
SUBJECT:	Phoenix Homes, Proposed Subdivision Old Montreal Road, Ottawa, ON
CC:	Paul Black, FOTENN
FROM:	Sarah McDonald, P. Eng. Project Manager, Transportation Planning, WSP
TO:	Asad Yousfani, Project Manager, Infrastructure Approvals, City of Ottawa

## DEVELOPMENT GENERATED TRAFFIC

### **TRIP GENERATION**

### TRIP GENERATION RATES

Residential trip generation rates were selected from the 2009 TRANS Trip Generation Study. The semi-detached dwellings, townhouses, rowhouses land use from the TRANS Trip Generation Study was used to identify trip generation rates for the proposed development (Table 1).

Table 1. Trip Generation Rates, Semi-Detached, Townhouses, Rowhouses (Land Use 224)

PEAK PERIOD	TRANS RATE	INBOUND	OUTBOUND
AM	0.52	37%	64%
РМ	0.61	53%	47%

The 2009 TRANS study provides residential mode shares by dwelling type for urban and suburban areas. The travel mode share for suburban areas is shown in Table 2.

Table 2. TRANS Trip Generation Study Suburban Mode Shares for Townhouses

TRAVEL MODE	AM	PM
Vehicle	55%	61%
Transit	27%	22%
Non-Motorised	8%	6%

Suite 200 1145 Hunt Club Road Ottawa, ON, Canada K1V 0Y3

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The development has 538 units whose vehicle trips were estimated using the TRANS trip generation rates (Table 1). To forecast the person trips, the total calculated vehicle trips were

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divided by the vehicle percentage (Table 2). The resulting trips generated by this development are shown in the following table.

	AM		РМ			
Trips	Total	Enter	Exit	Total	Enter	Exit
Vehicle	251	93	161	295	156	138
Person	457	169	292	483	256	227

Table 3. Development Generated Vehicle and Person Trips

There are no existing trips to deduct since this is a new development and not a redevelopment.

Since this is a residential development, it is not expected to attract any trips from the adjacent roadway (pass-by trips). Furthermore, there will be no synergy (internal capture) since this is a single use development.

### MODE SHARES

The study mode shares were estimated by averaging the peak hour travel demands from the 2011 O-D survey data provided in the TIA Scoping Report. Mode share targets were applied to the person trips calculated in Table 3 to determine the number of peak period trips for each mode.

The following table summarizes the mode share targets and person trips generated by the proposed development.

Table 4. Future Mode Share Targets for the Development (TIA Guidelines Table 5)

TRAVEL MODE	MODE SHARE TARGET	AM PERSON TRIPS	PM PERSON TRIPS	TARGET RATIONALE
Transit	20%	102	108	Limited transit service along corridor, but close to Trim Transit Station. Old Montreal Road is part of a conceptual future transit corridor which will likely not be implemented during our study timeframe.
Walk	0%	0	0	Rural cross section with few amenities within walking distance.
Bicycle	5%	25	27	Rural cross section with few amenities within cycling distance.

Auto Passenger	15%	76	81	Vehicle occupancy unlikely to deviate significantly from existing O-D tendencies.
Auto Driver	60%	305	323	Rural cross section with no significant transit or pedestrian improvements in our study timeframe.

### TRIP DISTRIBUTION

According to the O-D survey, in the AM peak 2% of all Orléans trips go to Rural East and 5% originate from Rural East. Therefore, to be conservative the assumption was made that 5% of all trips in both peak periods are to/from the east and the remaining 95% are to/from the west.

### TRIP ASSIGNMENT

Vehicle trips were assigned to development accesses based on the proximity of dwellings to the two full access entrances and the right-in / right-out parking structure entrances. Intersections turning movements were assigned based on existing traffic patterns. The assignment is shown in the following figure.

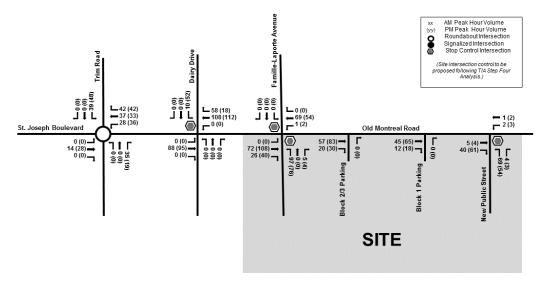


Figure 1. Development Trip Assignment

## BACKGROUND NETWORK TRAFFIC

### CHANGES TO THE BACKGROUND TRANSPORTATION NETWORK

The 2016 Ottawa Road 174-Prescott-Russel County Road Study 17 Environmental Assessment proposed widening of OR174 and CR17 to provide an additional arterial lane to address capacity deficiencies across the Frank Kenny screenline. The proposed widening includes:

Widening OR 174 to 3 lanes in each direction between Highway 417 and Trim Road

- Widening OR 174 to 2 lanes in each direction between Trim Road and Canaan Road
- Widening CR 17 to 2 lanes in each direction between Canaan Road and Landry Road

These measures could reduce volumes on Old Montreal Road by attracting a higher percentage of trips from the City of Clarence Rockland to the OR174 / CR17 corridor.

Alternatively, the widening of Old Montreal Road from two lanes to four lanes east of Trim Road is part of the Network Concept in the City of Ottawa's 2013 Transportation Master Plan. The rationale of this widening is to provide capacity for the development areas east of Trim Road.

To be conservative, neither of these potential changes are considered in the analysis since their timeframes are unknown.

### **GENERAL BACKGROUND GROWTH RATES**

The background growth rate along Old Montreal Road east of Trim Road is 1.8%. This is based on an analysis of historical traffic growth.

The 8-hour counts at Old Montreal Road / Trim Road were used to determine the 8-hour traffic volume east of the intersection in 2006, 2010, and 2011. The volumes were then plotted on an x-y scatter chart which identified 1.8% as the growth rate. Traffic counts from 2017 were available, but included the recent development growth from Cardinal Creek Village which is not representative of sustainable background growth. Future growth from Cardinal Creek Village will be considered as part of the other area development.

### OTHER AREA DEVELOPMENT

We identified three developments in our Scoping Report that could impact our study area:

- Cardinal Creek Village
- 1015 Dairy Drive (Drytech International Headquarters)
- 1375 Trim Road (multi-use commercial development)

Estimated trips for these developments were taken from their TIAs at the appropriate time horizon.

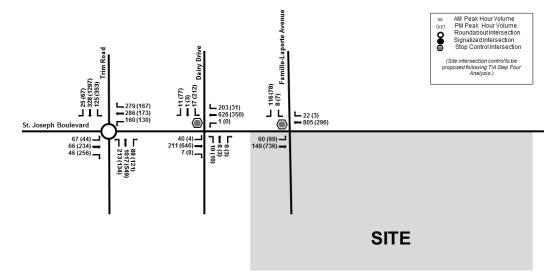


Figure 2. 2022 Background Traffic

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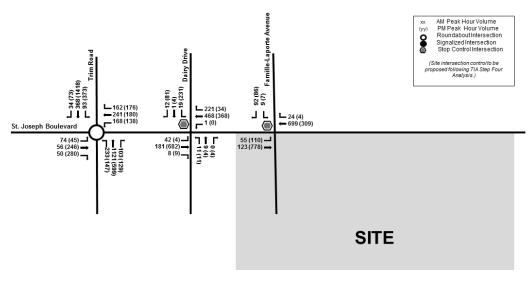


Figure 3. 2027 Background Traffic

## DEMAND RATIONALIZATION

### **DESCRIPTION OF CAPACITY ISSUE(S)**

Total traffic volumes for the 2022 and 2027 time horizons were estimated by:

- Applying a 1.8% annual growth rate to the 2017 traffic volumes
- Adding trips generated by other area development
- Adding trips generated by the Phoenix development (Figure 1)

The estimated total traffic volumes are shown in the following two figures.

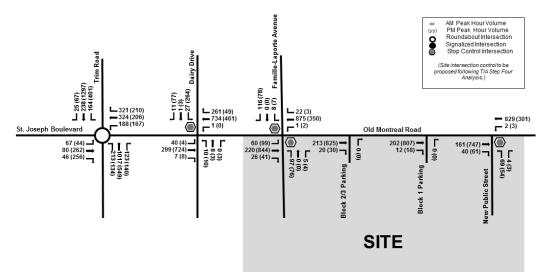


Figure 4. 2022 Total Traffic (Background + Other Development + Development)

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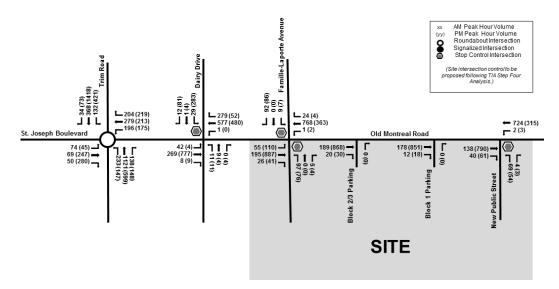


Figure 5. 2027 Total Traffic (Background + Other Development + Development)

The directional capacity of Old Montreal Road across the Frank Kenny screenline is 1050vph (2008 City of Ottawa Road Needs Study). The capacity at the proposed development should also be 1050vph since the same cross section (single lane in each direction) exists at the screenline and through our study area. The directional capacity of Old Montreal Road west of Famille-Laporte will be exceeded in the 2022 total traffic scenario with 1087 AM westbound trips (**Figure 4**). When considering the 2027 total traffic scenario, the AM westbound trips are expected to decrease to 957 vehicles as a result of the proposed Ottawa Road 174 connection in Cardinal Creek Village. The phasing of Cardinal Creek Village and timing of the proposed OR174 connection introduces uncertainty into the trip forecasting of the 2027 time horizon (background and total traffic). Any deviation from the assumptions of the Cardinal Creek Village site generated traffic volumes as shown in the Cardinal Creek Village Phases 1-7 TIA (October 2013) Exhibits 10, 11, and 12.

The intersection of Old Montreal Road and Trim Road is a two-lane roundabout and capacity issues are not anticipated (to be confirmed in Step 4 Analysis).

### ADJUSTMENT TO DEVELOPMENT GENERATED DEMANDS

Adjustment to the development generated demands will not reduce peak direction traffic volumes along Old Montreal Road enough to mitigate the long term capacity concerns. It is noted that as the area becomes more urbanised, increases in the active modes of transportation can be expected as well as used to access the future LRT station located to the north of this site. In general, the proposed development will generate approximately 165 and 150 peak direction vehicle trips during the AM and PM hour when the 2027 total traffic volumes along Old Montreal Rd, west of Famille-Laporte are 957vph and 1,064vph, respectively. Both the current TMP and the OR174/CR17 EA provide support for additional screenline capacity and would provide relief for the potential capacity deficiencies resulting from the Cardinal Creek Village and the planned office commercial development proposed within the broader area.

### ADJUSTMENT TO BACKGROUND NETWORK DEMANDS

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Adjustments to the background network demand might be able to reduce capacity issues along Old Montreal Road. However, mitigating network capacity concerns such as proposed in the City's TMP and OR174/CR17 EA are considered beyond the scope of this TIA. As indicated previously, these potential capacity issues within the broader study area are discussed and assessed in the OR174/CR17 EA and considered as part of the City's TMP Network Concept.

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## TRAFFIC IMPACT ASSESSMENT STRATEGY REPORT

DATE:	March 12, 2018
SUBJECT:	Proposed Subdivision Old Montreal Road, Ottawa, ON; Phoenix Homes
	Don Stephens, P. Eng, Director, Transportation Planning, WSP
	Michael Boucher, Manager of Planning, Phoenix Homes
CC:	Paul Black, Senior Planner, FOTENN
FROM:	Sarah McDonald, P. Eng. Project Manager, Transportation Planning, WSP
TO:	Asad Yousfani, Project Manager, Infrastructure Approvals, City of Ottawa

## 1. INTRODUCTION

This Strategy Report was prepared on behalf of Phoenix Homes in support of a Plan of Subdivision and Zoning By-Law Amendment Application. The format and outline of the Strategy Report is based on the City of Ottawa's Transportation Impact Assessment (TIA) Guidelines (2017). The purpose of the Strategy Report is to confirm the transportation elements of the development align with the City of Ottawa's broader city-building objectives.

## 2. DEVELOPMENT DESIGN

The proposed development by Phoenix Homes is located at 1154, 1172, 1180, and 1208 Old Montreal Road. It is approximately 800m east of Trim Road and within the general urban area defined by the City of Ottawa's Official Plan. The development includes 432 terrace flats, 35 townhomes, and 16 semi-detached homes. It includes the construction of one new public road and one private street as shown in the attached preliminary development plan (SP-1).

### 2.1. DESIGN FOR SUSTAINABLE MODES

As required by the TIA Guidelines, the TDM-supportive Development Design and Infrastructure Checklist was completed to assess the opportunity to implement facilities that are supportive of sustainable modes. The checklist should be reassessed as part of the site plan submission when more detailed information is available related to both vehicle and bicycle parking supply and layout. The completed checklist is attached to this report as **Appendix A**.

Sustainable modes include cycling, walking, and transit. The proposed site accommodates these modes in the following ways:

- Provision for pedestrian sidewalks along the new public road and new private road
- The existing transit stops (two) located on Old Montreal Road adjacent to the proposed development.



A westbound transit stop is located at the northwest corner of the Famille-Laporte Avenue intersection. An eastbound transit stop is located at the northeast corner of the Grand Chène Court intersection that is located approximately 70m west of the site.

Approximately 87% and 71% of the proposed units are within a five minute walk (400m) of the westbound bus stop and eastbound bus stop, respectively. The following measures could be implemented to improve the percentage of units within walking distance to transit:

- Remove the deviation in the proposed sidewalk north of Block 9, if not otherwise required to comply with 5% maximum running slope per the Ottawa Accessibility Design Standards (2014)
- The City consider moving the nearby eastbound bus stop from Grand Chène Crescent to the northeast (far-side) corner of the intersection of Old Montreal Road with Famille-Laporte Avenue to reduce the walking distance from both Cardinal Creek Village and the proposed Phoenix development

### 2.2. CIRCULATION AND ACCESS

These design elements are not required for applications involving plans of subdivisions.

### 2.3. NEW STREET NETWORKS

The City of Ottawa's Urban Design Guides for Greenfield Neighbourhoods (2007) provide guidance for neighbourhood design during the subdivision review and zoning process. The TIA Guidelines suggest assessing the planned street network using the methods described in the Urban Design Guide. Guidelines relevant to the TIA process and notes on the planned development are shown in **Table 1**. Generally, the network design is consistent with a local road designed to distribute traffic from arterial and collector streets to individual properties. The design encourages travel by sustainable modes by providing side walks and connectivity to existing bus stops and paved shoulders for cycling on Old Montreal Road.

NO.	<b>GUIDELINE DESCRIPTION</b>	PLANNED STREET NETWORK
10	Create a walkable neighbourhood with pathways, trails and sidewalks that are accessible year-round and that connect destinations such as transit stops, commercial areas, schools, community facilities and parks.	The internal street network provides sidewalks that connect to Old Montreal Road. The intersection of Famille Laporte provides access to amenities located within the Cardinal Creek development to the north.
11	Connect new streets to existing streets in adjacent developments and plan for future connections to land that has yet to be developed.	One of the two proposed full-access movements onto Old Montreal Road is opposite the existing access to Cardinal Creek (Famille-Laporte). There is a proposed connection at the south-east corner of the property to a future development at 1296 Old Montreal Road.

### Table 1. Urban Design Guidelines Review



NO.	GUIDELINE DESCRIPTION	PLANNED STREET NETWORK
12	Layer collector streets to be direct and continuous through the neighbourhood so homes are within 400m of transit and other destinations along them.	<ul><li>87% of the proposed units are within 400m of the westbound bus stop at Famille Laporte.</li><li>71% of the proposed units are within 400m from the eastbound bus stop at Grand Chène Crescent.</li></ul>
13	Layout local street patterns so that development blocks are easily walkable – between 150 and 250 m in length	The local street patterns are easily walkable with north-south connections to Old Montreal Road at each end of the development.
21	Select the most suitable zoning setback and road ROW width for the land use context and road function. Provide sufficient space for the various elements in the front yard, the boulevard, and the road including trees, sidewalks, utilities, cycling facilities, parking and travel lanes	Space for entrances, sidewalks, some on-street parking, and two drive lanes has been included in the proposed development plan.
25	Design roads at entrances to neighbourhoods to create a sense of arrival with such elements as enhanced landscape treatment in the boulevard and the median.	Inclusion of entrance features to be determined as part of the site planning.
26	Construct sidewalks on both sides of the street that serve key destinations, such as transit stops, greenspaces, or to community facilities like schools. Select the correct road ROW standard to allow sufficient space for sidewalks and all streetscape elements.	Sidewalks are proposed on at least one side of the street as per the site plan P1.
28	Design crosswalks in areas with higher pedestrian and vehicular volumes to be visually different form the street surface. Ensure they are universally accessible.	Inclusion of enhanced pedestrian crossing facilities to be determined as part of the site planning.
31	Create a cycling-supportive neighbourhood with bicycle routes that serve local destinations, and that are linked to the citywide network of bicycle routes. Routes include wide shared-use curb lanes, designated on-road bicycle lanes or multi-use pathways.	Internal road network links to Old Montreal Road that has paved shoulders that can be used by bicycles.
32	Design pathways, trails and walkways that are connected to the road right-of-way so that they link to a sidewalk and cross at an intersection.	Internal sidewalks all connect to Old Montreal Road at proposed intersections.

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N	). GUIDELINE DESCRIPTION	PLANNED STREET NETWORK
33	Construct streets, sidewalks, crosswalks and access to buildings that are universally accessible to a wide range of residents and abilities. Refer to accessibility standards such as the CSA (B651-04) "Accessible design for the built environment".	Accessibility features to be identified as part of the site planning.

## 3. PARKING

The Scoping Report submitted to the City of Ottawa on November 30, 2017 excluded scope associated with Parking.

## 4. BOUNDARY STREET DESIGN

Old Montreal Road is the only boundary street to the proposed development. The City of Ottawa has not prepared a Complete Street concept for this boundary street. As required by the TIA guidelines, we are providing a high level complete street concept for this boundary street considering mobility, road safety, and neighbourhood traffic management. This complete street concept could be considered as part of a larger study determining the feasibility of widening Old Montreal Road to provide additional arterial capacity in the rural east area of Ottawa.

### 4.1. MOBILITY

The City's Multi-Modal Level of Service (MMLOS) targets consider road classification, adjacent land-use designation, and special policy areas. The segment of Old Montreal Road adjacent to the development is an arterial road within the general urban area. It is not an arterial main street, within 600m of a rapid transit station, or within 300m of a school. The 2013 City of Ottawa Transportation Master Plan also designates this segment of Old Montreal Road as a Full Load Truck Route, a Cycling Spine Route, and a Conceptual Future Transit Corridor. Note that the 2015 MMLOS Guidelines do not specify a transit target for Conceptual Future Transit Corridor, and this study has instead used the target for Isolated Transit Priority Measures.

The resulting MMLOS targets range from 'C' for pedestrians and cycling to 'D' for transit and trucks, see **Table 2**.

	PLOS	BLOS	TLOS	TKLOS	VLOS
Target	С	С	D	D	VLOS Not
Status Quo	F	Е	D	С	Reported
Proposed Development	D	Е	D	С	for
Conceptual Complete Street	С	А	D	А	Segments

Table 2. Segment MMLOS for Old Montreal Road Adjacent to the Proposed Development (2027)

PLOS = Pedestrian Level of Service, BLOS = Bike Level of Service, TLOS = Transit Level of Service, TkLOS = Truck Level of Service, VLOS = Vehicle Level of Service



The **Status Quo** option assumes that infrastructure remains as is along Old Montreal Road. The MMLOS was assessed as:

- No sidewalk = PLOS 'F'
- Paved shoulder of 1.8m which is assessed as a bike lane without parking = BLOS 'E'
- Transit operating in mixed traffic with limited to no parking = TLOS 'D'
- Bi-directional traffic in two travel lanes of 3.5m = TkLOS 'C'

The **Development Buildout** option assumes that infrastructure is built as proposed by the current development plan. The MMLOS was assessed as:

- NEW 2.0m sidewalk along Old Montreal Road within the development = PLOS 'D'
- No changes to the cycling infrastructure = BLOS 'E'
- No changes to the existing lane geometry = TLOS 'D' and TkLOS 'C'

The **Conceptual Complete Street** concept considers the City's Official Plan (which protects Old Montreal Road between Trim Road and the East Urban Community limit for a 37.5m right-of-way) and City's Transportation Master Plan (which indicates that this section of Old Montreal Road is planned to be widened from two to four lanes by 2031). A conceptual complete street concept could be considered as part of a larger road widening project. Such a project might consider a road design similar to Cross-Section 2 proposed in the City of Ottawa's Arterial Road Cross-sections (**Figure 1**). This cross section was used to assess the Conceptual Complete Street MMLOS.

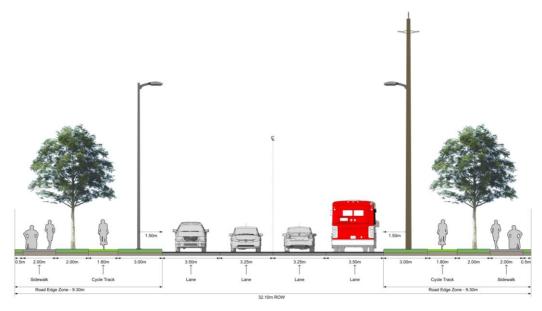


Figure 1. City of Ottawa Arterial Road Concept 2 - Separated Cycle Tracks / Sidewalks

### 4.2. ROAD SAFETY

Historical collision records for the study area were reviewed in the Collision Analysis section of the Scoping Report. The analysis reviewed the past 5-years of City of Ottawa crash data (January 2012 – January 2017) for roads and intersections within the study area. The data available along Old Montreal Road was for the 1500m section between Grand Chène Court and Ted Kelly Lane, which makes it difficult to identify specific crash trends in the more limited length of road that borders the proposed development. Following the TIA Guidelines we have identified patterns with six or more crashes in five years along this 1500m road segment; they include:



- Seven crashes occurred between 6:00pm and 11:00pm

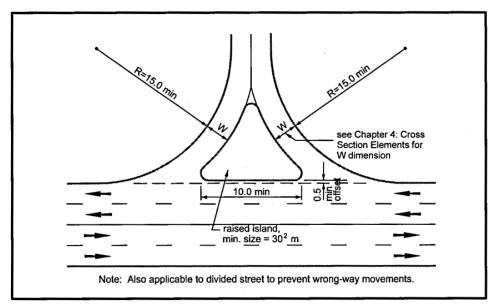
The area reviewed has a rural cross section and illumination is only provided in some sections which could have contributed to the time of day of the seven crashes. The City of Ottawa's Arterial Road Concept 2 (**Figure 1**) includes illumination on each side of the road.

## 5. ACCESS INTERSECTIONS

### **5.1. LOCATION AND DESIGN OF ACCESS**

There are four proposed access points for this development from Old Montreal Road. They are all located at a distance greater than 800m from the nearest major intersection, which is the existing roundabout located at Montreal and Trim Road.

The existing cross section of Old Montreal Road in this area does not include a median. Therefore access restriction, such as left turn restrictions could be implemented at the two proposed "right-in and right-out" (RIRO) accesses to the Block 1, 2, 3 parking structures include a channelized triangular island similar to the one shown in **Figure 2**.



Source: Figure 8.9.1 of Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads

Figure 2. Left-Turn Restrictions, Undivided Road



### **5.2. INTERSECTION CONTROL**

Traffic control signal warrants following Ontario Traffic Manual (OTM) Book 12 (2012) were completed for the four proposed accesses to the development under both scenarios (background and total) and future planning horizons (2022 and 2027).

Justification 7 (future volumes) was used to determine if a signal will be warranted. Justification 7 uses Average Hourly Volumes (AHV), which is defined as follows:

Average Hourly Volume (AHV) = (AM Peak Hour Volume + PM Peak Hour Volume) / 4

Based on future volumes, none of the accesses to the proposed development trigger a traffic signal warrant. The traffic signal warrant sheets are provided in **Appendix B**.

A capacity analysis was completed for both accesses and is provided in Section 9.2.2.

### **5.3. INTERSECTION DESIGN**

An auxiliary left-turn lane analysis for the new accesses was completed for the worst case (2027 future total) traffic conditions. The analysis followed the left-turn warrant in the MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, June 2017 – Appendix 9A.

In the peak hours, the forecasted number of vehicles making a left turn into one of the site accesses is 3 or less. The percent left-turn volume compared to advancing traffic volumes is 1%. The left-turn warrant charts in the MTO Design Supplement are provided for locations where the perfect left-turn volume compared to advancing traffic volumes is 5% or higher. Therefore, the implementation of a left-turn lane is not warranted for either of the development accesses. Transportation Demand Management

The Scoping Report submitted to the City of Ottawa on November 30, 2017 excluded scope associated with Transportation Demand Management.

## 6. NEIGHBOURHOOD TRAFFIC MANAGEMENT

The Scoping Report submitted to the City of Ottawa on November 30, 2017 excluded scope associated with Neighbourhood Traffic Management.

## 7. TRANSIT

### 7.1. ROUTE CAPACITY

OC Transpo bus route #221 travels along Old Montreal Road east of Trim Road, providing a connection between Cumberland and Downtown Ottawa. Bus service on this route includes two westbound trips in the morning and two eastbound trips in the evening.

The Trim Transit Station / Trim Park & Ride is located at Trim Road and Ottawa Road 174 and is accessible from Dairy Drive. It is served by rapid transit route 95, route 22, connection route 221, and local route 122. This Park & Ride can currently accommodate 1,089 vehicles.

The Forecasting Report submitted to the City of Ottawa on December 12, 2017 indicated that this development would generate 102 new transit trips in the AM peak hour and 108 new transit trips in the PM peak hour. Applying the inbound and outbound trip percentages from the Forecasting Report provides an estimate of transit trips generated by this development as presented in the following table.



PEAK HOUR	TOTALTRANSIT TRIPS	INBOUND %	INBOUND #	OUTBOUND %	OUTBOUND #
AM	102	37%	38	64%	65
РМ	108	53%	57	47%	51

Table 3. Estimated Transit Trips Generated by Development (AM and PM Peak Hours)

A measured and need based increase in transit service through the Old Montreal Road corridor should be provided. It is expected that the need for transit services will be driven by Cardinal Creek Village with a smaller ridership contribution from the proposed Phoenix development.

### 7.2. TRANSIT PRIORITY

This is a rural area transitioning into an urban area. It is not a candidate for transit priority measures.

## 8. REVIEW OF NETWORK CONCEPT

The Scoping Report submitted to the City of Ottawa on November 30, 2017 excluded scope associated with the Review of Network Concept.

### 9. INTERSECTION DESIGN

The study area includes three existing network intersections in the study area:

- Old Montreal Road and Trim Road (two lane roundabout)
- Old Montreal Road and Dairy Drive (two-way stop control)
- Old Montreal and Famille-Laporte Avenue (one-way stop control)

The development also proposes two new full-movement accesses:

 the West Access opposing the existing Famille-Laporte Avenue the East Access approximately 200m east of the West Access / Famille-Laporte Avenue intersection

The study area intersections were evaluated in the morning and afternoon (AM and PM) peak hour traffic conditions at the following planning horizons:

- Existing (2017)
- Future Background (2022 and 2027)
- Future Total (2022 and 2027)

### 9.1. INTERSECTION CONTROL

Traffic control signal warrants following Ontario Traffic Manual (OTM) Book 12 (2012) Justification 7 were completed the Dairy Drive intersection under both scenarios (background and total) and future planning horizons (2022 and 2027). Traffic signal warrants for the two full movement accesses were presented in **Section 5**. The warrant calculations are provided in **Appendix B**.

At the Old Montreal Road and Dairy Drive intersection a traffic signal is not warranted under either future background scenario. However, they are warranted under both future total scenarios. When considering the 2022 background scenario, the Average Hourly Volume (equation in **Section 0**) on Old Montreal is within



45 vehicles of triggering the traffic signal warrant. This indicates that any proposed development growth on Old Montreal Road that generates vehicular traffic would likely satisfy the warrant.

The following table provides the AM and PM peak hour traffic volumes on Old Montreal Road in the existing, 2022 total, and 2027 total traffic scenarios to compare the estimated traffic contribution from both Cardinal Creek Village and the proposed Phoenix Development. In 2022, Cardinal Creek contributes over 65% of the new development traffic growth along this corridor. The contribution of Cardinal Creek in 2027 is highly dependent on the availability of the proposed Ottawa Road 174 access; without this new access then the contribution of Cardinal Creek to traffic on Old Montreal Road will increase instead of decrease as presented in the Cardinal Creek TIA and shown below.

TRAFFIC	2018	2022	2027
Old Montreal Road at Dairy Drive (Total)	668 / (753)	1321 / (1519)	1155 / (1596)
Trips to/from Cardinal Creek Village	159 / (205)	478 / (618)	243 / (293)
Trips to/from Proposed Development	0 / (0)	264 / (277)	264 / (277)

### Table 4. AM and PM volumes on Old Montreal Road at Dairy Drive

Following the OTM Book 12 traffic signal warrants (Justification 7), the Dairy Drive / Old Montreal Road intersection warrants a traffic signal with known development traffic. An upgrade to the intersection should be considered by the City of Ottawa to provide more capacity through the maturing rural east sector

### 9.2. INTERSECTION DESIGN (OPERATIONS)

### 9.2.1. MMLOS ANALYSIS

Multi-Modal Level of Service (MMLOS) analysis methodology outlined in the City of Ottawa's MMLOS Guidelines (2015) states that intersection LOS measures are only to be evaluated at signalized intersections. Analysis of Vehicle Level of Service (VLOS) is detailed in **Section 9.2.2**.

Based on the traffic signal warrants (**Section 9.1**), Dairy Drive will warrant a traffic signal under 2022 and 2027 total traffic conditions. As discussed in **Section 9.1**, total traffic volumes are expected to be highest in 2022 at this intersection since the proposed OR 174 connection to Cardinal Creek will not have been constructed. Therefore, we have prepared an MMLOS analysis at this intersection for the 2022 total traffic scenario only since it will represent the worst case. Targets are taken from the General Urban Area Arterial Road Class.



#### Table 5. Intersection MMLOS for Old Montreal Road / Diary Drive under 2022 Total Traffic Conditions

	PLOS	BLOS	TLOS	TKLOS	VLOS
Target	С	С	D	D	Gention
Old Montreal Road / Dairy Drive Intersection	С	F	D	E	Section 9.2.2

PLOS = Pedestrian Level of Service, BLOS = Bike Level of Service, TLOS = Transit Level of Service, TkLOS = Truck Level of Service, VLOS = Vehicle Level of Service

### 9.2.2. VEHICLE CAPACITY ANALYSIS

### METHODOLOGY

The existing and future conditions were analyzed using the weekday peak hour traffic volumes presented during the previous Traffic Impact Assessment Forecasting Report.

All intersections in the study area are currently roundabouts or unsignalized (stop controlled) intersections. The Highway Capacity Manual (HCM) 2010, assigns the vehicle level of service (VLOS) based on ranges of movement delay, as indicated in **Table 6**. Delay is the increase in travel time due to an intersection control.

	UNSIGNALIED INTERSECTIONS	SIGNALIZED INTERSECTIONS
VLOS	DELAY (SECONDS)	DELAY (SECONDS)
А	0-10	0-10
В	>10-15	>10-20
С	>15-25	>20-35
D	>25-35	>35-55
Е	>35-50	>55-80
F	>50	>80

#### Table 6. Highway Capacity Manual 2010, LOS Criteria

The City's MMLOS Guidelines recommend a target VLOS of 'E' for the City's Central Area, for within 600m of a rapid transit station, or for within 300m of a school. The Guidelines recommend a target VLOS of 'D' for locations, such as the study area, that are not located in the aforementioned policy areas.

The following sections present the results of the intersection capacity analysis. Movement delay and VLOS are shown alongside volume, volume / capacity (v/c), and 95<sup>th</sup> percentile queue length. Unsignalized (stop-controlled) intersections were analyzed using Synchro 9, while the roundabout at Old Montreal Road and Trim Road was analyzed using SIDRA 7. **Appendix C** contains the detailed Synchro analysis sheets.

### **EXISTING CONDITIONS (2017)**

The existing (2017) intersection capacity analysis results are summarized in **Table 7**. Both AM peak hour and PM peak hour are shown within the table, with the PM peak results shown within brackets. All three intersections currently operate with an acceptable VLOS. The highest volume to capacity (v/c) ratios are the southbound movements in the PM peak hour at the Old Montreal Road / Trim Road roundabout. The v/c ratio is 0.77 which indicates there is available capacity for future volumes.

### Table 7. Intersection Capacity Summary – Existing (2017)

MOVEMENT	VOLUME (VPH)	DELAY (SEC)	VLOS	V/C	Q50th (m)	Q95th (m)		
Old Montreal Road and Trim Road (Roundabout)								
EBL	21 (17)	5.2 (16.7)	A (C)	0.03 (0.23)	-	0.9 (5.6)		
EBT	24 (116)	4.7 (15.3)	A (C)	0.03 (0.23)	-	0.9 (5.6)		
EBR	42 (234)	4.7 (24.4)	A (C)	0.05 (0.62)	-	1.4 (22.6)		
WBL	98 (77)	14.6 (5.8)	B (A)	0.30 (0.11)	-	8.1 (3.0)		
WBT	130 (70)	12.4 (6.4)	B (A)	0.30 (0.11)	-	8.2 (3.1)		
WBR	147 (89)	10.3 (5.3)	B (A)	0.29 (0.12	-	8.2 (3.2)		
NBL	195 (123)	9.3 (8.3)	A (A)	0.54 (0.40)	-	28.1 (14.7)		
NBT	910 (490)	9.1 (8.1)	A (A)	0.54 (0.40)	-	28.1 (14.7)		
NBR	61 (77)	9.2 (7.9)	A (A)	0.54 (0.40)	-	27.3 (14.7)		
SBL	68 (199)	7.2 (18.1)	A (C)	0.26 (0.77)	-	8.0 (67.6)		
SBT	300 (1186)	7.0 (17.6)	A (C)	0.26 (0.77)	-	8.0 (67.6)		
SBR	23 (61)	6.8 (17.2)	A (C)	0.26 (0.77)	-	7.9 (67.2)		
	Old	Montreal Ro		•				
		(Two-Way	Stop Contro	ol)				
EBL	14 (1)	8.6 (7.7)	A (A)	0.02 (0.00)	-	0.3 (0.0)		
EBTR	134 (354)	0.0 (0.0)	A (A)	0.09 (0.23)	-	0.0 (0.0)		
WBL	1 (0)	7.5 (0.0)	A (A)	0.00 (0.00)	-	0.0 (0.0)		
WBTR	522 (210)	0.0 (0.0)	A (A)	0.34 (0.14)	-	0.0 (0.0)		
NBTLR	16 (15)	15.9 (14.2)	C (B)	0.05 (0.04)	-	1.1 (0.9)		
SBL	14 (190)	15.3 (23.6)	C (C)	0.04 (0.52)	-	1.0 (20.6)		
SBTR	9 (48)	11.6 (10.0)	B (A)	0.02 (0.07)	-	0.4 (1.5)		
Old Montreal Road and Famille-Laporte Avenue (Two-Way Stop Control)								
EBL	57 (101)	8.8 (7.7)	A (A)	0.06 (0.08)	-	1.4 (1.8)		
EBTR	69 (418)	0.0 (0.0)	A (A)	0.05 (0.27)	-	0.0 (0.0)		
WBTLR	516 (132)	0.0 (0.0)	A (A)	0.34 (0.09)	-	0.0 (0.0)		
NBTLR	0 (0)	0.0 (0.0)	A (A)	0.00 (0.00)	-	0.0 (0.0)		
SBTLR	123 (84)	14.6 (10.2)	B (B)	0.27 (0.12)	-	7.7 (3.0)		

Movement Legend:

NB / SB / EB / WB – northbound, southbound, eastbound, westbound

L / T / R - left, through, right

Examples: WBL - westbound left-turn, SBTLR - shared southbound through / left-turn / right-turn lane.

### **FUTURE BACKGROUND CONDITIONS (2022)**

The 2022 background intersection capacity analysis results are summarized in **Table 8**. Both AM peak hour and PM peak hour are shown within the table, with the PM peak results shown within brackets. Results that do not meet the City's target VLOS of 'D' are highlighted in red. With the future background and other development traffic the southbound left turning movements at both Trim Road and Dairy Drive are expected to experience a poor LOS in the PM peak hour. Notably drivers making a SBL at Dairy Drive are expected to experience approximately 110s (just under 2 minutes) of delay with a stop control.

	VOLUME	DELAY	VLOS	V/C	Q50th	Q95th			
MOVEMENT	(VPH)	(SEC)			(m)	(m)			
	Old Montreal Road and Trim Road (Roundabout)								
EBL	67 (44)	5.4 (29.1)	A (D)	0.09 (0.49)	-	2.4 (14.1)			
EBT	66 (234)	5.9 (26.3)	A (D)	0.09 (0.49)	-	2.4 (14.4)			
EBR	46 (256)	4.8 (25.0)	A (C)	0.06 (0.62)	-	1.5 (22.6)			
WBL	160 (130)	21.7 (7.8)	C (A)	0.53 (0.21)	-	17.7 (6.1)			
WBT	286 (173)	19.2 (7.2)	C (A)	0.53 (0.21)	-	18.1 (6.1)			
WBR	279 (167)	15.4 (6.3)	C (A)	0.50 (0.20)	-	18.2 (5.8)			
NBL	213 (134)	11.7 (12.7)	B (B)	0.61 (0.52)	-	35.7 (22.5)			
NBT	1017 (549)	11.5 (12.2)	B (B)	0.61 (0.52)	-	35.7 (22.5)			
NBR	88 (121)	11.2 (11.8)	B (B)	0.61 (0.52)	-	34.6 (22.4)			
SBL	125 (353)	9.3 ( <b>35.8</b> )	A (E)	0.33 (0.92)	-	10.5 (129.2)			
SBT	328 (1297)	9.0 (34.6)	A (D)	0.33 (0.92)	-	10.5 (131.1)			
SBR	25 (67)	8.8 (34.0)	A (D)	0.33 (0.92)	-	10.3 (131.1)			
	Old	Montreal Ro	ad and Dair	y Drive		•			
		(Two-Way	Stop Contro	ol)					
EBL	40 (4)	9.7 (8.0)	A (A)	0.05 (0.00)	-	1.1 (0.1)			
EBTR	216 (654)	0.0 (0.0)	A (A)	0.13 (0.38)	-	0.0 (0.0)			
WBL	1 (0)	7.7 (0.0)	A (A)	0.00 (0.00)	-	0.0 (0.0)			
WBTR	827 (380)	0.0 (0.0)	A (A)	0.49 (0.22)	-	0.0 (0.0)			
NBTLR	18 (16)	25.1 (23.5)	C (C)	0.08 (0.08)	-	1.9 (1.8)			
SBL	17 (211)	24.7 <b>(111.3</b> )	C (F)	0.08 (1.00)	-	1.9 (62.5)			
SBTR	12 (79)	14.3 (11.5)	B (B)	0.03 (0.12)	-	0.7 (3.0)			
Old Montreal Road and Famille-Laporte Avenue (Two-Way Stop Control)									
EBL	60 (99)	9.8 (8.1)	A (A)	0.07 (0.08)	-	1.7 (1.8)			
EBTR	148 (736)	0.0 (0.0)	A (A)	0.09 (0.43)	-	0.0 (0.0)			
WBTLR	826 (298)	0.0 (0.0)	A (A)	0.49 (0.18)	-	0.0 (0.0)			
NBTLR	0 (0)	0.0 (0.0)	A (A)	0.00 (0.00)	-	0.0 (0.0)			
SBTLR	122 (84)	19.7 (11.9)	C (B)	0.34 (0.15)	-	10.3 (3.6)			

#### Table 8. Intersection Capacity Summary – Future Background (2022)

Movement Legend:

NB / SB / EB / WB – northbound, southbound, eastbound, westbound

L / T / R - left, through, right

Examples: WBL - westbound left-turn, SBTLR - shared southbound through / left-turn / right-turn lane.



### **FUTURE BACKGROUND CONDITIONS (2027)**

The 2027 background intersection capacity analysis results are summarized in **Table 9**. Both AM peak hour and PM peak hour are shown within the table, with the PM peak results shown within brackets. Results that do not meet the City's target VLOS of 'D' are highlighted in red. Under 2027 background traffic conditions, all the SB movements at the Trim Road roundabout are expected operate with a LOS 'F' in the PM peak hour. The EBL movement has a reduction in LOS to an 'E' as a result of high SB volumes. The SBL movement at Dairy Drive continues to operate with a LOS 'F' and high delays with a stop control.

MOVEMENT	VOLUME (VPH)	DELAY (SEC)	VLOS	V/C	Q50th (m)	Q95th (m)			
Old Montreal Road and Trim Road									
			ndabout)						
EBL	74 (45)	9.3 <b>(36.1</b> )	A (E)	0.09 (0.56)	-	2.6 (16.6)			
EBT	56 (246)	8.9 (32.6)	A (D)	0.08 (0.56)	-	2.2 (17.0)			
EBR	50 (280)	8.7 (34.9)	A (D)	0.06 (0.73)	-	1.6 (29.9)			
WBL	168 (138)	25.0 (8.5)	D (A)	0.54 (0.24)	-	17.8 (6.8)			
WBT	241 (180)	21.6 (7.8)	C (A)	0.54 (0.24)	-	18.2 (6.8)			
WBR	162 (176)	12.3 (6.8)	B (A)	0.32 (0.22)	-	9.4 (6.4)			
NBL	233 (147)	12.7 (14.5)	B (B)	0.66 (0.58)	-	42.9 (27.1)			
NBT	1121 (599)	12.4 (13.9)	B (B)	0.66 (0.58)	-	42.9 (27.1)			
NBR	103 (129)	12.2 (13.5)	B (B)	0.66 (0.58)	-	41.4 (27.0)			
SBL	93 (373)	9.3 <b>(59.4</b> )	A (F)	0.34 (1.03)	-	10.8 (243.8)			
SBT	368 (1418)	8.9 <b>(58.1</b> )	A (F)	0.34 (1.03)	-	10.8 (254.6)			
SBR	34 (73)	8.7 <b>(57.3</b> )	A (F)	0.34 (1.03)	-	10.6 (254.6)			
	Old	Montreal Ro	ad and Dair	y Drive					
		(Two-Way	Stop Contro	ol)					
EBL	41 (4)	9.1 (8.1)	A (A)	0.04 (0.00)	-	1.0 (0.1)			
EBTR	187 (689)	0.0 (0.0)	A (A)	0.11 (0.41)	-	0.0 (0.0)			
WBL	1 (0)	7.6 (0.0)	A (A)	0.00 (0.00)	-	0.0 (0.0)			
WBTR	689 (402)	0.0 (0.0)	A (A)	0.41 (0.24)	-	0.0 (0.0)			
NBTLR	19 (17)	20.3 (25.9)	C (D)	0.07 (0.09)	-	1.5 (2.1)			
SBL	18 (231)	19.6 <b>(177.5</b> )	C (F)	0.07 (1.20)	-	1.5 (84.0)			
SBTR	13 (84)	12.6 (11.7)	B (B)	0.03 (0.14)	-	0.6 (3.3)			
	Old Monta	real Road and	l Famille-La	aporte Avenue	<b>;</b>				
		(Two-Way	Stop Contro	ol)					
EBL	55 (109)	9.3 (8.1)	A (A)	0.06 (0.09)	-	1.4 (2.0)			
EBTR	123 (779)	0.0 (0.0)	A (A)	0.07 (0.46)	-	0.0 (0.0)			
WBTLR	722 (311)	0.0 (0.0)	A (A)	0.42 (0.18)	-	0.0 (0.0)			
NBTLR	0 (0)	0.0 (0.0)	A (A)	0.00 (0.00)	-	0.0 (0.0)			
SBTLR Movement Legend: NB / SE	100 (93)	16.3 (12.4)	C (B)	0.24 (0.17)	-	6.6 (4.3)			

#### Table 9. Intersection Capacity Summary – Future Background (2027)

Movement Legend: NB / SB / EB / WB – northbound, southbound, eastbound, westbound

L / T / R - left, through, right.



### **FUTURE TOTAL CONDITIONS (2022)**

The 2022 future total (future background plus additional site generated traffic) intersection capacity analysis results are summarized in **Table 10**. Both AM peak hour and PM peak hour are shown within the table, with the PM peak results shown within brackets. Results that do not meet the City's target VLOS of 'D' are highlighted in red.

With the addition of the development traffic, the SB movements at Trim Road experience a LOS 'F' in the 2022 planning horizon instead of the 2027 planning horizon that was anticipated as part of the background traffic analysis.

The delay experienced by vehicles making a SBL at Dairy Drive in the PM period increases from 110s to over 420s. This assumes that regular commuters do not adjust their route based on known conditions; it is unlikely that over 260 drivers will knowingly wait over 7 minutes at an intersection when there are other routes with less delay available.

Vehicles exiting the development at Famille-Laporte will experience high delay in the peak hours due to the existing high volumes along Old Montreal Road. It is likely that some residents will shift their exit point from the west access to the east access based on known traffic conditions. Anticipated delay is lower at the east access since there is not a north leg to the intersection, which results in fewer turning movements competing for the same gaps in traffic. Alternative future scenarios for Famille-Laporte, including traffic re-assignment and alternative intersection control, are presented in **Section 0**.

MOVEMENT	VOLUME (VPH)	DELAY (SEC)	VLOS	V/C	Q50th (m)	Q95th (m)		
Old Montreal Road and Trim Road (Roundabout)								
EBL	67 (44)	6.4 <b>(36.0</b> )	A (E)	0.10 (0.57)	-	2.8 (17.3)		
EBT	80 (262)	5.8 (32.6)	A (D)	0.10 (0.57)	-	2.8 (17.6)		
EBR	46 (256)	4.9 (26.2)	A (D)	0.06 (0.63)	-	1.5 (23.2)		
WBL	188 (167)	25.2 (8.5)	D (A)	0.60 (0.26)	-	21.9 (7.8)		
WBT	324 (206)	22.4 (7.8)	C (A)	0.60 (0.26)	-	22.5 (7.8)		
WBR	321 (210)	18.0 (6.9)	C (A)	0.58 (0.26)	-	22.9 (7.6)		
NBL	213 (134)	13.5 (14.7)	B (B)	0.66 (0.57)	-	42.7 (25.6)		
NBT	1017 (549)	13.2 (14.1)	B (B)	0.66 (0.57)	-	42.7 (25.6)		
NBR	123 (140)	12.9 (13.6)	B (B)	0.66 (0.57)	-	41.7 (25.6)		
SBL	164 (401)	10.6 <b>(55.6</b> )	В ( <b>F</b> )	0.38 (1.01)	-	12.8 (208.9)		
SBT	328 (1297)	10.2 <b>(54.2)</b>	B (F)	0.38 (1.01)	-	12.8 (217.5)		
SBR	25 (67)	10.0 (53.4)	A (F)	0.38 (1.01)	-	12.5 (217.5)		

### Table 10. Intersection Capacity Summary – Future Total (2022)



VOLUME	DELAY	VLOS	V/C	Q50th	Q95th		
(VPH)	(SEC)			(m)	(m)		
Old			y Drive				
	(Sigi	nalized)					
40 (4)	4.7 (6.6)	A (A)	0.22 (0.01)	1.3 (0.2)	4.7 (1.3)		
304 (741)	4.3 (18.0)	A (B)	0.25 (0.84)	10.1 (50.0)	17.1 (117.6)		
1 ()	3.5 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	0.3 (0.0)		
733 ()	13.7 (10.0)	B (A)	0.84 (0.57)	60.6 (27.2)	110.5 (54.9)		
18 ()	21.6 (12.5)	C (B)	0.07 (0.03)	1.7 (0.9)	6.7 (3.9)		
27 ()	21.9 (18.7)	C (B)	0.12 (0.64)	2.5 (21.4)	8.8 (41.1)		
12 ()	21.3 (12.6)	C (B)	0.01 (0.06)	0.1 (0.2)	4.0 (6.9)		
Old Montreal Road and Famille-Laporte Avenue / West Access							
	(Two-Way	Stop Contro	ol)				
60 (99)	10.1 (8.2)	B (A)	0.08 (0.08)	-	1.8 (1.9)		
245 (884)	0.0 (0.0)	A (A)	0.14 (0.52)	-	0.0 (0.0)		
1 (2)	7.7 (9.7)	A (A)	0.00 (0.00)	-	0.0 (0.1)		
895 (352)	0.0 (0.0)	A (A)	0.53 (0.21)	-	0.0 (0.0)		
103 (78)	210.4 (133.6)	<b>F</b> ( <b>F</b> )	1.19 (0.89)	-	51.0 (34.0)		
122 (84)	22.9 (13.7)	C (B)	0.38 (0.17)	-	12.0 (4.2)		
Old Montreal Road and East Access							
(Two-Way Stop Control)							
201 (806)	0.0 (0.0)	A (A)	0.12 (0.47)	-	0.0 (0.0		
2 (3)	7.6 (9.4)	A (A)	0.00 (0.00)	-	0.0 (0.1)		
828 (301)	0.0 (0.0)	A (A)	0.49 (0.18)	-	0.0 (0.0)		
72 (55)	22.8 (23.8)	C (C)	0.26 (0.22)	-	7.2 (5.9)		
	(VPH) Old 40 (4) 304 (741) 1 () 733 () 18 () 27 () 12 () Montreal Ros 60 (99) 245 (884) 1 (2) 895 (352) 103 (78) 122 (84) 122 (84) 0ld 201 (806) 2 (3) 828 (301)	(VPH)         (SEC)           Old Montreal Roy (Sign           40 (4)         4.7 (6.6)           304 (741)         4.3 (18.0)           1 ()         3.5 (0.0)           733 ()         13.7 (10.0)           18 ()         21.6 (12.5)           27 ()         21.9 (18.7)           12 ()         21.3 (12.6)           Montreal Roy         and Famili           (Two-Way)         60 (99)           60 (99)         10.1 (8.2)           245 (884)         0.0 (0.0)           1 (2)         7.7 (9.7)           895 (352)         0.0 (0.0)           103 (78)         21.4 (133.6)           122 (84)         22.9 (13.7)           Old Montreal Roy           CTwo-Way         201 (806)           201 (806)         0.0 (0.0)           2 (3)         7.6 (9.4)           828 (301)         0.0 (0.0)	(VPH)         (SEC)           Old Montreal Read and Dair (Signalized)           40 (4)         4.7 (6.6)         A (A)           304 (741)         4.3 (18.0)         A (B)           1 ()         3.5 (0.0)         A (A)           733 ()         13.7 (10.0)         B (A)           18 ()         21.6 (12.5)         C (B)           27 ()         21.9 (18.7)         C (B)           12 ()         21.3 (12.6)         C (B)           12 ()         21.3 (12.6)         C (B)           Montreal Roder and Family-Laporte A (Two-Way Stop Control           60 (99)         10.1 (8.2)         B (A)           245 (884)         0.0 (0.0)         A (A)           895 (352)         0.0 (0.0)         A (A)           103 (78)         210.4 (133.6)         F (F)           122 (84)         22.9 (13.7)         C (B)           Old Montreal Read and East (Two-Way Stop Control           201 (806)         0.0 (0.0)         A (A)           2(3)         7.6 (9.4)         A (A)           828 (301)         0.0 (0.0)         A (A)	(VPH) (SEC)         Old Montreal Road and Dairy Drive (Signilized)         40 (4)       4.7 (6.6)       A (A)       0.22 (0.01)         304 (741)       4.3 (18.0)       A (B)       0.25 (0.84)         1 ()       3.5 (0.0)       A (A)       0.00 (0.00)         733 ()       13.7 (10.0)       B (A)       0.84 (0.57)         18 ()       21.6 (12.5)       C (B)       0.07 (0.03)         27 ()       21.9 (18.7)       C (B)       0.12 (0.64)         12 ()       21.3 (12.6)       C (B)       0.01 (0.06)         Montreal Road and Famille-Laporte Avenue / West (Two-Way Stop Contruit)         60 (99)       10.1 (8.2)       B (A)       0.08 (0.08)         245 (884)       0.0 (0.0)       A (A)       0.14 (0.52)         1 (2)       7.7 (9.7)       A (A)       0.00 (0.00)         895 (352)       0.0 (0.0)       A (A)       0.53 (0.21)         103 (78)       210.4 (133.6)       F (F)       1.19 (0.89)         Ize (84)       22.9 (13.7)       C (B)       0.38 (0.17)         Old Montreal Road and East Access (Two-Way Stop Contruit)         Coll (806)       0.0 (0.0)         A (A)       0.00 (0.0	(VPH)(SEC)(m)OIMontreal Resultation40 (4)4.7 (6.6)A (A)0.22 (0.01)1.3 (0.2)304 (741)4.3 (18.0)A (B)0.25 (0.84)10.1 (50.0)1 ()3.5 (0.0)A (A)0.00 (0.00)0.0 (0.0)733 ()13.7 (10.0)B (A)0.84 (0.57)60.6 (27.2)18 ()21.6 (12.5)C (B)0.07 (0.03)1.7 (0.9)27 ()21.9 (18.7)C (B)0.12 (0.64)2.5 (21.4)12 ()21.3 (12.6)C (B)0.01 (0.06)0.1 (0.2)Montreal Rossing colspan="2">Karwey Karwey Karwe		

Movement Legend: NB / SB / EB / WB – northbound, southbound, eastbound, westbound L/T/R – left, through, right

Examples: WBL - westbound left-turn, SBTLR - shared southbound through / left-turn / right-turn lane.



### **FUTURE TOTAL CONDITIONS (2027)**

The 2027 future total (future background plus additional site generated traffic) intersection capacity analysis results are summarized in **Table 11**. Both AM peak hour and PM peak hour are shown within the table, with the PM peak results shown within brackets. Results that do not meet the City's target VLOS of 'D' are highlighted in red.

Movements that had high delay and a poor LOS in the 2022 total traffic scenario continue to experience high delays.

MOVEMENT	VOLUME (VPH)	DELAY (SEC)	VLOS	V/C	Q50th (m)	Q95th (m)			
Old Montreal Road and Trim Road									
		(Rour	ndabout)						
EBL	74 (45)	5.9 <b>(35.5</b> )	A (E)	0.10 (0.58)	-	2.7 (17.7)			
EBT	69 (274)	6.5 (32.2)	A (D)	0.10 (0.58)	-	2.8 (18.1)			
EBR	50 (280)	5.2 (29.3)	A (D)	0.06 (0.69)	-	1.7 (27.0)			
WBL	196 (175)	29.6 (9.3)	D (A)	0.63 (0.29)	-	22.4 (8.6)			
WBT	279 (213)	25.8 (8.5)	D (A)	0.63 (0.29)	-	23.1 (8.6)			
WBR	204 (219)	14.0 (7.5)	B (A)	0.41 (0.27)	-	12.8 (8.3)			
NBL	233 (147)	14.8 (16.1)	B (C)	0.70 (0.61)	-	51.9 (29.7)			
NBT	1121 (599)	14.4 (15.5)	B (C)	0.70 (0.61)	-	51.9 (29.7)			
NBR	138 (148)	14.1 (14.9)	B (B)	0.70 (0.61)	-	50.6 (29.7)			
SBL	132 (421)	10.6 <b>(91.0</b> )	B (F)	0.38 (1.12)	-	13.1 (374.3)			
SBT	368 (1418)	10.1 <b>(89.6</b> )	B (F)	0.38 (1.12)	-	13.1 (399.6)			
SBR	34 (73)	9.9 <b>(89.9</b> )	A (F)	0.38 (1.12)	-	12.9 (399.6)			
Old Montreal Road and Dairy Drive									
		(Sigi	nalized)						
EBL	41 (4)	5.2 (6.6)	A (A)	0.20 (0.01)	1.3 (0.2)	4.7 (1.3)			
EBTR	275 (784)	5.0 (11.5)	A (B)	0.25 (0.86)	9.0 (5.9)	16.5 (126.4)			
WBL	1 (0)	4.2 (0.0)	A (A)	0.00 (0.00)	0.0 (0.0)	0.4 (0.0)			
WBTR	855 (531)	8.0 (10.2)	A (B)	0.81 (0.59)	42.8 (30.1)	84.2 (58.4)			
NBTLR	18 (17)	16.3 (12.9)	B (B)	0.06 (0.03)	1.4 (0.9)	5.5 (4.2)			
SBL	28 (283)	16.6 (21.1)	B (C)	0.10 (0.69)	2.1 (23.8)	7.2 (44.5)			
SBTR	13 (84)	16.2 (13.0)	B (B)	0.01 (0.06)	0.1 (0.2)	3.4 (7.1)			
Old	Montreal Roa		-	venue / West	Access				
		(Two-Way	Stop Contro						
EBL	55 (109)	9.6 (8.3)	A (A)	0.07 (0.09)	-	1.5 (2.1)			
EBTR	221 (927)	0.0 (0.0)	A (A)	0.13 (0.55)	-	0.0 (0.0)			
WBL	1 (2)	7.6 (9.8)	A (A)	0.00 (0.00)	-	0.0 (0.1)			
WBTR	791 (365)	0.0 (0.0)	A (A)	0.47 (0.21)	-	0.0 (0.0)			
NBTLR	102 (78)	85.2 (185.0)	<b>F</b> ( <b>F</b> )	0.79 (1.04)	-	33.1 (39.3)			
SBTLR	100 (93)	18.6 (14.8)	C (B)	0.27 (0.20)	-	7.7 (5.1)			

### Table 11. Intersection Capacity Summary – Future Total (2027)



MOVEMENT	VOLUME (VPH)	DELAY (SEC)	VLOS	V/C	Q50th (m)	Q95th (m)			
Old Montreal Road and East Access (Two-Way Stop Control)									
EBTR	177 (849)	0.0 (0.0)	A (A)	0.10 (0.50)	-	0.0 (0.0)			
WBL	2 (3)	7.6 (9.5)	A (A)	0.00 (0.00)	-	0.0 (0.1)			
WBT	724 (314)	0.0 (0.0)	A (A)	0.43 (0.18)	-	0.0 (0.0)			
NBLR	72 (55)	19.1 (25.8)	C (D)	0.22 (0.24)	-	5.8 (6.4)			

Movement Legend:

NB / SB / EB / WB - northbound, southbound, eastbound, westbound

L / T/ R – left, through, right

Examples: WBL – westbound left-turn, SBTLR – shared southbound through / left-turn / right-turn lane.

#### SUMMARY OF VEHICLE CAPACITY ANALYSIS

#### **Old Montreal Road and Trim Road**

- Analysed as a roundabout using the existing lane arrangement for all scenarios
- All southbound and the eastbound left movements operate over capacity in the PM peak hour by 2027 under the background traffic scenario

#### **Old Montreal Road and Dairy Drive**

- Analysed as a two-way stop control under existing, 2022 background, and 2027 background scenarios
- Analysed as a traffic signal under the 2022 total and 2027 total scenarios (the scenarios that traffic signal warrants were met)
- A traffic signal improves the intersection operations by reducing the delay experienced by vehicles making a northbound or southbound left/through movement

#### **Old Montreal Road and Famille Laporte Avenue**

- Analyzed as a two-way stop control using the existing lane arrangement on Old Montreal Road for all scenarios (no traffic signal warrant was met)
- Vehicles making a northbound left movement out of the proposed Phoenix development experience high delay
- Alternative intersection configurations are considered in Section 0

#### **Old Montreal Road and East Access**

- Analyzed as a two-way stop control with no eastbound left turn lane (left turn lane warrant not met)
- Intersection operates with an acceptable level of service for all scenarios



### 9.3. FAMILLE-LAPORTE AVENUE ALTERNATIVES

The analysis of intersection operations for the 2022 and 2027 future total conditions show that vehicles exiting the development at Famille-Laporte will experience high delay in the peak hours due to the existing high volumes along Old Montreal Road and conflicting vehicle movements entering/existing Cardinal Creek Village. Additional alternative scenarios at Famille-Laporte were considered and include

- 1 Reassignment of traffic from the west full movement access to east full movement access to determine if / when a balanced v/c ratio can be achieved
- 2 Roundabout (single lane)
- 3 Traffic signal with east & west left turn lanes

**Reassignment:** High delay at Famille-Laporte Avenue under baseline conditions would likely see a redistribution of exiting traffic to the East Access. The northbound approach delay at these two intersections is expected to be approximately equal if 95% of exiting left-turn traffic uses the East Access. While feasible as an interim measure, this is not a long-term solution.

**Roundabout**: Roundabouts are not generally implemented along corridors with insufficient gaps in the major traffic flow to accommodate the minor flow or at intersections with significantly unbalanced traffic volumes on the approach roads which is the case at this location, therefore a roundabout was not further considered.

Crash history at this intersection was provided as part of the larger road segment. Of the nine crashes in this area, eight were single motor vehicle and not the head-on, right angle, or left-turn across crashes that indicate that a roundabout may be suitable. There were no fatal crashes.

Roundabouts are suitable for locations where there is a transition from a rural to an urban environment. In the 2022 and 2027 planning horizon it is expected that there will be two new accesses to Cardinal Creek Village to the east within the general urban area.

**Traffic Signals**: The addition of a traffic signal reduces the average delay for exiting northbound traffic at the West Access to approximately 20s during both peak hours. A signal introduces some minor delays to eastbound and westbound traffic. Overall average intersection delay is comparable to baseline conditions. See **Table 12** for the intersection operations summary.

MOVEMENT	VOLUME	DELAY (S)	VLOS	V/C	Q50th (M)	Q95th (M)			
Old Montreal Road and Famille-Laporte Avenue / West Access									
EBL	55 (109)	4.1 (3.5)	A (A)	0.12 (0.15)	1.9 (3.8)	6.1 (9.2)			
EBTR	221 (927)	4.0 (8.7)	A (B)	0.18 (0.70)	7.3 (58.7)	16.4 (111.3)			
WBLTR	791 (365)	8.3 (3.9)	B (A)	0.64 (0.28)	43.4 (14.2)	87.7 (26.2)			
NBTLR	102 (78)	26.6 (31.8)	C (C)	0.34 (0.29)	5.9 (4.9)	16.5 (15.2)			
SBTLR	100 (93)	24.8 (30.3)	C (C)	0.09 (0.09)	0.7 (0.8)	10.4 (11.3)			

#### Table 12. Intersection Capacity Summary – Famille Laporte Avenue Traffic Signal – 2027 Total

Movement Legend:

 $NB\ /\ SB\ /\ EB\ /\ WB\ -\ northbound,$  southbound, eastbound, westbound

L / T / R - left, through, right

 $Examples: WBL-westbound \ left-turn, \ SBTLR-shared \ southbound \ through \ / \ left-turn \ / \ right-turn \ lane.$ 

Considering the baseline conditions and three alternatives, a traffic signal is most appropriate at this location.

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## 10. SUMMARY OF IMPROVEMENTS AND MODIFICATION OPTIONS

### 10.1. CONCLUSIONS

Background traffic analysed includes known developments in the area. The largest known development is the multi-phased Cardinal Creek Village located directly to the north of the proposed Phoenix Development. Cardinal Creek Village is a major generator of traffic in this area. The 2022 planning horizon has indicated that an additional 374 westbound trips during the AM peak hour and 398 eastbound trips during the PM peak hour have been assigned to Old Montreal Road. By the 2027 planning horizon year, the Cardinal Creek Village will have a new signalized connection to Highway 174 approximately 1.5km east of Trim Road. This new intersection is expected to change internal traffic patterns and reduce the number of trips on Old Montreal Road. Also for the 2027 planning horizon, the Cardinal Creek Village will have added 182 westbound trips during the AM peak hour and 170 eastbound trips during the PM peak hour to Old Montreal Road.

As background traffic continues to increase there is a corresponding decrease in LOS and v/c ratios at existing intersections in the study area. By 2027, SB movements and the EBL movement at the Trim Road / Old Montreal Road roundabout are operating over capacity with a LOS 'E' or 'F'. This represents a degradation in the LOS when compared with the existing conditions. These reductions in LOS are typical as neighborhoods mature and as greenfields are developed for residential, commercial, or industrial uses.

The development of the Phoenix lands will increase pressures on the intersection LOS when compared to the background traffic scenarios. However, it is noted that new development growth along Old Montreal Road will also place additional pressure on the existing intersection conditions and cause similar reductions in LOS. Specifically, changes to the Cardinal Creek Village development (development plan, access locations, phasing) would impact on the Dairy Drive and Famille Laporte intersection operations.

## In conclusion, the proposed development by Phoenix Homes located at 1154, 1172, 1180, and 1208 Old Montreal:

- a) is appropriately designed for sustainable modes,
- b) is aligned with the City of Ottawa's broader city-building objectives,
- c) generates fewer vehicle trips than the Cardinal Creek Village development,
- d) can be accommodated with impacts to traffic operations for the 2022 and 2027 planning horizons being managed.

The proposed development is appropriate from a transportation planning perspective taking into consideration the City of Ottawa's Transportation Master Plan, Official Plan, and the recommendations of this report (Section 0).

#### 10.2. RECOMMENDATIONS

#### 1. Designing for Sustainable Modes

To reduce walking distance to existing transit stops, consider:

- a) Removing the deviation in the proposed sidewalk north of Block 9, if not otherwise required to comply with a 5% running slope.
- b) Moving the nearby eastbound bus stop from Grand Chène Crescent to the northeast (far-side) corner of the intersection of Old Montreal Road with Famille-Laporte Avenue.

#### **Reference: Section 2.1**

#### 2. Boundary Street Design

No modifications to the boundary street design are required to accommodate this development. The future widening of Old Montreal Road in this area proposed in the City's Transportation Master Plan could provide additional capacity and improved facilities for all transportation modes.

#### **Reference: Section 4**

#### 3. Intersection Design

- a) <u>Old Montreal Road and Trim Road</u>. No modifications are proposed. It is noted that southbound traffic movements at this location will exceed available intersection capacity without the addition of the proposed development generated traffic.
- b) <u>Old Montreal Road and Dairy Drive</u>. The installation of a traffic signal is proposed as part of a City assessment focused on the provision of increased capacity to serve the rural areas located to the east. Alternatively, potential changes either in scale or phasing of the Cardinal Creek Village development (located to the north) would reduce pressure on Old Montreal Road.
- c) <u>Old Montreal Road and Famille-Laporte Avenue.</u> The installation of a traffic signal is proposed to provide opportunities for vehicles to make left-turns to and from the north and south legs of the intersection without high levels of delay. The intersection should include accessible pedestrian crosswalks following OTM Book 11 (Pavement Markings) and Book 15 (Pedestrian Crossing Treatments).
- d) <u>Right-in / Right-out Accesses</u>. Include a channelized island (**Figure 2**) to restrict left turns onto Old Montreal Road from the Famille-Laporte Avenue access location.
- e) <u>Old Montreal Road and East Access</u>: One-way (northbound) stop control intersection with eastwest accessible pedestrian crosswalk following OTM Book 11 (Pavement Markings) and Book 15 (Pedestrian Crossing Treatments). Westbound left turn volumes are expected to be low and do not require a left turn lane. Traffic signal warrants were not met.

**Reference: Sections 0 and 9** 



### 11. ROAD MODIFICATION APPROVAL DRAWINGS

Following the City of Ottawa's acceptance of the TIA Strategy Report, one RMA drawings would be prepared and submitted as follows:

- **1** Famille Laporte Intersection to be upgraded to a traffic signal with the following lane arrangement (**Section 0**):
  - Eastbound Left (as existing)
  - Eastbound Through / Right
  - Westbound Left / Through / Right
  - Northbound Left / Through / Right
  - Southbound Left / Through / Right (as existing)



## A TDM CHECKLIST

## 1154, 1172, 1180, and 1208 Old Montreal Road

## **TDM-Supportive Development Design and Infrastructure Checklist:**

Residential Developments (multi-family or condominium)

Legend						
REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed					
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users					
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance					

	TDM-s	supportive design & infrastructure measures: Residential developments		Check if completed & descriptions, explanations plan/drawing references
	1.	WALKING & CYCLING: ROUTES		
	1.1	Building location & access points		
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	Ø	No parking is located between any multi-unit building and the street / sidewalk
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	R	Direct connections (<10m) between sidewalk and main building entrances. Majority of multi-unit buildings located closer to Old Montreal Road and nearest transit stop
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	Ŋ	Building doors and windows face Old Montreal Road or internal site pedestrian facilities
	1.2	Facilities for walking & cycling		
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see Official Plan policy 4.3.3)	Ø	Trim Road is nearest rapid transit station, at approximately 1250m walking distance. Concrete sidewalks provided on-site to connect to nearest transit stop on Old Montreal Road
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing	Ø	Direct connections (<10m) between main building entrances and sidewalks on Old Montreal Road or new internal roadways. Sidewalks are located in front of all multi-unit buildings

	TDM-s	supportive design & infrastructure measures: Residential developments		Check if completed & I descriptions, explanations r plan/drawing references
		weather protection through canopies, colonnades, and other design elements wherever possible <i>(see Official</i> <i>Plan policy 4.3.12)</i>		
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (see Official Plan policy 4.3.10)	R	Sidewalks to be constructed of concrete to differentiate pedestrian areas from vehicle areas (to be confirmed during development of site plan). Crosswalks provided at all accesses along Old Montreal Road
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (see Official Plan policy 4.3.10)	A	Sidewalks will have gradual grade transitions, depressed curbs at street corners, and access to the required number of accessible parking spaces. (to be confirmed during development of site plan)
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on- road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (see Official Plan policy 4.3.11)	A	Pedestrian connections provided at east and west accesses. The proposed accesses also connect to paved shoulders / future bike lanes on Old Montreal Road. To be detailed during development of site plan.
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	Q	On-site pedestrian pathways / sidewalks connect to existing transit stops on Old Montreal Road
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	X	Eastbound transit stop on Old Montreal Road without direct pedestrian facilities
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	Ø	Internal roads designed using a low target operating speed
	1.3	Amenities for walking & cycling		
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails		To be confirmed during site plan development
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	×	

	TDM-s	supportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanation or plan/drawing references		
	2.	WALKING & CYCLING: END-OF-TRIP FACILI	TIES	6	
	2.1	Bicycle parking			
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see Official Plan policy 4.3.6)		To be confirmed during site plan development	
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well- used areas (see Zoning By-law Section 111)		To be confirmed during site plan development	
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see Zoning By-law Section 111)		To be confirmed during site plan development	
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	X		
	2.2	Secure bicycle parking			
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see Zoning By-law Section 111)		To be confirmed during site plan development	
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi- family residential developments	X		
	2.3	Bicycle repair station			
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	X		
	3.	TRANSIT			
	3.1	Customer amenities			
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	X	There are no on-site transit stops proposed	
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	X	The site does not abut any off-site transit stops	
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	X	There are no on-site transit stops proposed	

	TDM-s	supportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references		
	4.	RIDESHARING			
BASIC	<b>4.1</b> 4.1.1	<b>Pick-up &amp; drop-off facilities</b> Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	X		
	5.	CARSHARING & BIKESHARING			
	5.1	Carshare parking spaces			
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses <i>(see Zoning By-law Section 94)</i>	R		
	5.2	Bikeshare station location			
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	X		
	6.	PARKING			
	6.1	Number of parking spaces			
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	The proposed number of parking spaces will meet the requirements of the City's Zoning By-law		
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	On-road and visitor parking spaces provided for short-term users.		
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly <i>(see Zoning By-law</i> <i>Section 104)</i>			
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking <i>(see Zoning By-law Section 111)</i>			
	6.2	Separate long-term & short-term parking areas			
BETTER	6.2.1	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	To be confirmed during site plan development		



## B TRAFFIC SIGNAL WARRANTS



SCENARIO H	Future Background		YEAR	2022	
MAJOR ROAD C	Old Montreal Roa	ad M	INOR ROAD	Dairy Drive	
FLOW TYPE	Restricted	]	ROAD TYPE	1 I	Lane
NEW ROAD / INT.	No		"T" INT.	No	
	MINIMUM REQUIREMENT			COMP	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	565	620	110%	62%
1B - Minor Road	120	145	90	62%	0270
2A - Major Road	480 57		530	92%	92%
2B - Crossing Major Road	50	60	65	108%	9290

SCENARIO	Future Background		YEAR	20	22
MAJOR ROAD	Old Montreal Roa	ad M	INOR ROAD	Famille-Laport	e / West Access
FLOW TYPE	Restricted	]	ROAD TYPE	1 Lane	
NEW ROAD / INT.	No		"T" INT.	No	
	MINIMUM REQUIREMENT			COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	565	595	105%	34%
1B - Minor Road	120	145	50	34%	5470
2A - Major Road	480	575	545	95%	17%
2B - Crossing Major Road	50	60	10	17%	1/%



SCENARIO H	Future Background		YEAR	2027	
MAJOR ROAD C	Old Montreal Roa	ad M	INOR ROAD	Dairy Drive	
FLOW TYPE	Restricted		ROAD TYPE	11	Lane
NEW ROAD / INT.	No		"T" INT.	No	
	MINIMUM REQUIREMENT			COMP	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	565	600	106%	66%
1B - Minor Road	120	145	95	66%	0070
2A - Major Road	480	575	505	88%	88%
2B - Crossing Major Road	50	60	75	125%	0070

SCENARIO	Future Background		YEAR	20	27
MAJOR ROAD	Old Montreal Roa	ad M	INOR ROAD	Famille-Laporte / West Acce	
FLOW TYPE	Restricted	]	ROAD TYPE	1 Lane	
NEW ROAD / INT.	No		"T" INT.	No	
	MINIMUM REQUIREMENT			COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	565	575	102%	34%
1B - Minor Road	120	145	50	34%	5470
2A - Major Road	480	575	525	91%	17%
2B - Crossing Major Road	50	60	10	17%	1/%



SCENARIO	Future Total		YEAR	2022	
MAJOR ROAD (	Old Montreal Roa	ad M	INOR ROAD	Dairy Drive	
FLOW TYPE	Restricted		ROAD TYPE	1 L	Lane
NEW ROAD / INT.	No		"T" INT.	No	
	MINIMUM REQUIREMENT			COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	565	755	134%	72%
1B - Minor Road	120	145	105	72%	1270
2A - Major Road	480	575	650	113%	113%
2B - Crossing Major Road	50	60	85	142%	115%

SCENARIO	Future Total		YEAR	20	)22
MAJOR ROAD	Old Montreal Roa	ad M	INOR ROAD	Famille-Laport	e / West Access
FLOW TYPE	Restricted		ROAD TYPE	1 L	ane
NEW ROAD / INT.	Yes		"T" INT.	N	lo
	MINIMUM RI	EQUIREMENT		COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	705	735	104%	56%
1B - Minor Road	120	180	100	56%	5070
2A - Major Road	480	720	635	88%	73%
2B - Crossing Major Road	50	75	55	73%	7570

SCENARIO	Future Total	YEAR	2022
MAJOR ROAD	Old Montreal Road	MINOR ROAD	East Access
FLOW TYPE	Restricted	ROAD TYPE	1 Lane
NEW ROAD / INT.	Yes	"T" INT.	Yes

	MINIMUM RE	EQUIREMENT		COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	705	570	81%	11%
1B - Minor Road	120	270	30	11%	1170
2A - Major Road	480	720	535	74%	40%
2B - Crossing Major Road	50	75	30	40%	40%



SCENARIO	Future Total		YEAR	20	)27
MAJOR ROAD C	old Montreal Roa	nd M	INOR ROAD	Dairy	Drive
FLOW TYPE	Restricted	]	ROAD TYPE	1 L	Lane
NEW ROAD / INT.	No		"T" INT.	Ν	lo
	MINIMUM RI	EQUIREMENT		COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	565	735	130%	76%
1B - Minor Road	120	145	110	76%	7070
2A - Major Road	480	575	625	109%	109%
2B - Crossing Major Road	50	60	90	150%	10970

SCENARIO	Future Total		YEAR	20	)27
MAJOR ROAD	old Montreal Roa	ad M	INOR ROAD	Famille-Laport	e / West Access
FLOW TYPE	Restricted		ROAD TYPE	1 L	lane
NEW ROAD / INT.	Yes		"T" INT.	N	lo
	MINIMUM RI	EQUIREMENT	_	COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	705	715	101%	53%
1B - Minor Road	120	180	95	53%	5570
2A - Major Road	480	720	620	86%	73%
2B - Crossing Major Road	50	75	55	73%	1 3 70

SCENARIO	Future Total	YEAR	2027
MAJOR ROAD	Old Montreal Road	MINOR ROAD	East Access
FLOW TYPE	Restricted	ROAD TYPE	1 Lane
NEW ROAD / INT.	Yes	"T" INT.	Yes

	MINIMUM RE	EQUIREMENT		COMPI	LIANCE
JUSTIFICATION	FLOW	ADJ. FLOW	AHV	%	OVERALL %
1A - All Approaches	470	705	550	78%	11%
1B - Minor Road	120	270	30	11%	1170
2A - Major Road	480	720	520	72%	40%
2B - Crossing Major Road	50	75	30	40%	40%



# C DETAILED SYNCHRO SHEETS

Intersection														
Int Delay, s/veh	6.3													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	ሻ	Ą		ሻ	4			<b>4</b> >	<u>Suunnesennavan</u>	ሻ	<del>(</del> 1			
Traffic Vol, veh/h	le i	347	7	İ	182	28	9	3	3	190	3	45		
Future Vol, veh/h	 1	347	<b>7</b>	0	182	28	9	3	3	190	3	45		
Conflicting Peds, #/hr	Ò	0	2	2	0	0	2	Ō	2	2	0	2		
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop		ana an
RT Channelized			None			None			None			None		
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Grade, %	0.000000000 -	0	•	- - -	0	-	- 1905-1907	0	-	- -	0	4:::::::::::::::::::::::::::::::::::::		
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90		
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0		
Mvmt Flow	1	386	8	0	202	31	10	3	3	211	3	50		
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Conflicting Flow All	233	0	0	395	0	0	640	627	393	615	616	220		
Stage 1	200	U -	U	່ງອງ	U -	· ·	394	394	- 050	218	218	~~~		
Stage 2	00000.99 <b>7</b> 9	50390359 •	<u>.</u>		9 9 9 7 9 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- -	246	233	- -	397	398			
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Critical Hdwy Stg 2	-	- 2000-1	- 1999-19	- 9.89.9 <u>-</u> 1	-		6.1	5.5		6.1	5.5	- 		
Follow-up Hdwy	2.2	-		2.2		- -	3.5	5.5 4	3.3	3.5		3.3		
Pot Cap-1 Maneuver	1346	-	69.000/ 004.0 000000 <b>-</b> 7	1175	-		391	403	660	406	409	825		
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Stage 1			1940 - 1940 Constantia <b>-</b> 19		-	•	633	608		788	726	nesi teri dala Sintan <b>T</b> ita		
Stage 2		anagony:55139	99099/197202 •	sentesti (1988)			711	716		625	605			
Approach	EB			WB			NB			SB				
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/linor Lane/Major Mvml	t f	VBLn1	EBL	EBT	EBR	WBL	WBT	WBA	SBLn1 S					
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HCM Control Delay (s)		14.2	7.7			0	5 (S. 2)		23.6	10				
HCM Lane LOS	tan bara manana sa	B	A	-	-	A	•	-	С	В	2010.00000000	a state a service de la		
HCM 95th %tile Q(veh)		0.1	0			0			3	0.2				

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	C		VBR SBL	SBR							
Lane Configurations	ሻ	个	₽	V								
Traffic Vol, veh/h	101	417	128	4 7	77							
Future Vol, veh/h	101	417	128	47	77		a an ana an hair a na ann an taonachan		and the second	an		elementa de la composita
Conflicting Peds, #/hr	2	0	0	2 2	1							
Sign Control	Free	Free		Free Stop	Stop	an an the second second		e geri ster ster i tradici graf e	alentek konstantet besentet			an Mercianan
RT Channelized	e 1999 e 199	None	- N	lone -	None							
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Veh in Median Storage	,# -	0	0	- 0								
Grade, %	-	0	0	- 0	-	garati angkalan	en de la companya de		ana ini ina si ka	asa na ƙala		il Malan
Peak Hour Factor	90	90	90	90 90	a da anti a da anti a da anti						is in the second of the second	
Heavy Vehicles, %	0	0	0 1 <b>42</b>	0 0 4 8	0 86							
Mvmt Flow	112	463	142	4 0	00					89 89 89 89 89 8		
	Major1		lajor2	Minor2								
Conflicting Flow All	149	0	-	0 836	147							
Stage 1		•		- 146	- 10. IS				13.09 (3.18)			
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Critical Hdwy	4.1			- 6.4	6.2	8.996.996	nan kana kana ka					
Critical Hdwy Stg 1	- 99000000000	- 1244-1444-1444	-	- 5.4	- 							
Critical Hdwy Stg 2		•		- 5.4								
Follow-up Hdwy	2.2	- 2000- <u>-</u> 0	•	- 3.5 - 340	3.3 905							
Pot Cap-1 Maneuver	1445			- 340 - 886	900							
Stage 1 Stage 2		- 2201200280	- 	- 502	-							
Platoon blocked, %	1900-57	2020200	59439459485 •	- 302	44940000,790	560,50,50,69,450			1881528126787			
Mov Cap-1 Maneuver	1444	929239 <u>0</u> 3	200 <b>-</b> 200	- 313	903							
Mov Cap-2 Maneuver	illi attannais		501602778247899 -	- 313		ste yn de fermeningen fer		an dika galika ing dialo	, 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 199 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	ja dela anti se esperante	Carrier of Schullerer Are	internet (1995)
Stage 1			- 10	- 884								
Stage 2			-	- 462	•							
			na si									
Approach	EB		WB	SB								
HCM Control Delay, s	1.5		0	10.2								
HCM LOS	See Live	de Generation Generation de la companya de la comp		B	en beringe aussiehe sie eine	na de transforma de parti	kter tist y staatstad	Ala ya Asoo Alaaso	an na hArra Arra ( 1914) a gra	este de la companya de la companya Altra de la companya	an in an	
Minor Lane/Major Mvm	ıt	EBL	EBT	WBT WBR	SBLn1							
Capacity (veh/h)		1444			780							
HCM Lane V/C Ratio		0.078	1999 - 1999 -	959777393995	0.12							ann Feirright (
HCM Control Delay (s)		7.7	-	- 	10.2							
HCM Lane LOS	99899988	A.	69-59-59-55 •		B	ereneripten der		5		aran di setaken di	an pelanasiyalanji.	la second second
HCM 95th %tile Q(veh)		0.3			0.4							
	<b>i</b> sanga katika	9999999 <b>8</b> 7 <b>8</b> 78999	en per general de la seconda de la second La seconda de la seconda de	aseyses sectors and	enedder o Labolddi	ependependenting Mali	er an a state an théo di MCSA (19	en este anter anter Albert	neenn san san san san san san san san san s	an ang ang tang tang tang tang tang tang	a processiones. N	ere data data data

													444-44-44-44-44-44-44-44-44-44-44-44-44	
Intersection														
Int Delay, s/veh	1.3													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	ሻ	<b>1</b>		ሻ	4			\$		ሻ	ţ,			
Traffic Vol, veh/h	40	210	6		625	202	10	8	0	17	<b>1</b>	11	****	
Future Vol, veh/h	40	210	6	://///////////////////////////////////	625	202	10	8	0	17	1	11		
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	2	2	0	0		
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop		
RT Channelized			None			None			None			None		
Storage Length	500	-		400	•	•	-	-	-	200	-	-		
Veh in Median Storage,	# -	0	699.9 <b>.</b> 9		0		30336	0		(189 <b>-</b> )	0	\$\$ <b>\$</b> \$\$		
Grade, %		0	+	-	0	-	-	0	-	-	0	-		
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100		
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0		
Mvmt Flow	40	210	6	1	625	202	10	8	0	17	1	11		
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,												
Vlajor/Minor N	lajor1			Major2			Minor1		Å	Ainor2				
	827	0	0	220	0	0	1031	1126	219	1027	1028	726		
Conflicting Flow All Stage 1	alla and a state of the	and and and a second second second	sanasasina	22V	ensionaisuu	V	297	297	219	728	728	120		
Stage 2			<u>, (d. 19</u> 77)			-	297 734	829	<u>.</u>	299	300			and the second
Critical Hdwy	- 4.1			- 4.1			7.1	6.5	6.2	7.1	6.5	6.2		
Critical Hdwy Stg 1		unita titala		s til :	ensenaan	89-80-86	6.1	5.5	- -	6.1	5.5	U, <u>C</u> -		
Critical Hdwy Stg 2	-		-	- 201301612-0			6.1	5.5		6.1	5.5	-		
Follow-up Hdwy	2.2			2.2		-	3.5	4	3.3	3.5	0.0 4	3.3		
Pot Cap-1 Maneuver	813	-	- 2010/00/00/00 2010/00/00	1361			213	207	826	215	236	428		
Stage 1		94830120546	5//92/09/05 •	-	20020/8801 •	0611020105540. -	716	671	- 44.	418	432			
Stage 2						19.59 <b>(</b>	415	388		714	669			
Platoon blocked, %	an a	098099900 •	0.499.499.49 -	SARARA	99576413699 <b>-</b>		S. T.Y.	30 <b>00</b> 0		Satishida		n en der		
Nov Cap-1 Maneuver	813			1359			198	196	822	200	223	428		
Nov Cap-2 Maneuver	-					-	198	196	0	200	223	-		n se negerije (de lieferen de lieferen La ferencia de lieferen de l
Stage 1	unio de la la constante de la c		100500000 Saussansi <b>-</b> 4	in dan dalar Sanasi da <b>n</b> d	an gana an		678	636		397	432			
Stage 2 -	3055/1695/385 <b>-</b>	2003333099 •	unistatio d		5403901999) 	544253394	403	388	999903389999 •	669	634			nantinustististi
	1655-1660/1555													
Approach	EB			WB			NB			SB				
-ICM Control Delay, s	1.5			0		h di L	25.1	108		20.4				
HCM LOS	risebilga teora	theosopei an ce	seya (seya bara a sa	en e	sanatah nakaring	1949-1940-14	D	seggeren	ting the second	C	usisistem			
	an an thaile an thail an thai Thail an thail an thai					ana na								
Vinor Lane/Major Mvmt	N	IBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1 (	SBLn2				
Capacity (veh/h)		197	813		Transestrand Index Pro	1359		- 19 S	200	398	585783 <i>186</i>			
HCM Lane V/C Ratio		tan setek bar sen ser	0.049	- -	and the second	0.001			0.085	0.03	agente prosta			e - Jane - Coli (1998)
												and an inclusion of the	en el el compaño de la comp	alecenteroween
and a second part of the second second second second second second		1.1.2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		9.00 (40.4) Seleta -	ka)skovala Seveni S∎	7.7			24.7	14.3				
HCM Control Delay (s) HCM Lane LOS		25.1 D	9.7 A	-	- - -	7.7 A	87875 -	-	24.7 C	14.3 B				

Intersection								
Int Delay, s/veh	2.6							
Movement	EBL EBT	WBT	WBR SBL	SBR				
Lane Configurations	ሻ ተ	Ŷ	М					
Traffic Vol, veh/h	60 148	805	21 7	115				
Future Vol, veh/h	60 148	805	21 7	115	n y seda e recesa e recesa presente e recesa e presidentes.			ww.
Conflicting Peds, #/hr	0 0	0	0 0	0				
	Free Free	Free	Free Stop	Stop		e and a state of the	ann an an bhair Malling an an an da caollain Airlean a	
RT Channelized	- None		is a strategy of the second strategy second	None				<u> 1976</u>
	1250 -	- 	- 0	-		en en en Stat (monsteller instructur)		2003-0
Veh in Median Storage, I		0	• 0					
Grade, %	- 0	0	- 0		n en all anne an an Arbhrynnau a'			1941 -
Peak Hour Factor	100 100	100	100 100	100				
Heavy Vehicles, %	0 0	0	0 0	) جر د د	the appellant says the product and	an in station and		2662
Mvmt Flow	60 148	805	21 7	115				1919) 
Major/Minor Ma	ajort I	Major2	Minor2					
Conflicting Flow All	826 0	-	0 1084	816				
Stage 1		-	- 816					
- Stage 2		-	- 268	-				
Critical Hdwy	4.1 -	-	- 6.4	6.2				
Critical Hdwy Stg 1		-	- 5.4	-			· · · · · · · · · · · · · · · · · · ·	
Critical Hdwy Stg 2			- 5.4					
Follow-up Hdwy	2.2 -	-	- 3.5	3.3	an a			·
Pot Cap-1 Maneuver	813 -		- 242	380				
Stage 1	e e	-	- 438	-	en se		na senta	entre tre
Stage 2		5. CIS.	- 782	-				
Platoon blocked, %	-	- 	- 	an a				nasista
Mov Cap-1 Maneuver	813 -		- 224	380				
Mov Cap-2 Maneuver	• •	-	- 224	-				
Stage 1		97671 <b>-</b> 9	- 438					
Stage 2	-		- 724		wegen oor oor oor bestelden de			59987
			la com Sing Si					
Approach	EB	WB	SB					
HCM Control Delay, s	2.8	0	19.7					
HCM LOS			С					
Minor Lane/Major Mvmt	EBL	EBT	WBT WBR	Blint				
Capacity (veh/h)	813			365				
HCM Lane V/C Ratio	0.074	- •	방법은 전문을 위한 전문을 감독하는 것이 없다.	0.334		an an seithe seithe seithe seithe seither seither seither seither seither seither seither seither seither seith		epoplik
HCM Control Delay (s)	9.8		-	19.7				
HCM Lane LOS	0.0 A			C		an a		799988
				<u> </u>				

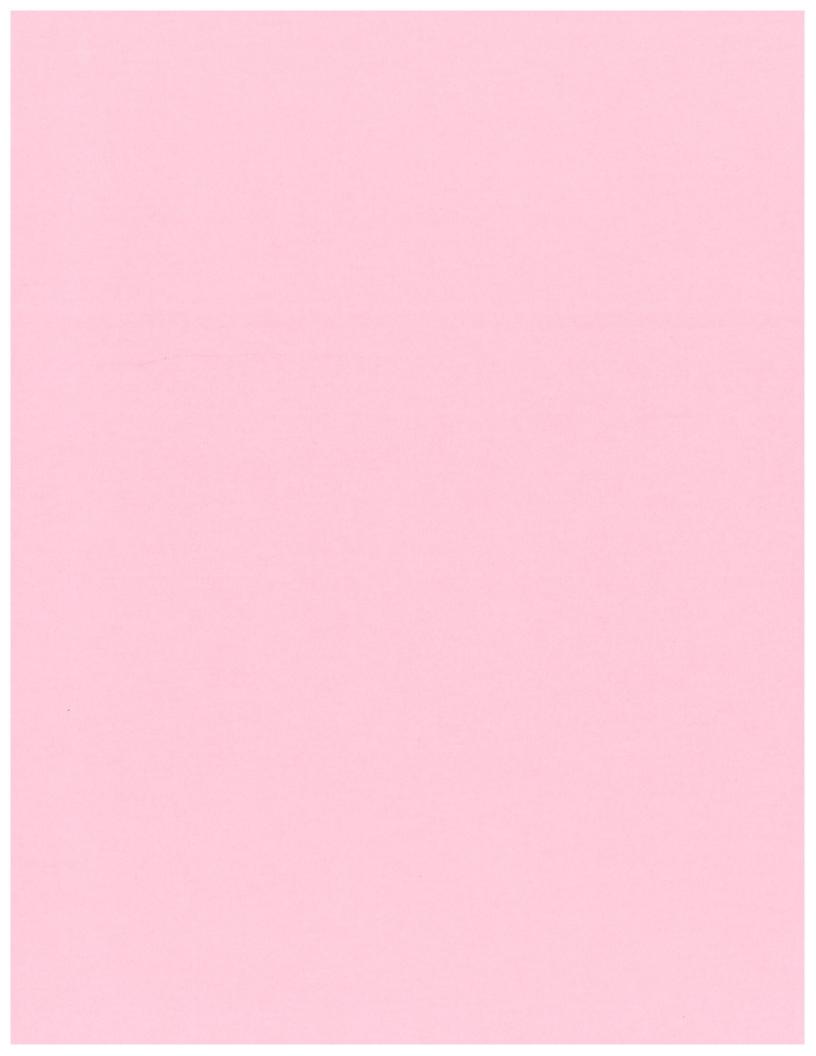
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ntersection																
nt Delay, s/veh	18.4															
lovement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
ane Configurations	<u>202</u> K	<u>, 055</u> 4	E MIT	<u></u>	. <u></u>			<u>مبه</u>		<u></u> ኑ	<del>4</del> 1					
raffic Vol, veh/h	4	646	8	0	349	31	10	3	3	211	3	76				
uture Vol, veh/h	4	646	8	0	349	31	10	3	3	211	3	76		0.0/10.5/055		
Conflicting Peds, #/hr	Ò	0	2	2	0	0	2	0	2	2	0	2			ndeg (solite) Note (Solite)	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	iner handlig and		an an thing a thir train in the train
T Channelized		- -	None			None			None			None				
Storage Length	500	-	-	400	-	-	-	-	-	200	-	-				
eh in Median Storage,	# -	0			0	9 9 <b>-</b>	- N	0	9 Q 🔹	- 1997	0	- 1000		9-19-14		
Grade, %	-	0	-	-	0	•	-	0	=	-	0	+ sunnoneren	united in the second	agay ya manaka	alaaggaartestoret	an a
eak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100		i an shi		
leavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0	eren ander	221 <i>0046</i> 4	unessues (**	
Avmt Flow	4	646	8	0	349	31	10	3	3	211	3	76				
	ajor1			Major2		1	Minor1			Ainor2						
Conflicting Flow All	380	0	0	656	0	0	1066	1040	654	1028	1029	367	syledjinarovi	240225020		-
Stage 1	8.51		u de la compañía Compañía				660	660		365	365				ي. مرتبع <u>، م</u> ما	
Stage 2		•	-	•	Salada datare	• 2010/00/00/00/00	406	380	- 	663	664	<b>-</b> Mario 2010	(namerika)		an sean thair an thai	
Critical Hdwy	4.1	6 66 <b>-</b>		4.1			7.1	6.5	6.2	7.1	6.5	6,2				
Critical Hdwy Stg 1	- 	-	-	بر کار میں کو میں کو میں کو میں کو میں کو میں کو میں کر کر میں	-	-	6.1	5.5	- 	6.1	5.5	- 	ya gyaanaa	u je stati ka	ana	
Critical Hdwy Stg 2	8.0.•)	•	- an		6. 6. S		6.1	5.5	•	6.1	5.5					
Follow-up Hdwy	2.2	-	- 	2.2	- 	- 29-8220-1145-114-	3.5	4	3.3	3.5	4	3.3	aanseere e			909903-004-00
era desta necesión 🖬 montación todo segundo segundo segundo segundo segundo segundo segundo segundo segundo seg	1190			941	Sense con		202	232	470	214	236	683				
Stage 1	-	• Sinoskiiosis	- 24(12)(12)	- 200200000	-	- Sanationa	455	463	- 880,896,896	658	627	• */:///				
Stage 2					- <u>-</u>	-	626	617	- -	454	461	-			4997-559239 4427-559239	
latoon blocked, %	1100	- 200522500	- 2012/102202		<b>-</b> 2222223	- 2005-000		001	400	~ • • •	005	000	Verseele	91734T		
ana salah katalan katal 🔹 di Californi katalan katalah satu di satu	1188	-		939	8 8 <b>-</b>	•	177	231	00490404444444444	~ 210	235	682		64.00/19		
Nov Cap-2 Maneuver	- (1999):1995):1995	- ********	+	- 1999:1990:1990	- ********	- 2008-092	177	231	- 01/2009/	~ 210	235	- 19899999	<u>9989</u> 000	<i>99966</i> 68	06693302	
Stage 1			e consta	9.00 B.		an an an Geolaíocht	453	461		656	627			auswa		
Stage 2		etenis <b>.</b> National	- 8/88/80	- 1969/664	- 6009494	- 9-09-09-	553	617	-	446	459					
pproach	EB			WB			NB			SB						
ICM Control Delay, s	0			0			23.5			84.1				51 (S. 1) 61 (S. 1)		
ICM LOS			ngergebere dat de	un en	ana	general sector and sector	С			F	Wester and the		dara da anticidado de la composición de	zuosania.	ungunativ	aninesini areasian
									20/20/20) Va 65-250							
/inor Lane/Major Mvmt	ľ	VBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2						
Capacity (veh/h)		211	1188	-		939		68.÷	210	636						
ICM Lane V/C Ratio		0.076	0.003	•	•••••••••••••••••••••••••••••••••••••••			•	1.005	0.124						
ICM Control Delay (s)		23.5	8	1977 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1985 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 - 1986 -	0.000 000 0.000 00 <b>.</b> .	0			111.3	11.5						
ICM Lane LOS		С	A	-	-	A	-	•	F	В						
ICM 95th %tile Q(veh)		0.2	0			0		99 <b>.</b>	9	0.4						
lotes																
0100	acity			eeds 3			putatior		<u>n</u> 1	+	majorv	<u> </u>				

Future Background (2022) PM WSP Canada Inc.

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Intersection															
Int Delay, s/veh	1.5														
Movement	EBL	EBT	WBT	WBR SB		BR									
Lane Configurations	ሻ	ŕ	<b>^</b>	<b>R</b>	den mar an a fairte.	service and the service of the servi		e de la companya de la companya de c						uder das Saude Histore	
Traffic Vol, veh/h	99	735	295	y des la sector de la constante	6	78									
Future Vol, veh/h	99	735	295		6	78	er an been alaska soo	e (lado (positiva prim						62262265	
Conflicting Peds, #/hr	_ 2	0	0	a para da seri per processo de la construcción de la construcción de la construcción de la construcción de la c	2	1									
	Free	Free	Free	Free Sto		Stop	onelas entre estas		anan ang kang kang kang kang kang kang k			en e		7000000000	
RT Channelized		None	807 ( <b>.</b> 7)	None	- N	one								0140246	
	1250 #	- 	- ^		0	- 			ar anns Ar		cienserien				
Veh in Median Storage,	# -	0 0	0 0	eren an general er de strene en de	0										
Grade, % Peak Hour Factor	100	100	100	- 100 10		- 100	in an								
Heavy Vehicles, %	001	100 0	001		0	0		김 분석의 문화의			6494499444		4949-339-339	1999 (1999) (1999 (1999 (1999 (1999 (1999 (1999 (1999 (1999)	
Mvmt Flow	99	735	295	and a second state of a state of the	6	78									
	33	100	200	Sector Materials	V					en ner ner ver	0.999.999.979 1	80.000.000.00	vers server og som	989 (80 B B B B B B B B B B B B B B B B B B B	
N 1 1 10 11 11 11 11 11				11	<u></u>								<i></i>		
	lajor1		lajor2	Minor				<u> </u>							•
Conflicting Flow All	300	0	-	0 123		300									
Stage 1	in stansbirt sk	era esta sur	ionenile idead	29	nesatores a	en de la companya de La companya de la comp	e weeden woorsen Genoviche	innig segen and	anning rectored the	and the Advisor					
Stage 2	- ******	- (9)(2228)(93	- 2000-000	- 93 - 6		- 6.2					4624645V		yon singi	6866030	
Critical Hdwy	4.1	17-01-9 <b>5</b> -0	8168.64	- 5		0,2				den den de la c					
Critical Hdwy Stg 1 Critical Hdwy Stg 2	- 1030584			- 5		- 1999-1999			Sveniko den						
Follow-up Hdwy	2.2	949999 <b>7</b> 49 -	94494 <b>7</b> 3	- 3.		3.3									
	1273			- 19		744						kan southolin Southeast		hadalari Manaziri	
Stage 1		946946aun -	(989999669) -	- 75	ig for an or other t		SCECCEURS SE	una serana a			ngazen dataten	enter en enterenter Enterenterenter	alla an	8589999999	
Stage 2				- 38											
Platoon blocked, %	2019320120204		• 2000 (2003) (2	- -	u <del>n</del> ayaya k	orana an	an a			-sanado Beorgad	engegennengennen		APROLOMICA DO	yes en rennen.	
	1272			- 18	31	742									
Mov Cap-2 Maneuver	des esterna este •	-	-	- 18	Charles and a second										
Stage 1		londona <b>t</b> re		- 75	56			u en dec Xôn o							And an
Stage 2	-	*		- 35	54	-									
				oles operation (specially											
Approach	EB		WB	S	B										
HCM Control Delay, s	1		0												-
HCM LOS	99091000		ala se se Ta		В			1999-9499-9999 1999-999-999-999-999-999-999-999	enterstetetetetetetetetetetetetetetetetete	estan kaline yana i	undhung tig grife		an san ceyacara	1929 C. 1971 C. 1972	
Minor Lane/Major Mvmt		EBL	EBT	WBT WB	IR SE	lint									
Capacity (veh/h)		1272	-			608									<u>87.</u>
HCM Lane V/C Ratio		0.078				.138		u	en e	pertanta di Bali Pertangan di Bali Pert Pertangan di Bali Pertangan di Bali Pertang	saanaa ka k	922999299999999999 9229999	uersentiinii):	40040994090	
HCM Control Delay (s)		8,1		i de la compañía de l Compañía de la compañía de la compañí		11.9			in de Cinter Servisivier						
HCM Lane LOS		A.		anger (na far ta		B	en stande fan de ferste skiele ste skiele ste ste ste ste ste ste ste ste ste st	eren ang kanadala	en an	essanter 1878-1879 A	un entre anti-anti-anti-anti-anti-anti-anti-anti-	er og en ster ster forstaller forstaller forstaller forstaller forstaller forstaller forstaller forstaller fors	n proprio de la composition.	anna guinn ann ann	
HCM 95th %tile Q(veh)		0.3	2/3/9 <b>2</b>			0.5									
	unstaatistai.	centres7.877.488	ormanii yeshin	a see sanaan karan barran 1999 ka		an na star (Tabla (T Tabla (Tabla	a an an taon an Anna Anna Anna Anna Anna Anna Ann	un den nogerendet fo	en e	ayaa ay ah dhadhadhadhadhadhadhadhadhadhadhadhadhad	enne star e star fan Star St				



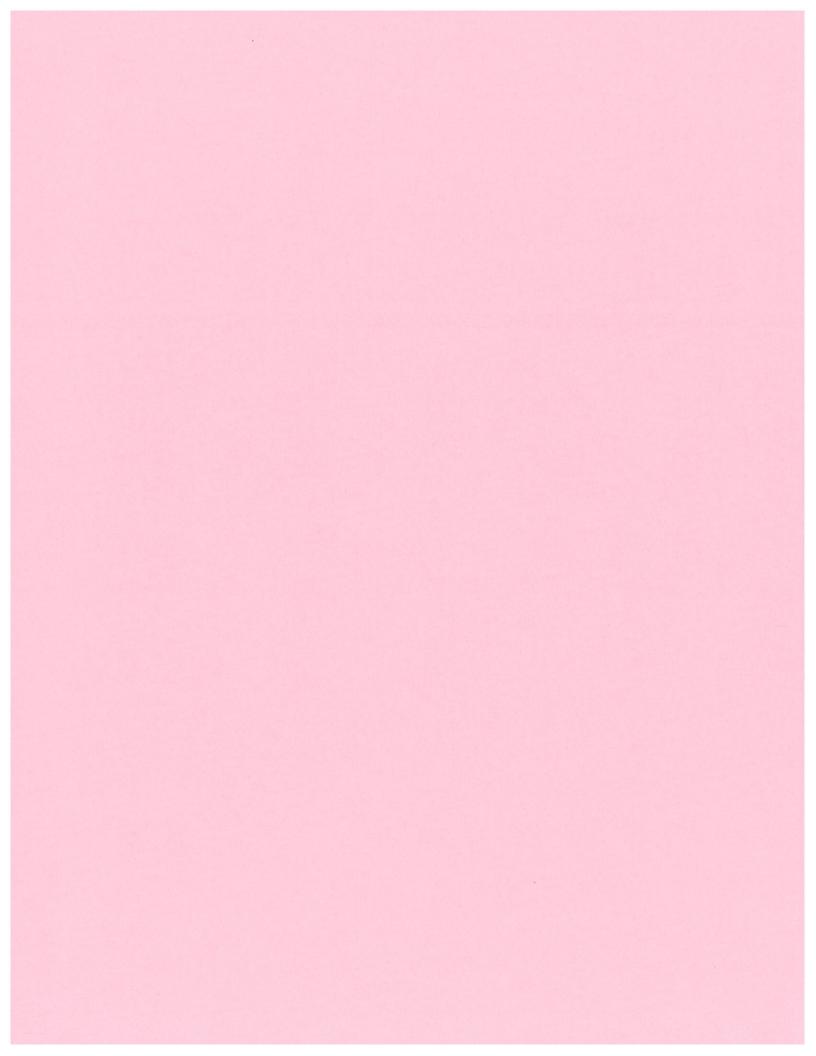
Intersection																
Int Delay, s/veh	1.3															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	ሻ	<b>ĵ</b> >		ሻ	4			4		ሻ	4	and the second and the second seco			and the second second second	warana kata
Traffic Vol, veh/h	41	180	7	1	468	221	11	8	0	18	1	12				
Future Vol, veh/h	41	180	7	1	468	221	<b>11</b>	8	0	18	<b>1</b>	12	es escalad	nahassa (sp.	namanina siya	ang
Conflicting Peds, #/hr	0	_ 0	_ 4	_ 4	0	0	0	0	2	2	0	0	9.91Ø			
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	9960974995	selonosii	1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927 - 1927	390393
RT Channelized	F00	ersonie e	None	400		None		gudu đ	None	000		None		1051/69/46		6506365
Storage Length Veh in Median Storage	500 #	- 0	• 025920995	400	-0	- 1940-946	- 2000 <u>-</u> 0	- 0	-	200	- 0	- 1999- <b>-</b> 19	S. 4444.			Signi
Grade, %	,# • -	0	-	-	0	- -	-	0	-	-	0			215.5		
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100			10-13-13-13-13-13-13-13-13-13-13-13-13-13-	
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0			8500850/6504	NEMECH :
Mvmt Flow	41	180	7	1	468	221	<b>1</b>	8	0	18	1	12				
ULIMA AT LEASE		an a	00000000000000000000000000000000000000	8998222465746	388265.T.J.	99499 <del>000000</del> 9999	55555555555555555555555555555555555555	DELOCIENTIA.		SENERAL TAR	ngapopanti katari	000000000000000000000000000000000000000	29/20/22/27/22/22/22/22/22/22/22/22/22/22/22/	49027090970409970		99999966666 99999966666
Major/Minor N	Aniort		1	Major2		N	Ainor1			linor2						
Majør/Minor M Conflicting Flow All	<u>//ajor1</u> 689	0	0	191	0	0	857	961	190	853	854	579				<u>le des lin</u> t
Stage 1	009	U -	v -	121	· ·	- -	270	270	190	581	581	J13 -				
				-	Sec.22 (257)		-587	-691-	der en de la constation de	272	- 273					22012200
Critical Hdwy	4.1			4.1		59-159-059-0	7.1	6.5	6.2	7.1	6.5	6,2				
Critical Hdwy Stg 1	986799 <i>89</i>	-	\$%\$7X/%QHQ +	84788	-	- - -	6.1	5.5	- -	6.1	5.5		sasinda sinsata	960999000000000		NER ANGANY
Critical Hdwy Stg 2	9622 <b>.</b> 9	592-0 <b>-</b> .		9.63.8 <b>.</b> 3			6.1	5.5	8 G 🗘	6.1	5.5					
Follow-up Hdwy	2.2		-	2.2	-	-	3.5	4	3.3	3.5	4	3.3				
Pot Cap-1 Maneuver	915		•	1395			280	258	857	281	298	519				
Stage 1	-	-	-	-	-	-	740	690	-	503	503	-	and the second second to	a mandata ata ang mang mang mang mang mang mang mang		
Stage 2			-				499	449		738	688	2				
Platoon blocked, %	sector sector	-	•	a georgeologia	<b>-</b>	-	an a	and an other states and an			we energy	ana ing pangkang sa	en de la competencia br>La competencia de la c			8-88-80 S.
Mov Cap-1 Maneuver	915	•	909/0 <b>-</b> 0	1393	- 10		262	245	853	264	283	519				
Mov Cap-2 Maneuver	• 840003945	• 2013/03/03/03	- 2015/2020/202	- 2013-00500	- 1998/1998	- 09/38//292	262	245	+ 22/22/29/2	264	283	- 1949-1910-1940	gagarij	sanserier.		
Stage 1		1.03-05 <b>-</b> 1				6.08.00	704	657 449		480 - 695	503 655					
Stage 2	- 		-			-	-486	449		- 090-	000					
			SUBBUIGH							lis de la cista companya		459.2550.2950.				elie elev Reneran
Approach	EB			WB			NB			SB						
HCM Control Delay, s	1.6			0			20.3			16.7	19 A A					
HCM LOS			uneradar	ennederad	ana ana an	1090093990	С	eweshdeid	93434444	С	serinainata					
				0.62.52.4		io internet		8.00.080	67.654.694	2035-50	659 - 260 GR				99. ISBN 91.1	
Minor Lane/Major Mvm	t M	VBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1 S	SBLn2						
Capacity (veh/h)		255	915			1393	90 (S S <b>S</b>	•	264	488			6.89		19.03 (S)	
HCM Lane V/C Ratio	a san san an an a		0.045	•	••	0.001	-	-		0.027	er son son son son	ender of examples of the		a an ann an thairt a star a th	an a	server -
HCM Control Delay (s)		20.3	9.1		5 <i>6</i> .	7.6		Welley and	19.6	12.6				s à â		
HCM Lane LOS	SALLERA INSTITUT	С	A	- 	- 	A	- 59050560000	-	С	В		an a	saddalwiani		contra Maria	
HCM 95th %tile Q(veh)		0.2	0.1			0			0.2	0.1					ogo szár teren Leter keren keren	

Intersection				
Int Delay, s/veh	2.1			
Movement	EBL E			
Lane Configurations		<u> </u>	¥	
Traffic Vol, veh/h	an an an tha an tha tha tha tha an an tha	23 698 24	Selection and a state of the selection of t	
Future Vol, veh/h		23 698 24		
Conflicting Peds, #/hr	_ 0 _	0 0 0	el presenta de la contra este presente esta de la forma	
Sign Control	Free Fr			
RT Channelized	- Noi 1250	ne - None	••••••••••••••••••••••••••••••••••••••	
Storage Length Veh in Median Storage,		0 0	and a second stand a second second second second beam	
Grade, %	• #1999 7, orde 199 _	000	a a tara da tar	
Peak Hour Factor	100 1	00 100 100		
Heavy Vehicles, %	0	0 0 0	and the second second second second second second	une gen betre treben up dig det te by anglister to start for the one of the test start of the test of the test I
Mvmt Flow		23 698 24		
an a	1	ang mang ana atau atau atau atau katan	en nya baha na atan tina tina tina dina dina dina dina dina dina dina d	
Major/Minor N	Aajor1	Major2	Minor2	
Conflicting Flow All	722	0 - 0		
-Stage 1	 1997 - 1993			
Stage 2	•	'	- 233 -	
Critical Hdwy	4.1		- 6.4 6.2	
Critical Hdwy Stg 1	-		- 5.4 -	
Critical Hdwy Stg 2			- 5.4 -	
Follow-up Hdwy	2.2		- 3.5 3.3	
Pot Cap-1 Maneuver	889		- 294 437	
Stage 1	- Natura Maharananan	en de la compañía de	- 491 -	
Stage 2		•	- 810 -	
Platoon blocked, %	889		- - 276 437	
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	- 009	dhallaichteallaite (d. d	- 276 -	
Stage 1	- 2005 - <b>-</b> 2005		- 491 -	
Stage 2	2)/2/22/22/22 -		- 760 -	
Approach	EB	WB	SB	
HCM Control Delay, s	2.9	0	16,3	
HCM LOS		· · · · · · · · · · · · · · · · · · ·	C	
			-	
Minor Lane/Major Mvm	t E	BL EBT WB	WBR SBLn1	
Capacity (veh/h)		- 98	418	
HCM Lane V/C Ratio	0.0	en de la completa en la completa de	0.239	
HCM Control Delay (s)		9.3 -	16.3	
HCM Lane LOS		Α -	C	
HCM 95th %tile Q(veh)		0.2 -	0.9	

Intersection																
Int Delay, s/veh	29.7															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	ሻ	Ъ		ኘ	4			4	~~~~~~	ሻ	4		en alternatione		soleneze sonos	an a
Traffic Vol, veh/h	4	681	8	0	368	- 34	i 11	3	3	231	3	81				
Future Vol, veh/h	4	681	8	0	368	34	11	3	3	231	3	81	Maritana	sia sintenta	oyaş (vela)	e and a technological design of the
Conflicting Peds, #/hr	0	0	2	2	0 Eroo	0	2 Stop	0 Stop	2 Stan	2 Stop	0	2 Stop		da Gastal	S. 49 E	2021-21
Sign Control RT Channelized	Free	Free	Free None	Free	Free	Free None	Stop -	Stop	Stop None	Stop	Stop	Stop None	689459A			unas (g.
Storage Length	500	h Status	-	400	8009049849 -		1.119 (1.129 (1.157)(1.157)(1.157)(1.157)(1.	00.69.5% •	- 140110	200	- -	- INONE	vizioni in 1		Reddanie.	ananan ka
Veh in Median Storage,		0			0			0			0	19 in <b>-</b> 1			a a g	
Grade, %	lationess =	0	61855705506 <b>-</b>	-	0	-	•	0	-	-	0	•			geonika derde	
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100				
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0	a a marta da secue a ta	ant control where the second	the states that a state	turner tetilledat
Mvmt Flow	4	681	8	0	368	34	11	3	3	231	3	81				
	/lajor1		N	lajor2		1	Ninor1			Minor2						
Conflicting Flow All	402	0	0	691	0	0	1124	1097	689	1083	1084	387		andarmeraa	and the second second	dimbol a ser
Stage 1			lan Star	Santa	-		695	695	<u>.</u>	385	385					
Stage 2	-	- 9/9/55/54/9/6	-	- 	-	• 900-80-9269/	429	402	-	698	699	-				
Critical Hdwy	4.1	- 	2080 <b>-</b> 13	4,1			7.1	6,5	6.2	7.1	6.5	6.2				
Critical Hdwy Stg 1	- 	-	-	-	-	-	6.1 6.1	5.5 <b>5.5</b>	-	6.1 6.1	5.5 5.5	-				
Critical Hdwy Stg 2 Follow-up Hdwy	- 2.2	6///2002-03 -	-	2.2	-	-	6.1 3.5	ວ.ວ 4	- 3.3	0.1 3.5	5.5 4	- 3.3				
Pot Cap-1 Maneuver	1168			913			184	215		~ 197	219	665				
Stage 1	974661117227.83	9999:53%5 -		967.1.N.S.	9009999599 <del>-</del>	800851/65943 •	436	447	erenden men ko	642	614		ansainni	9999999999999999999999999999999999999 1999 -	1941114457755575	asiragi (1846).
Stage 2		_					608	604	s. s	434	445	- S				
Platoon blocked, %		•	- n.o.m.1609/953 	e, , , , , en de la tradición	-	-										
Mov Cap-1 Maneuver	1166	9 80 Q <b>.</b> - 9		911	60.00 c.• .		159	214	a series de la constante de la	~ 193	218	664				
Mov Cap-2 Maneuver	- masantara	- 	- Madadarakanan	- Nashabaran	- 	-	159	214	- 	~ 193	218	-	an ing kanalakan kan		Districture	
Stage 1	1.16) (6 <b>.</b> 7.8	1.50.55		6199995 6199955	9.1997/19 <b>9</b> 7		434	445	60 (19) (B)	640	614	101-112 <b>-</b> 36	NSI ASUS		e e e	Geneende.
Stage 2	- 969-0016	- 00600500	- 1919-1914	- 0790868	- 9.096.000		530	604	- 2020-00	426	443	-				
Approach	EB			WB			NB			SB						
HCM Control Delay, s	0			0			25.9		Gran da	133.3						
HCM LOS	Antokosztakos	un antici a constanta da	and the states		SANGGAN	ustanta anti-	D	arinisen atalan		F	estettet	ana	Mana kana kana kana kana kana kana kana	andar dirada		
				olista on o olista on o		999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 2000 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 2000 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		alenna Alenna							angeren Generation	
Minor Lane/Major Mvmt	t M	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2						
Capacity (veh/h)	-3-3-3	189	1166	- N	•	911	•	18 S -	193	619	6.0.0				9 9 S	
HCM Lane V/C Ratio	a ta ta mana ta ta mana ta ta mana		0.003	-	-	-	-	-	1.197		September 1997 (* 19	anda a tabé m	an a	ann an ann an		
HCM Control Delay (s)		25.9	8.1			0		egologiaeth Bhuaithreisin	177.5	11.7			an GAO Managan		en de 1999 Sectiones	
HCM Lane LOS	a dhe an tar	D	A	- 	- 69063594644	A	- 	- 2011:22-112-11	F	В	an a					
HCM 95th %tile Q(veh)		0.3	0			0	<u> </u>		12	0.5						
Notes																
~: Volume exceeds cap	acity	\$: De	lay exce	eds 30	)0s -	+: Com	outation	Not De	efined	*: All	major v	olume i	in plate	oon		

Future Background (2027) PM WSP Canada Inc.

Intersection Int Delay, s/veh 1.6			
Movement EBL			
Lane Configurations	a sea a sea - i and anna - i anna a na a a an a anna a na a		
Traffic Vol, veh/h 109	wan is the book international to watch the state of the second state and the state of the second state of the s	ann a an a	
Future Vol, veh/h 109			
Conflicting Peds, #/hr 2 Sign Control Free	y hij de nega ega de been jilde de partijie de researger feitere de beide feitere de territer beider.		
		- None	
Storage Length 1250	e general a construction de la construction de la communitation de la construction de la construction de la con		
Veh in Median Storage, # -	- 0 0 - 0	) -	
Grade, % -	- 0 0 - 0	- A second se Second second s Second second se	
Peak Hour Factor 100	and a second	And we we we have a set of the second of the second state of the second of	
Heavy Vehicles, % 0 Mvmt Flow 109		0 0 7 86	
	1 110 300 3 1		
Major/Minor Major1	Major2 Minor2	)	
Conflicting Flow All 313			
Stage 1	312		
Stage 2	998		
Critical Hdwy 4.1			
Critical Hdwy Stg 1	5.4		
Critical Hdwy Stg 2	5,4 2 3,5		
Follow-up Hdwy 2.2 Pot Cap-1 Maneuver 1259			
Stage 1	747		
Stage 2	360		
Platoon blocked, %	+		
Mov Cap-1 Maneuver 1258			
Mov Cap-2 Maneuver	161		
Stage 1 Stage 2	746 328		
Jiage 2		• •	
Approach EE	3 WB SI	B	
HCM Control Delay, s			
HCM LOS	E	В	
Minor Lane/Major Mvmt		R SBLn1	
Capacity (veh/h)	ANAL TARA SANDAR SANDARA SANARA SAN	- 577	
HCM Lane V/C Ratio		- 0.161	
HCM Control Delay (s)	8.1	- 12.4 - B	
HCM Lane LOS HCM 95th %tile Q(veh)	A 0.3	- B - 0.6	
	0.0	ViV	



	٨		>	1	4	Ł	4	Ť	1	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٣	f)		٣	AÎ			\$		ኘ	1	
Traffic Volume (vph)	40	298	6	1	733	260	10	8	0	27	1	11
Future Volume (vph)	40	298	6	1	733	260	10	8	0	27	1	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.2	5.2		5.2	5.2			5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00		1.00	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	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			1.00		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1729	1814	1992 - 1997 - 1997 - 1997 - 1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997	1721	1749			1771		1723	1570	
Flt Permitted	0.15	1.00		0.57	1.00			0.86		0.75	1.00	
Satd. Flow (perm)	277	1814		1042	1749			1574		1353	1570	
Peak-hour factor, PHF	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. Flow (vph)	40	298	6	1	733	260	10	8	0	27	1	11
RTOR Reduction (vph)	0	1	0	0	14	0	0	0	0	0	9	0
Lane Group Flow (vph)	40	303	0	1	979	0	0	18	0	27	3	0
Confl. Peds. (#/hr)			4	4					2	2		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	i Contra de	Perm	NA	19 IV IV IV	Perm	NA	5.4.6	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	40.5	40.5		40.5	40.5			10.2		10.2	10.2	
Effective Green, g (s)	40.5	40.5		40.5	40.5			10.2		10.2	10,2	
Actuated g/C Ratio	0.66	0.66		0.66	0.66			0.17		0.17	0.17	
Clearance Time (s)	5.2	5.2		5.2	5.2			5.2		5,2	5.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	183	1202		690	1159			262		225	262	
v/s Ratio Prot		0.17			c0.56						0.00	
v/s Ratio Perm	0.14			0.00				0.01		c0.02		
v/c Ratio	0.22	0.25		0.00	0.84			0.07		0.12	0.01	
Uniform Delay, d1	4.1	4.2		3.5	7.9			21.4		21.6	21.2	
Progression Factor	1.00	1.00	19969 1996 1996 1996 1996	1.00	1.00		, , , , , , , , , , , , , , , , , , ,	1.00	- - -	1.00	1.00	
Incremental Delay, d2	0.6	0.1		0.0	5.8			0.1		0.2	0.0	
Delay (s)	4.7	4.3		3.5	13.7			21.6		21.9	21.3	
Level of Service	A	Α		Α	В			C		C	C	
Approach Delay (s)		4.3			13.7			21.6			21.7	
Approach LOS		Α			В			С			С	
Intersection Summary HCM 2000 Control Delay HCM 2000 Volume to Capa	city ratio		11.7 0.70	н	CM 2000	Level of S	Service		В			
Actuated Cycle Length (s) Intersection Capacity Utiliza	tion		61. <b>1</b> 74.9%		im of lost U Level c	time (s) If Service			10.4 D			
Analysis Period (min)			15									

c Critical Lane Group

Intersection	17.4															
Int Delay, s/veh	17.4									****						
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	ሻ	€Î			4			4		anan dalam dalam sara	4				a a a a a a a a a a a a a a a a a a a	en de la come
Traffic Vol, veh/h	60	219	26	<u> </u>	874	21	97	0	5	7	0	115	6.68			
Future Vol, veh/h	60	219	26	<b>1</b>	874	21	97	0	5	7	0	115	ondervalitets enter	ana ang sarang sa	ana ang ang ang ang ang ang ang ang ang	residente.
Conflicting Peds, #/hr	0	0	0	_ 0	0	0	0	0	0	0	0	0		usuususi		Sector.
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	050935430	nes de la com		\$20 <del>2</del> 670
RT Channelized			None			None			None			None				in an
Storage Length	1250	-	- 0.00000000	- 80000088	-	-	•	-	- 	- 1999-1999-1999	-	- 1				50.5A
Veh in Median Storage	, # •	0		9449949 <b>.</b> 4	0	9 (9 S <b>-</b> 1	- 100	0			0					
Grade, %	- -	0	-	- 100	0	- 400	- 100	0	- 100	- 100	0 100	-				
Peak Hour Factor	100 0	100 0	100 0	ana na sa	100 0	100 0	100 0	100 0	100 0	001	001 0	100 0	02900492			Sinten:
Heavy Vehicles, % Mvmt Flow	60	219	26	0 1	874	21	97	0	5	7	0	115				52/0500
	DU	219	20	888. <b>D</b> a	0/4	41	97	V	G	Staniku ka	U	110				Malosii.
												under an				******
Major/Minor	Majort			Major2		١	Ainor1			Minor2						
Conflicting Flow All	895	0	0	245	0	0	1296	1249	232	1242	1252	885		a na mantanita industria		otation autoria
Stage 1	a nas secon						352	352	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	887	887					
Stage 2	-	-	-	-	-	-	944	897	-	355	365	-	ler war rectance		-	
Critical Hdwy	4,1	-		4.1			7.1	6.5	6.2	7.1	6.5	6.2				
Critical Hdwy Stg 1	<del>.</del>	+	•	+	-	-	6.1	5.5	-	6.1	5.5	-	nalinini mag	Somerika (Secolar)		sace da ser tra
Critical Hdwy Stg 2	•	•	6996	6 (g) ( <b>-</b> )		1974 ( <b>*</b> 1	6.1	5.5	ē. (* •	6.1	5.5	1828 • J		1977 (S. 198	de la teles	
Follow-up Hdwy	2.2	- 	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	ana ang ang ang ang ang ang ang ang ang	ooraan Bastanaa	Alashing operatio	si-a vaeraa.
Pot Cap-1 Maneuver	767			1333		1	140	175	812	153	174	347				Gentles,
Stage 1	- -	- 	- сметриории	- 	- 6/4/26/4/54/0	-	669	635	- 	341	365	- 		a an		etatea.
Stage 2							317	361		666	627	-				
Platoon blocked, %		- 2002-0-02	+ 2428-0247		<b>ب</b> المحمد المحمد	• 		201 <b>6</b> 78	-	- 140			999/02/28-0			6202004
Mov Cap-1 Maneuver	767	•	•	1333	•	•	~ 88	161	812	143	160	347				
Mov Cap-2 Maneuver	- Seacaradores	- 202232200	- 2005:40:20:2	- 976996699	- 201052010250	- 50507555555	~ 88	161	- 223122572255	143	160	- 	8005035		59/0852/1844	
Stage 1	0/2045 <b>-</b> 0	8080.0 <b>5</b> 0		States	0.080.95		617	585	8. (20 <b>.</b> 5)		365		is na na na	Suite du	960.694.695 •	
Stage 2	- 975996499	- 1968-1288	- 5/32///6/0	- S <i>ider</i> on			212	361	- 64.050.0660	610	578	- 	SO EX (5)			Maria
															alagi Alina Alina Alina Alina	
Approach	EB			WB			NB			SB						
HCM Control Delay, s	2			0			210.4			22.9						
HCM LOS	1997 - 1997 - 1997 (n. 1977) 1997 - 1997 - 1997 (n. 1977)						F		1997-9997 (1999) (1997-997)	С			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Minor Lane/Major Mvm	<b>τ</b> Λ	VBLn1	EBL	EBT	EBR	WBL	WBT	WBR.	SBI n1							
Capacity (veh/h)	ı seri	92	767	- 102%		1333	-		321		<u>110/110/110/01</u>					
HCM Lane V/C Ratio		92 1.109		99099995 <b>-</b> 99		0.001	- 1022 -	-	0.38					<i>an 201</i> 0		
HCM Control Delay (s)	yngugi G	210.4	10,1		Nigola	7.7	- 0	-	22.9				999999	(Alexandria)		
HCM Lane LOS	n de Sta	210.4 F	B	96959730n _	sonsentitek	7.7 A	A	9575(07)594	<u>د ۲۲ کې</u> C	1999	nd weißen Se		edelindel St	ann an Anna an Anna an Anna an Anna br>Anna Anna	a an	en an
HCM 95th %tile Q(veh)		г 6.8	0.3			<u> </u>	· ·		1.7							
•		ViV		20030550 	2023-578 	Y					-200323-99 	and and an and a second se Second second				ana an
Notes																
~: Volume exceeds cap	acity	\$: De	lay exc	eeds 30	)0s ·	+: Comp	outation	Not De	efined	*: All	major v	/olume ii	n plato	n		

-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon

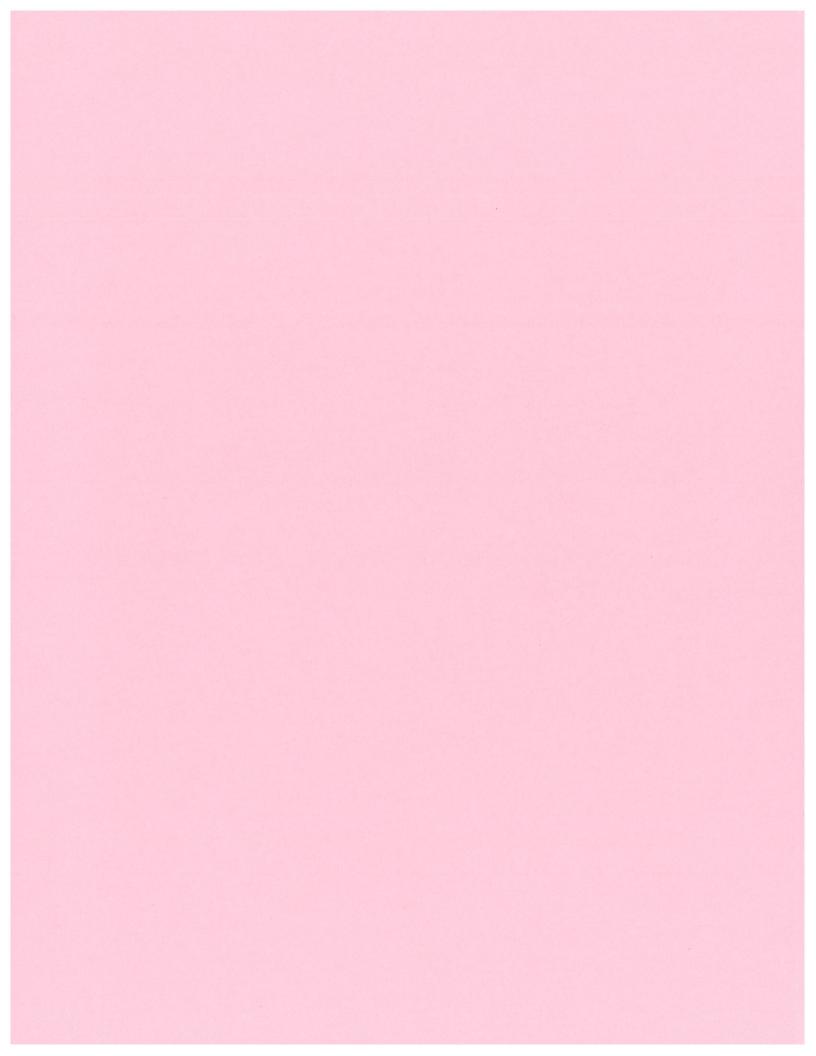
Intersection Int Delay, s/veh 0 EBT Movement EBR WBL WBT NBL NBR ř Lane Configurations Þ 个 897 Traffic Vol, veh/h 213 0 19 0 0 Future Vol, veh/h 213 19 0 897 0 0 0 0 0 Conflicting Peds, #/hr 0 0 0 Stop Sign Control Free Free Free Free Stop **RT** Channelized None None • None -Storage Length 0 -\_ -Veh in Median Storage, # 0 0 0 ŝ Grade, % 0 0 0 Peak Hour Factor 100 100 100 100 100 100 0 0 0 0 Ó Heavy Vehicles, % 0 Mvmt Flow 213 19 0 897 0 0 Major1 Major2 Minor1 Major/Minor **Conflicting Flow All** 0 0 223 ---٢ Stage 1 . . Stage 2 \* . . ---6.2 Critical Hdwy -Critical Hdwy Stg 1 -----. Critical Hdwy Stg 2 . • Follow-up Hdwy 3.3 ---. Pot Cap-1 Maneuver . 0 0 822 0 Stage 1 0 . ... --Stage 2 j 0 0 -Platoon blocked, % . --Mov Cap-1 Maneuver . 822 Mov Cap-2 Maneuver ----Stage 1 . ۲ • • . Stage 2 \_ --. --NB Approach EB WB HCM Control Delay, s 0 0 0 HCM LOS А Minor Lane/Major Mvmt EBT EBR WBT NBLn1 Capacity (veh/h) 1 1 1 HCM Lane V/C Ratio --.... \_ HCM Control Delay (s) 0 • • HCM Lane LOS A -

HCM 95th %tile Q(veh)

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	4			<b>^</b>		ሻ	
Traffic Vol, veh/h Future Vol, veh/h	201 201	11 11	0 0	897 897	0 0	0 0	
Conflicting Peds, #/hr	201	0	0	097	0 0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized		and a set for the second of the		None		None	
Storage Length	-	leatain sa setteme di 16 =		•	•	0	
Veh in Median Storage,	# 0	2 B/S - S	8.6926 <b>.</b> 8	0	0		
Grade, %	0	-	<b></b>	0	0	- 6.12000000000000000000000000000000000000	
Peak Hour Factor	100	100	100	100	100	100	
Heavy Vehicles, %	0	0	0	0	0	0	
Mvmt Flow	201	11	0	897	0	0	
	¥		1 · · ·		1* 4		
	lajor1		Major2	n	Minor1	007	
Conflicting Flow All Stage 1	0	0	- 1999-1995-1995 -	-	- 509/1903	207	
Stage 2	-						
Critical Hdwy	18.62					6.2	
Critical Hdwy Stg 1		•			-		
Critical Hdwy Stg 2	1.		6-1612 <b>-</b> 165	01840 <b>.</b> -0	-	•	
Follow-up Hdwy	-	-	-	-	-	3.3	
Pot Cap-1 Maneuver		andalaring Guidenia	0		0	839	
Stage 1	- 10500156100	-	0	- 2018-2018	0	-	•
Stage 2		1998 <b>-</b> 9	0	-	0		
Platoon blocked, % Mov Cap-1 Maneuver	- 	-		-		839	
Mov Cap-1 Maneuver		-	506005799 -	-	-		
Stage 1	i componia Menzor de		•			-	
Stage 2	-			-	•	-	
Approach	EB		WB		NB		
HCM Control Delay, s	0		0		0		
HCM LOS	la estat sel sent terrar	enti mi incedi dal	e ta transfer a transfer to te	al ad a distant on Carriera	A	sa 6400 merek 600	
Minor Lane/Major Mvmt	1	VBLn1	EBT	EBR	WBT		
Capacity (veh/h)		0.898-0	0.226-0	- 18 (C• )	•		
HCM Lane V/C Ratio	enangasena	+ 	- Netroningation	- 	- ento-coldener	unanasta	
HCM Control Delay (s)		0		6.678 <b>.</b>			

HCM Lane LOS A - - -HCM 95th %tile Q(veh) - - - -

Intersection													
Int Delay, s/veh	1.5												
Movement	EBT	EBR	WBL	WBT	NBL	NBR				- 14 14 14.			
Lane Configurations	<u>, 10⊐</u> €Î	1212911	T Lo be	<u>নার্ট</u> ধ্রী	<u>برد</u> ۲۲	ALC: N							
	м 161	40	ŋ	শ 828	-T- 69	3							
Traffic Vol, veh/h		a set to set down as	2	828	69 69	second second second		perta esta esta esta esta esta esta esta es	Annab Annab.	an an Anna		000000000000	
Future Vol, veh/h	161	40	2 0		09	3 0							
Conflicting Peds, #/hr	_ 0	0	enter de la constance de la con	0									
Sign Control	Free	Free	Free	Free	Stop	Stop		en e	ender Herlenik	yanan manan			
RT Channelized		None		None		None					102049446	en de la compañía de Compañía de la compañía	
Storage Length	- 1995-120	- 2010-11-12-020	- svecetete.	-	0	- 1999-1999	yehne en e	nave e contre e			1086/08/4/2023	9407899999946	ense standere
Veh in Median Storage,				0	0								un an standiger. Geologie and standiger. An an
Grade, %	0	<b>-</b> «ا <b>لدسار</b> : (20)	يە. -مۇغۇرەن	0	0	- اختر د ان	e i ja je postala kao se stati	NARA (DARA)	Server an and a s	0.000		al sa bahar	
Peak Hour Factor	100	100	100	100	100	100						학교 철상 측별	
Heavy Vehicles, %	0	0	0	0	0	0	un nyaéta kalan tanàn di kara karang	an a	an dha ann an a		udefateren er m	en fremenia est	ontessenten Antessenten
Mvmt Flow	161	40	2	828	69	3							
Major/Minor M	lajor1	١	Major2		Minor1								
Conflicting Flow All	0	0	201	0	1013	181							
Stage 1		Seguite		1998 - 1998 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	181			n de conten	6.68.68.64				courtes a
Stage 2	e 995-105740 -	•	••	-	832	-		en an	en genergen gestigt som	eragetter Teylori	a accester platica "Dià di	nn sy staat an 1960 i Milijang	orew constrained in the second se
Critical Hdwy			4.1		6.4	6.2							
Critical Hdwy Stg 1	99999999 <b>-</b>	2019-979-9794 -	949904 - 199 -	289333349 -	5.4	en se	unu proteiniteitei	an a	a di Angan di Anana Angala. Angan di Angana Angala di Angal	aritikKabilaji	y te galer y Cliffer V d.	na parabrita	naga ng sang si (sa
Critical Hdwy Stg 2					5.4								
Follow-up Hdwy	464366 •	999999999 -	2.2	1999 (2013) -	3.5	3.3	an a	ang fili ana sa	an a	and an	person estadorado y	angan yangalar T	pu sta spruckých.
Pot Cap-1 Maneuver			1383		267	867		antan seria seria Pendenan karan					
Stage 1	94994655	900099999999 9	1000	099288355 -	855	- 007	erana gana gana da	eresente (BD)		ender (1999) A		-1999 - 1999	ennende.
Stage 2	- 9999999	-	- 20/02/02	- 1999-1992	431	- 							
Platoon blocked, %	999999999	2017/07/979 -	en en herre o	989/1997- -	SOTY!	69999		energeteletetetetetetetetetetetetetetetetete		a selena e e e e e e e e e e e e e e e e e e		un an an Anna Anna Anna Anna Anna Anna A	inkoiselidelid
Mov Cap-1 Maneuver	- (1990)	- 	1383		266	867							Guiselin
	Histor I.		1000	-	266	007						9499394889 94993	
Mov Cap-2 Maneuver	-	-	-	•	855	-							
Stage 1			en Maria		430	1998 - <b>1</b>				ensi Sit			9983131) ,
Stage 2	- 599/854	- 1998/9999	- 1911-1911-1911	- 15//15//57/	430	- 19/192/19/	ugugugugugu					<i></i>	<i>051420</i> 1820
		Solimikai.			AN AN AN		a sa		senten Sei	ion in 1894).		ensenter de	
Approach	EB		WB		NB								
HCM Control Delay, s	0		0		22.8								
HCM LOS					С								
Minor Lane/Major Mvm		NBLn1	EBT	EBR	WBL	WBT							
Capacity (veh/h)		274			1383								
HCM Lane V/C Ratio		0,263	strait.		0.001		anga mangabara (2013)			an tractificitati			essentinen.
HCM Control Delay (s)		22.8	- 899992		7.6	0							
HCM Lane LOS			9999999 <b>5</b>	000000 <b>.</b>		U A		gelen den (BB)	en an Marian An	an ta tha tha tha tha tha tha tha tha tha	ngan Halland		
		C 1	- ()))))))		A 0								
HCM 95th %tile Q(veh)		geologia Vi		are and a series	U	an a							



	٨		•	*	-	*	4	1	p	1	Ļ	4
Movement	EBL	EBT	EBA	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٣	f)		ኻ	₽			ф		ሻ	<b>(</b>	
Traffic Volume (vph)	4	741	8	0	461	48	10	3	3	264	3	76
Future Volume (vph)	4	741	8	0	461	48	10	3	3	264	3	76
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.2	5.2			5.2			5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00		1.00	0.98	uru e trade turbacteria
Flpb, ped/bikes	1.00	1.00			1.00		18 S 8	1.00		1.00	1.00	
Frt	1.00	1.00			0.99			0.97		1.00	0.86	
Fit Protected	0.95	1.00			1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1729	1817			1794			1710		1724	1523	
Flt Permitted	0.38	1.00			1.00			0.87		0.75	1.00	
Satd. Flow (perm)	695	1817			1794			1529		1356	1523	
Peak-hour factor, PHF	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. Flow (vph)	4	741	8	0	461	48	10	3	3	264	3	76
RTOR Reduction (vph)	0	1	0	0	6	0	0	2	0	0	53	0
Lane Group Flow (vph)	4	748	0	0	503	0	0	14	0	264	26	0
Confl. Peds. (#/hr)			2	2			2		2	2	9022	2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	30 (Se (S) (S	Perm	NA	
Protected Phases	4444 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	4	nea però attritta a	, et es pliten en déplite et de	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.9	24.9			24.9			15.3		15.3	15.3	
Effective Green, g (s)	24,9	24.9			24.9			15.3		15.3	15.3	
Actuated g/C Ratio	0.49	0.49			0.49			0.30	1971-1971-1971-1972-1972-1972-1972-1972-	0.30	0.30	100000000000000
Clearance Time (s)	5.2	5.2			5.2			5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0			3.0	anda umanina funciona an		3.0		3.0	3.0	
Lane Grp Cap (vph)	342	894			882			462		410	460	
v/s Ratio Prot	ernerite Tal Tal	c0.41			0.28				te gele en statel de la terret. La terreta de la terreta	nije Sana Seder Reman	0.02	000000000000000000000000000000000000000
v/s Ratio Perm	0.01							0.01		c0.19		
v/c Ratio	0.01	0.84	enter anter anter anter Anter anter ante	adama ana ang ang ang ang ang ang ang ang an	0.57	asturktister av	tengan generation T	0.03	4609 (DOM (DOM ())	0.64	0.06	1697/10/10/10/17/01/
Uniform Delay, d1	6.6	11.1			9.1			12.4		15.3	12,5	
Progression Factor	1.00	1.00		ander der der der der der der der der der	1.00		alenger Karistoni.	1.00	al le certa de la cele	1.00	1.00	
Incremental Delay, d2	0.0	6.9			0.9			0.0		3.5	0.1	
Delay (s)	6.6	18.0	radia a cual a cual a c		10.0	499949999999999999		12.5		18.7	12.6	
Level of Service	Ā	В			Â			В		В	В	
Approach Delay (s)	1964 - 1967 -	17.9	020059400940	200200000000	10.0	natalan belan da karan An	****************	12.5	2000/2002/00/2002	umperentitationes T	17.3	004940309000000
Approach LOS		B			Â			В			В	
		alaran <b>H</b> ara									andarahan <del>t</del> an	
Intersection Summary							<u></u>					
HCM 2000 Control Delay			15.2	H	CM 2000	Level of S	Service		В			
HCM 2000 Volume to Capa	city ratio		0.76		unovány z izvány <sup>a</sup>	1919-000-01-02-00	anan sana ara		nan artista	con voissi anna	S SA GARAGE A GARAGE A	a negy to be the second
Actuated Cycle Length (s)			50.6		im of lost				10.4			
Intersection Capacity Utiliza	tion		72.5%	IC	U Level c	of Service	alego tetta tett	estationa de la	С			en e
Analysis Period (min)			15									

c Critical Lane Group

					•							
Intersection												
Int Delay, s/veh	8.3											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement		·//··./.···/	CDN	WOL		NOU	INDL		NON	ODL		חטט
Lane Configurations	ሻ	<b>4</b>	10	•	ф.	•	75	<b>4</b>	<u> </u>	•	<b>*</b>	70
Traffic Vol, veh/h	99	844	40	2	349	3	75	0	3	6	0	78
Future Vol, veh/h	99	844	40	2	349	3	75	0	3	6	0	78
Conflicting Peds, #/hr	_ 2	0	_ 0	0	0	_ 2	1	0	2	2	0	1∍ 1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized			None			None		999999 <b>-</b>	None	-	1940 - 240 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 - 1940 -	None
Storage Length	1250	- 	- -	- 	- 2000-00-00-00-00-00-00-00-00-00-00-00-00	- 	• 22242200	-	- 	- -	- -	- 
Veh in Median Storage	,# -	0	•	-	0			0	909 <b>-</b>	•	0	-
Grade, %	- 	0	- 	- 	0	- *********	Kateronia	0	- Sector i Circ	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	99	844	40	2	349	3	75	0	3	6	0	78
Major/Minor I	Major1		1	Aajor2		١	<b>Ninor1</b>		١	Minor2		
Conflicting Flow All	354	0	0	884	0	0	1457	1420	866	1423	1439	354
Stage 1							1062	1062		357	357	
Stage 2			5/48903624 <u>9</u> 5 <b>-</b>		-	-	395	358		1066	1082	- - -
Critical Hdwy	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	8969 v.e. 185	6466666666 -		8889,000	1993-1993-199 <b>-</b>		6.1	5.5		6.1	5.5	
Critical Hdwy Stg 2	-						6.1	5.5	-	6.1	5.5	
Follow-up Hdwy	2.2	- - -	•	2.2	ouroseeses -	- -	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1216		0.000.000.00 •	774	indisinanya Manana ma		109	138	356	115	134	694
Stage 1				eg 185 A (196 A). •	ores:06:5264 =	050000000000 -	273	303	0:::::::::::::::::::::::::::::::::::::	665	632	93996757699 <b>4</b>
Stage 2	109-92 <u>-</u> 0						634	631		271	296	19 S S
Platoon blocked, %	entren 1969 (S	ov de 200725 -		san sa katalah ka	2092200000000 =	(1)-121-121-121 +	a northain Taiphile.	estatuten Talaki	antaan Shishidd	ระบะจำหน่าไปปีสีสีขึ้	สุรรณ์เห <i>ลิม</i> สุนที่ได้	y ester politik (The
Mov Cap-1 Maneuver	1215			773	-	S (6 - )	90	126	355	106	122	692
Mov Cap-2 Maneuver	8855,6,77,699 •	99999999999999999999999999999999999999	•••	1915,0142306 •	-	-	90	126		106	122	
Stage 1			-		orozeniegi. Sredenie		251	278	1991-1991-1991- 1991-1991-1991-1991-199	609	629	
Stage 2	•	9/19/90096911 -					560	628	•	246	272	-
Arreach	rn			MID			MD			SB		
Approach	EB			WB			NB					
HCM Control Delay, s	0.8			0.1	01092622		133.6		62. BN 85.	13.7	661.621.63	1998 (SS 1989)
HCM LOS	anaiseasians	a. 		anata karak	50/05/05/95	an a	F	enadarada	un de la compañía	B	territeride.	osintinas.
								lan da vilan Sin Sin Sin	en de la com		energen en e	
Minor Lane/Major Mvm	it M	VBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)		93	1215	-	-	773	•		496			
HCM Lane V/C Ratio	en 1999 (1999) 1997 - Jacob Maria (1997)	0.839				0.003			0.169		ar an an Anna Stàitean an Anna Stàitean an Anna Stàitean Anna Anna Anna Anna Anna Anna Anna A	
HCM Control Delay (s)	at a second consistence of	133.6	8.2		ententeti.	9.7	0		13.7			
HCM Lane LOS	penteratura (B)	F	A	e	en test (37466) •	A	A		B	ooranayaana	aleria de la constanta de la	
HCM 95th %tile Q(veh)		4.6	0.3			0			0.6			
na anna ann an Annaista (1811)	an an Arbhairt	un 2005.777.787	erada. A	an y tariyiyi ayili	en de chekerker.	gen verskife.Tak	er an tea tha chair	esenettet eta dita.	u stette Te D-D-Ade	sectores (22 m	a shekara sheka Shekara shekara	ee en chestropolis I

									· · · · · · · · · · · · · · · · · · ·			
Intersection												
nt Delay, s/veh	0											
Novement	EBT	EBR WB	L WBT	NBL	NBR							
ane Configurations	4		个		٢							
Traffic Vol, veh/h	825	29	0 355	0	0							
Future Vol, veh/h	825	and a second	0 355	0	0		10.919.979.969.9199.109999 10.9219.979.969.9799					
Conflicting Peds, #/hr	0	0	0 0	0	0							
Sign Control	Free	Free Fre	e Free	Stop	Stop							
RT Channelized	- N	Vone	- None	-	None							
Storage Length	-	-		-	0				e a secondador a subsecond		an a thursan an an an an Adriana	
Veh in Median Storage,			- 0	0								
Grade, %	0	- 	- 0	0	ت. د د مشهر و در د	y Astronomica de	the state of the state	yan da wafatan da s		Anton Contracto		a dis
Peak Hour Factor	100	100 10	and the second second	100	100							
Heavy Vehicles, %	0			0	0			ya ya ya kata kata kata kata kata kata k				Ng Ka
Wymt Flow	825	29	0 355	0	0							
	Najor1	Major	2 N	Ainor1						<u></u>		
Conflicting Flow All	0	0		<b>-</b>	840	e bar dagger en ar datae mer	seegge operation, bare die werd in wee					999472-
Stage 1	199 ( <del>•</del> 14	ala d <b>e</b> de las		9 8 <b>-</b> 9	•							
Stage 2	- 	- 		- 	- Ser <u>2</u> r2789	A A Geogle Angel Marten Mart	an shini ka sa		onen er en	and standard also		1971 fe
Critical Hdwy					6.2							
Critical Hdwy Stg 1	- 201/201305197	- 	 	- 61.7677694	- 819111111111				sana ana an			- Sir
Critical Hdwy Stg 2	n an de <b>g</b> erste Geselen an de See			n de la M <b>ie</b> rri Statistica I	- 3.3							
Follow-up Hdwy	- 	•	 0 -	- ^	3.3 368							
Pot Cap-1 Maneuver Stage 1	070303. <b>-</b> 233 2473 - 446 2473 - 446	an bewalan waare een	0 -	0 0	000						VERIPART SET	9363
Stage 2	- 19.09.002.007		0 -	0	da 10 / 10 10							
Platoon blocked, %	9999995995 -	1999) - Torichiel -	.Maritana 78 -	0-20-203 <b>V</b> /83	9489197619 1	en generik fikkt		eren den Benterike G			e Cherterichii	ward?
Mov Cap-1 Maneuver				9 g. G	368							
Mov Cap-2 Maneuver	1660 (260 (260) -				-		y a ang ning tao ing Palantah T	anda sa si kasi ka	a an an an an an an Arlanda. An an	e y sterier in stille i stille	- 1949 - Carola Carola (Carolanda) - Carola (Carola	es 263
Stage 1	6.		•		8 a ÷ 6							
Stage 2	•				•		ng maganang mga na katalan kata T	a an				
an an an Anna a An Anna an Anna												
Approach	EB	W	B	NB								
HCM Control Delay, s	0		0	0								
HCM LOS	avo a Masi.	1999), et (1019) 4999) 	. An an an Anna Anna Anna Anna Anna Anna	A	ered 688	a en Magneria	e en staren (de la staffet) A	n gebrucht die kein.	na a stanen Aranda A		rten antea Arbéa Misédari I	eren er
Vinor Lane/Major Mvm	+ ////////////////////////////////////	BLn1 EE	IT EBR	WBT		eren obridde						
Capacity (veh/h)	r IVI		<u></u>	11/21								
HCM Lane V/C Ratio		1997-79938. -	950999999 <del>5</del> 9 	999-995-99 -	e per più	9 19 19 19 19 19 19 19 19 19 19 19 19 19						
HCM Control Delay (s)		Ō		-								
HCM Lane LOS	enerstrick	A			ennennenne.		and the second	esynee distant	parana si katika Kata	arganata Historiki Ma	n an an an Albailteach. An an Albailteach	
HCM 95th %tile Q(veh)												
nom oon vane a(ven)	anan an Sta		onnon Allowi		aichdeadd		ang ng kabalang kaba Kabalang kabalang kaba	yani ARAMANA M	ner an an an Anna Anna Anna Anna Anna Anna	entroppilititititi	en an the state of t	69799 1

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	Þ			<b>^</b>		*
Traffic Vol, veh/h	807	17	0	355	0	0
Future Vol, veh/h	807	17	0	355	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized		None	9-120-66 8-780-18-	None	-	See the sea of the sea
Storage Length	-	- 2012-00-00	+ 24422444	-	-	0
Veh in Median Storage		2000 <b>.</b> 0		0	0	•
Grade, %	0	- 400	- 100	0	0	- 100
Peak Hour Factor	100	100	100 0	100 0	100 0	100 0
Heavy Vehicles, % Mvmt Flow	0 807	0 17	0	355	0	0
WVIIIL FIOW	OU1		V	ാാ	U	U.
	Major1		Aajor2		Minor1	
Conflicting Flow All	0	0	<del>-</del> constantes est	-	+ Lanes Lectures	816
Stage 1	w.w.s.	an a	an des sins	and and a	6214) (2465) 884 (886) (8 <b>5</b> 8)	60 (Sada
Stage 2	-	• 2015224032124	- 	- 1	- 999-299-0994	-
Critical Hdwy	8 8 C - 1			9669266928		6.2
Critical Hdwy Stg 1	- 2022/22	- 9////////////////////////////////////	- (1999-1990)	- 2014-201	- 2012/03/2012	-
	salah katal di katal di kata	•				
Critical Hdwy Stg 2	9999995 <b>-</b> 77		•	an a		~ ~ ~
Follow-up Hdwy	- - -	-	-	-	- ^	3.3
Follow-up Hdwy Pot Cap-1 Maneuver		-	- 0	999 939 939 9 69 89 99 <b>-</b>	0	380
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1	-	- - -	- 0 0		0 0	
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2		-	- 0	999 939 939 9 69 89 99 <b>-</b>	0	380
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, %	- - - -	-	- 0 0 0	- - -	0 0 0	380 - -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver		-	- 0 0	-	0 0	380
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver	- - - -	-	- 0 0 0		0 0 0 -	380 - - 380
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver Stage 1	- - - - - -	-	- 0 0 0		0 0 0 -	380 - - 380 -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver	- - - - - -		- 0 0 - - -	- - - - - - -	0 0 0 - - -	380 - - 380 - -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver Stage 1 Stage 2	- - - - - - - - - -		- 0 0 - - -	- - - - - - -	0 0 - - - -	380 - - 380 - -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver Stage 1 Stage 2 Approach	- - - - - - - -		- 0 0 - - - - - -	- - - - - - -	0 0 - - - - NB	380 - - 380 - -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver Stage 1 Stage 2 Approach HCM Control Delay, s	- - - - - - - - - -		- 0 0 - - -	- - - - - - -	0 0 - - - - - - - 0	380 - - 380 - -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver Stage 1 Stage 2 Approach	- - - - - - - -		- 0 0 - - - - - -	- - - - - - -	0 0 - - - - NB	380 - - 380 - -
Follow-up Hdwy Pot Cap-1 Maneuver Stage 1 Stage 2 Platoon blocked, % Mov Cap-1 Maneuver Mov Cap-2 Maneuver Stage 1 Stage 2 Approach HCM Control Delay, s	- - - - - - - -		- 0 0 - - - - - -	- - - - - - -	0 0 - - - - - - - 0	380 - - 380 - -

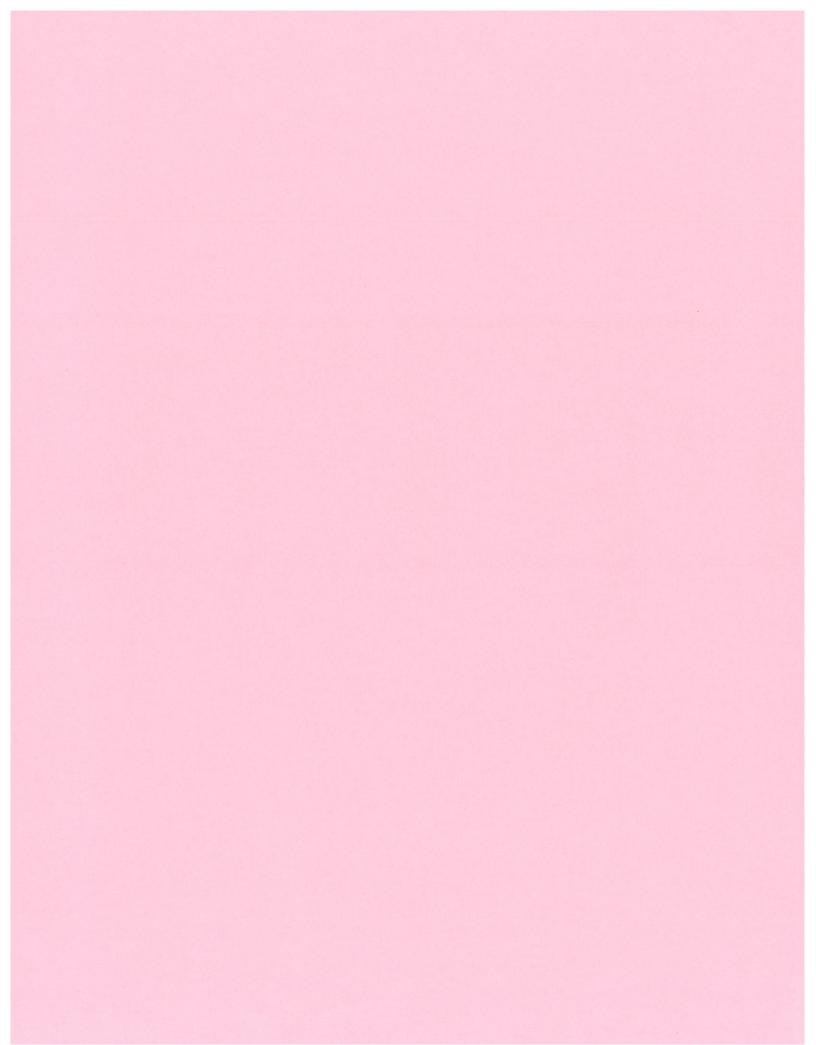
Minor Lane/Major Mvmt	NBLn1 EBT EBR WBT	
Capacity (veh/h)	• • • •	
HCM Lane V/C Ratio		
HCM Control Delay (s)	0	
HCM Lane LOS	A	
HCM 95th %tile Q(veh)		

Intersection Int Delay, s/veh 1.1 EBT EBR WBL WBT NBL NBR Movement ¥ Lane Configurations Þ ŧÎ 53 60 301 2 Traffic Vol, veh/h 746 3 Future Vol, veh/h 60 3 301 53 2 746 0 0 0 Conflicting Peds. #/hr 0 0 0 Stop Sign Control Free Free Free Free Stop **RT** Channelized None -None • None • Storage Length 0 ... 0 Veh in Median Storage, # 0 4 0 Grade, % 0 0 0 100 100 100 100 Peak Hour Factor 100 100 Heavy Vehicles, % 0 0 0 0 0 0 Mvmt Flow 746 60 3 301 53 2 Major1 Major2 Minor1 Major/Minor Conflicting Flow All 0 0 806 0 1083 776 776 Stage 1 (1. S.) 1 Stage 2 307 ---.... . 6.2 Critical Hdwy 4.1 6.4 Critical Hdwy Stg 1 5.4 -. -Critical Hdwy Stg 2 • 5.4 Follow-up Hdwy 2.2 3.5 3.3 -. .... • Pot Cap-1 Maneuver 828 243 401 -Stage 1 457 . -. --Stage 2 751 -2 1 Platoon blocked, % . Mov Cap-1 Maneuver 828 242 401 -. -Mov Cap-2 Maneuver 242 ... 457 . Stage 1 . • • Stage 2 \* ---748 ... NB Approach EB WB 23.8 HCM Control Delay, s 0 0.1 С HCM LOS Minor Lane/Major Mvmt WBL WBT NBLn1 EBT EBR Capacity (veh/h) 246 828 • HCM Lane V/C Ratio 0.224 0.004 -... HCM Control Delay (s) 23.8 -9.4 0 HCM Lane LOS Ċ А А -

HCM 95th %tile Q(veh)

0.8

0



Lane Configurations Traffic Volume (vph) Future Volume (vph) Ideal Flow (vphpl) 1 Total Lost time (s) Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Flt Protected Satd. Flow (prot) 1 Flt Permitted Satd. Flow (perm) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Heavy Vehicles (%) Turn Type Permitted Phases Actuated Green, G (s) Effective Green, g (s)	EBL 41 41 800 5.2 1.00 1.00 1.00 1.00	EBT 268 268 1800 5.2 1.00 1.00	EBR 7 7 1800	WBL <b>*</b> 1 1 1800	WBT ₽ 576 576	WBR 279	<u>NBL</u>	NBT A	NBR	SBL ኻ	SBT	SBR
Traffic Volume (vph)         Future Volume (vph)         Ideal Flow (vphpl)         1         Total Lost time (s)         Lane Util. Factor         Frpb, ped/bikes         Flpb, ped/bikes         Frt         Flt Protected         Satd. Flow (prot)         1         Flt Permitted         Satd. Flow (perm)         Peak-hour factor, PHF         Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	41 800 5.2 1.00 1.00 1.00 1.00	268 268 1800 5.2 1.00	7	1 1 1800	576	279	4 4	والمحافظة والمتحر والمحاصر والمراجع		×,	个.	
Future Volume (vph)         Ideal Flow (vphpl)       1         Total Lost time (s)         Lane Util. Factor         Frpb, ped/bikes         Flpb, ped/bikes         Frt         Flt Protected         Satd. Flow (prot)         1         Flt Permitted         Satd. Flow (perm)         Peak-hour factor, PHF         Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	41 800 5.2 1.00 1.00 1.00	268 1800 5.2 1.00	7	1 1800	the formation and the state of the	279	્ય ન				<b>Þ</b>	
Ideal Flow (vphpl)1Total Lost time (s)Lane Util. FactorFrpb, ped/bikesFlpb, ped/bikesFrtFlt ProtectedSatd. Flow (prot)1Flt PermittedSatd. Flow (perm)Peak-hour factor, PHFAdj. Flow (vph)RTOR Reduction (vph)Lane Group Flow (vph)Confl. Peds. (#/hr)Heavy Vehicles (%)Turn TypePermitted PhasesActuated Green, G (s)Effective Green, g (s)Actuated g/C Ratio	800 5.2 1.00 1.00 1.00 1.00	1800 5.2 1.00		1800	576			8	0	28	1	12
Total Lost time (s)Lane Util. FactorFrpb, ped/bikesFlpb, ped/bikesFrtFit ProtectedSatd. Flow (prot)1Fit PermittedSatd. Flow (perm)Peak-hour factor, PHFAdj. Flow (vph)RTOR Reduction (vph)Lane Group Flow (vph)Confl. Peds. (#/hr)Heavy Vehicles (%)Turn TypePermitted PhasesActuated Green, G (s)Effective Green, g (s)Actuated g/C Ratio	5.2 1.00 1.00 1.00 1.00	5.2 1.00	1800	والمتحد والمتحدي والمتحد والمتحد والمحتر والمحتر والمتحد والمحتر والمتحد والمحتر والمحتر والمحتر والمحتر والمح		279	11	8	0	28	1	12
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Fit Protected Satd. Flow (prot) 1 Flt Permitted Satd. Flow (perm) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Heavy Vehicles (%) Turn Type Protected Phases Permitted Phases Permitted Phases Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio	1.00 1.00 1.00 1.00	1.00	a la plana de Maria		1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor Frpb, ped/bikes Flpb, ped/bikes Frt Fit Protected Satd. Flow (prot) 1 Flt Permitted Satd. Flow (perm) Peak-hour factor, PHF Adj. Flow (vph) RTOR Reduction (vph) Lane Group Flow (vph) Confl. Peds. (#/hr) Heavy Vehicles (%) Turn Type Protected Phases Permitted Phases Permitted Phases Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio	1.00 1.00 1.00		without reasonal and theme	5.2	5.2			5.2		5.2	5.2	
Flpb, ped/bikes         Frt         Fit Protected         Satd. Flow (prot)         1         Flt Permitted         Satd. Flow (perm)         Peak-hour factor, PHF         Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	1.00 1.00	ብ ስስ		1.00	1.00			1.00		1.00	1.00	
Flpb, ped/bikes         Frt         Fit Protected         Satd. Flow (prot)         1         Flt Permitted         Satd. Flow (perm)         Peak-hour factor, PHF         Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt       Fit Protected       ()         Satd. Flow (prot)       1         Fit Permitted       ()         Satd. Flow (perm)       ()         Peak-hour factor, PHF       Adj. Flow (vph)         Adj. Flow (vph)       ()         Reduction (vph)       ()         Lane Group Flow (vph)       ()         Confl. Peds. (#/hr)       ()         Heavy Vehicles (%)       ()         Turn Type       P         Protected Phases       ()         Actuated Green, G (s)       ()         Effective Green, g (s)       ()         Actuated g/C Ratio       ()	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Satd. Flow (prot)1Fit Permitted6Satd. Flow (perm)9Peak-hour factor, PHFAdj. Flow (vph)RTOR Reduction (vph)Lane Group Flow (vph)Confl. Peds. (#/hr)Heavy Vehicles (%)Turn TypeProtected PhasesPermitted PhasesActuated Green, G (s)Effective Green, g (s)Actuated g/C Ratio	<u>29/202</u> 9/8	1.00		1.00	0.95			1.00		1.00	0.86	
Satd. Flow (prot)1Fit Permitted6Satd. Flow (perm)9Peak-hour factor, PHFAdj. Flow (vph)RTOR Reduction (vph)Lane Group Flow (vph)Confl. Peds. (#/hr)Heavy Vehicles (%)Turn TypeProtected PhasesPermitted PhasesActuated Green, G (s)Effective Green, g (s)Actuated g/C Ratio	0.95	1.00		0.95	1.00			0.97	senisti osenis Generalisti	0.95	1.00	
Fit Permitted       9         Satd. Flow (perm)       9         Peak-hour factor, PHF       Adj. Flow (vph)         Adj. Flow (vph)       9         RTOR Reduction (vph)       1         Lane Group Flow (vph)       0         Confil. Peds. (#/hr)       1         Heavy Vehicles (%)       1         Turn Type       P         Protected Phases       1         Permitted Phases       2         Actuated Green, G (s)       2         Effective Green, g (s)       2         Actuated g/C Ratio       0	729	1812	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1722	1731			1769	anda a garada tantara tantara	1724	1568	
Satd. Flow (perm)         Peak-hour factor, PHF         Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type       P         Protected Phases         Permitted Phases         Actuated Green, G (s)       2         Effective Green, g (s)       2         Actuated g/C Ratio       0	0.19	1.00		0.59	1.00			0.86		0.75	1.00	
Peak-hour factor, PHF         Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Protected Phases         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	348	1812	0.065765555555	1070	1731	agalalada daarii taa		1567		1352	1568	galagan baran baran
Adj. Flow (vph)         RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Protected Phases         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C 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
RTOR Reduction (vph)         Lane Group Flow (vph)         Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type         Protected Phases         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	41	268	7	1	576	279	11	8	0	28	1	12
Lane Group Flow (vph) Confl. Peds. (#/hr) Heavy Vehicles (%) Turn Type P Protected Phases Permitted Phases Actuated Green, G (s) 2 Effective Green, g (s) 2 Actuated g/C Ratio 6	0	 	, O	, 0	24	0	0	Ő	Ō	0	10	
Confl. Peds. (#/hr)         Heavy Vehicles (%)         Turn Type       P         Protected Phases         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	41	274	0	1	831	0	0	19	0	28	.• 3	, , ,
Heavy Vehicles (%)         Turn Type       P         Protected Phases         Permitted Phases         Actuated Green, G (s)         Effective Green, g (s)         Actuated g/C Ratio	ч US		4	4	Besterling				2			
Turn TypePProtected PhasesPermitted PhasesActuated Green, G (s)Effective Green, g (s)Actuated g/C Ratio	0%	0%	- 0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Protected Phases Permitted Phases Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio	erm	NA	0 /0	Perm	NA	070	Perm	NA		Perm	NA	
Permitted Phases Actuated Green, G (s) Effective Green, g (s) Actuated g/C Ratio	enns	4		Feilli	8 8		E CIII	2			6	
Actuated Green, G (s)Effective Green, g (s)Actuated g/C Ratio	- <b>-</b>	4		8	Ų		2	<b>د</b>		6	v	
Effective Green, g (s) 2 Actuated g/C Ratio	4 29.9	29.9		29.9	29.9		6	10.1		10.1	10.1	8009463)
Actuated g/C Ratio	29.9 29.9	29.9	kasang pang	29.9	29.9			10.1	ya sana	10.1	10.1	
<u> </u>		29.9 0.59	indes and saids	29.9 0.59	0.59			0.20	59.05.030.55	0.20	0.20	50000000
	0.59 5.2	5.2		5.2	5.2			5.2		5.2	5.2	
	والأعيد وبروا والأراد والمراجع	en pengulan ang akgupagan papahan di perupakan di		a na provinsi kana baha baha baha ba	o.∠ 3.0			5.2 3.0		3.2 3.0	3.0	
Vehicle Extension (s)	3.0	3.0		3.0					da sa kata sa			
	206	1074		634	1026			314		270	314	
v/s Ratio Prot	<u>n ester</u> tes	0.15	ang ang kang kang kang kang kang kang ka	Norder <u>an a</u> n an	c0.48	an a	002/07/2001000	alati <b>n n</b> a anata	alahrahistan		0.00	energiaen.
	0.12			0.00	Saladsada			0.01	()	c0.02		
	0.20	0.25	wardenskaler og	0.00	0.81	viennennen	waaraa	0.06	SANARGANS	0.10	0.01	ener a car
Uniform Delay, d1	4.7	4.9		4.2	8.0			16.3	222	16.5	16.1	Nalidari inin Sulatanasi
· · · · · · · · · · · · · · · · · · ·	1.00	1.00		1.00	1.00	ar an		1.00	esere estas	1.00	1.00	88648893555
Incremental Delay, d2	0.5	0.1		0.0	4.9			0.1		0.2	0.0	
Delay (s)	5.2	5.0		4.2	13.0	(mentry and skiptes)	un ann an thairt an	16.4	ana a sa a sa s	16.6	16.2	An
Level of Service	Α	A		А	В	1846 SO 18		В		В	В	
Approach Delay (s)		5.1		e na sta vez te ca bena	13.0			16.4		11504000000000	16.5	
Approach LOS		A			В			В			В	
Intersection Summary												
HCM 2000 Control Delay			11.1	Н	CM 2000	Level of S	Service		В			
HCM 2000 Volume to Capacity ra	itio	naturnatati Makandari.	0.63		ಎಂ.ಎಂದನ್ನು ನ್ಯಾನೆ ಕಿ	a ang ang ang ang ang ang ang ang ang an		e a sector sector de la Constitución de Constitución de Constitución de Constitución de Constitución de Constit Constitución de Constitución de Constitución de Constitución de Constitución de Constitución de Constitución de	ang periodi ang 1981		e, la constata de tra	a a construction de la construcción
Actuated Cycle Length (s)			50.4	Si	im of lost	time (s)			10.4			
Intersection Capacity Utilization			67.4%			f Service	essensiti SAU	ang sang ang ang ang ang ang ang ang ang ang	C		aneren netet te et de	segressie.
Analysis Period (min)	094044949		15									

c Critical Lane Group

Intersection																
Intersection Int Delay, s/veh	8.7				<u>_////////////////////////////////////</u>											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	<u></u> ሻ	<u></u>			4			4			\$					
Traffic Vol, veh/h	55	195	26	1	767	24	97	0	5	8	0	92		9 AU 97		
Future Vol, veh/h	55	195	26	1	767	24	97	0	5	8	0	92				
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	o 0	0	0	0			9-2-3-2	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop		character	an a	07745
RT Channelized			None			None		ennie Fr	None		300 - B	None		a lanta-		89293 79355
Storage Length	1250	-	- 93599866	- 905405408	-	• 40.52	- 3465056	-	- 25 22 22	- 80 -	- ^	- 136462466		8) <b>1</b> 82 (9)		1536) 1636)
Veh in Median Storage Grade, %	,# - -	0	-	-	0	-	-	0	_	-	0 0					9960) 1960)
Peak Hour Factor	- 100	100	- 100	- 100	100	- 100	- 100	100	- 100	100	100	- 100				uter Kaliki
Heavy Vehicles, %	0	0	0	001	0	0	0	0	100	0	0	0				<u>1999</u> 25
Mymt Flow	55	195	26	Ĭ	767	24	97	Ő	5	8	Ō	92				
	800007.7.0	9886, T.J.	ententant	20,020,020,002,000	enosaturo	00000774200	lananit tan	herana ang ang ang ang ang ang ang ang ang	anga penatusi	noengennetoen	noscocos an	unapusati sitan	2621323222222	02105000000000		SARDAD
Major/Minor I	Major1		Å	/lajor2		Å	Ainor1	•	A	Ainor2						
Conflicting Flow All	791	0	0	221	0	0	1145	1111	208	1102	1112	779				
Stage 1	101	• •	U 	-	-	-	318	318	200	781	781					
Stage 2	-	-	-	•	-	-	827	793	-	321	331		99990929999			269334
Critical Hdwy	4.1			4.1	e e e e e e e e e e e e e e e e e e e		7.1	6.5	6.2	7.1	6.5	6.2				
Critical Hdwy Stg 1	a 64360 e 1997		•	-	•	•	6.1	5.5	-	6.1	5.5	-				
Critical Hdwy Stg 2		6.858.			•		6.1	5.5		6.1	5.5	999 ÷				
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3	al factor and the			di ma
Pot Cap-1 Maneuver	838	•	-	1360	-		178	211	837	191	211	399		9.000.00		
Stage 1	-	- 	- 0405405549	+ 1995-1996-1996	- 9/4/5/19/2	- 2015-2010-2010	698	657	- 2011/1010101	391	408	- 0596094696	osanananina	eneration	antanan si	0950
Stage 2					- 		369	403		695	649					
Platoon blocked, %	838	-	- S/65/555	1360	- 1000-00-00	- 60.000 (10)	130	197	837	180	197	399		546.64		
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	000		-	1300	-	- (2000) -	130	197	- 100 -	180	197	099 '-				6999
Stage 1	- 	9/050/05/05 201220-5 <b>1</b> -22					652	614		365	408					
Stage 2		-	80439382/d -	99999999999 •		- -	284	403	- 1990	646	606	•	5005846999			
							69.068.66 <b>6</b> 4									
Approach	EB			WB			NB			SB						
HCM Control Delay, s	1.9			0			85.2			18.6						
HCM LOS		6463778365		v	90554824)		F			то.о С	900000000					1953017
nomicoo																
Minor Long Major Mum	•	VBLn1	EBL	EBT	EBR	WBL	WBT	WBR	2DI ni		esen een de sen			orani and		
Minor Lane/Major Mvm	L I	136	838			1360			364							
Capacity (veh/h) HCM Lane V/C Ratio			0.066	- 100 C	er en ser en	0.001	-		0.275							
HCM Control Delay (s)		85.2	9.6	- 	- 101000-0000 10100-000	7,6	- 0		18.6	ona (son Gio. Tablia				den kolonistan k San data kal		
HCM Lane LOS		<u>م</u> .007 F	0.0 A	-		A	v A	- 	C.U	aayaanaadii	naté (6856/580)	anna (1997) Anna (1997)		anan an	en waard 2000 dabi	96900
HCM 95th %tile Q(veh)		4.4	0.2			0		<u>.</u>	1.1							
999, 545 (547, 57, 59, 59, 59, 59, 59, 59, 59, 59, 59, 59	ne deservices de 193	enterne hê tel de	perioris en Tratata (16	nn fos epieditaled	en e	er ar estrette e Tablé	estado da etidade		an meneralaise	and received a 2004		e a la seconda de Califa d	a an an an tha an an Arth	s and carpenado	an a	

Intersection						
Int Delay, s/veh	0					
Movement	EBT EBR	WBL WBT	NBL NBR			
Lane Configurations	þ	<u>ት</u>	<b>*</b>			
Traffic Vol, veh/h	189 19	0 793	0 0			
Future Vol, veh/h Conflicting Peds, #/hr	189 19 0 0	0 793 0 0	0 0			
	Free Free	Free Free	Stop Stop			
RT Channelized	- None	- None	- None			
Storage Length		• •	- 0			
Veh in Median Storage,	#0-	- 0	0 -			
Grade, %	0 -	- 0	0 -		en en anterna una constitución de la deservación de la deservación de la deservación de la deservación de la d	a da
Peak Hour Factor	100 100	100 100	100 100			
Heavy Vehicles, % Mvmt Flow	0 0 189 19	0 0 0 793	0 0			
WIVIIII FIOW	109 19	0 785	0			
Major/Minor M	ajor1	Major2	Vinor1			
Conflicting Flow All	0 0		- 199			
Stage 1			,00 			
Stage 2						
Critical Hdwy			- 6.2			
Critical Hdwy Stg 1					a an an an an ann an an an an an an an a	
Critical Hdwy Stg 2						
Follow-up Hdwy			- 3.3			
Pot Cap-1 Maneuver	•	0 -	0 847			
Stage 1 Stage 2	 2010-2010-2	0 - 0 -	0 -			
Platoon blocked, %			<b></b>			
Mov Cap-1 Maneuver			- 847			
Mov Cap-2 Maneuver						
Stage 1		- se <b>-</b>				
Stage 2	- -					
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS			A	na na sana ang ang ang ang ang ang ang ang ang		
Minor Lane/Major Mvmt	NBLn1	EBT EBR	WBT			
Capacity (veh/h)	-	•	-			
HCM Lane V/C Ratio	-	-	- 			
HCM Control Delay (s) HCM Lane LOS	0 A		- -			
HCM 95th %tile Q(veh)	л -		-			
				en hen hen het het die Standen die Standen van die Standen van die Standen van die Standen van die Standen van Standen van die Standen van die	ang sa pang pang pang ang pang pang pang pang	

Intersection														
Int Delay, s/veh	0											-		
Movement	EBT	EBR	WBL V	NBT	NBL	NBR								
		cun	WDL 1	<u>∧or</u> ↑	INDE	<u>ixon</u>								
Lane Configurations Traffic Vol, veh/h	<b>दी</b> 177	11	0	т 793	0	r 0							San Sen Sen Maria	
Future Vol, veh/h	177	11 11	0	793 793	0	0								
Conflicting Peds, #/hr	0	0	0	0	0	0						ei e e krist tud tier kanter Sterre		
Sign Control	Free	Free	ana manganan kata kata kata kata kata kata kata	Analysian and a second	Stop	Stop						91051 <i>(62</i> )89)		
RT Channelized		None		lone		None								
Storage Length	5.0200394 -	-		-	4689488999 -	0							esyn de standen d	894
Veh in Median Storage	# 0			0	0									
Grade, %	,, "      0	9/99/98/29 -	- -	0	0	- -								890
Peak Hour Factor	100	100	100	100	100	100					a di sa san di sa Tang tang tang			
Heavy Vehicles, %	0	,00 0	0	0	0	0		angesourgu SSI	nusinasin(1998) 1	mstanssefikken (kk		en stateski folga fi	naa aasan diina dii ka	
Mvmt Flow	177	11		793	Ő	Ō								
		aninintintintinti		araan Tertebb	vanessie OZABS	oranan sana sana sana sana sana sana sana	n an		un san sa katala da sa	anan menerikan kara	ay ananga nadi Albertini.			
Mojor/Minor	Major1		Major2	<b>1</b>	inor1									
			viajorz	IVI		100								
Conflicting Flow All	0	0	- 699999999	• 39254000	- 1939:1939	183		91918-S						98x
Stage 1			an sha sa ta shi a s			en an				ali manata da				69324
Stage 2	- 1093093493	- 8:0000800	- 1120-120	- 188498488	- 1906990	- -		anas Seine		15/10/00/0		60 62000500600		
Critical Hdwy	999999999 <b>-</b> 0 99999999999999	-			-	6.2								
Critical Hdwy Stg 1	-	-	-	- 1999-1999	- 1819-0	- 								
Critical Hdwy Stg 2 Follow-up Hdwy		- -		3996 <b>-</b> 796	-	- 3.3						9.199.599.69.		
Pot Cap-1 Maneuver		- 	0		0	865	una industria da							
Stage 1	9899999999 -		0	9600597693 -	0	- 000			000000000000000000000000000000000000000					
Stage 2			0	- 1972-199	0									
Platoon blocked, %	36866453	8:88:828 -	V	98999-999 -	U	0								
Mov Cap-1 Maneuver						865								
Mov Cap-2 Maneuver	999999979 -	9/39/499/49 -	-		499945-999 <b>4</b>		and an		nsanga desi (di)	n estat distriki		nastrettiketsi		25X.1
Stage 1	sininindiana Sinini		onnon noirdealle Status											
Stage 2	antozzi(986%)5 -	5.2999995590 <b>+</b>		55005250925 <b>-</b>		ausses 632032 -		na mangang sa	ansan kana kana kana kana kana kana kana	on petro de la Calificia La constanti de la Calificia de la constante d	arang ang kasarin	saassaa kaadiida		000) 
	67.659.634							686 C	19 20 500			o opo nom Geo		
Annuach	EB	ener tidtedile	WB		NB									/
Approach	****													
HCM Control Delay, s	0	916918918	0		0									
HCM LOS	943910444	y og sins		-	A	<i>310/3</i> 1/3								
		s. 60.286											S	
Minor Lane/Major Mvm	ıt	VBLn1	EBT I	EBR '	WBT									
Capacity (veh/h)	8.182.85	8-00-00 <b>-</b> -		•										
HCM Lane V/C Ratio		-	-	-	-		And an an entry of the Control of the	و المحمد الم				- a da da serie da s	و معادم و معالی اور معالی م	
HCM Control Delay (s)		0					antsi nanitai sila. Misin antoina		nan si ka Gi Kanganganga					
HCM Lane LOS		А	-	-	<b></b>	entre este e		en an		** *******		مرجعة والمراجع والمراجع		ser.
HCM 95th %tile Q(veh)	)				_									

Intersection Int Delay, s/veh	1.4					
-		BR WBL	WBT NBL	NBR		
Lane Configurations	<u></u> د		4 M			
Traffic Vol, veh/h	137	40 2	724 69	3		
Future Vol, veh/h	137	40 2	724 69	3		
Conflicting Peds, #/hr	0	0 0	0 0	Õ		
		ree Free	Free Stop	Stop		
RT Channelized			None -	None		
Storage Length	iterie-zac <u>t</u> za		- 0		n fin de service de la serv La service de la service de	
Veh in Median Storage,	# 0		0 0			
Grade, %	0	(	0 0		a properation for the production of the production of the production of the product o	
Peak Hour Factor		100 100	100 100	100		
Heavy Vehicles, %	0	0 0	0 0	0	en egy byte yn de byte de betreffen i fle byte en feren breden en benefen fra en en ferener er en feren ferene Feren	
Mvmt Flow	137	40 2	724 69	3		
	ne 2012, 2019 - 2012	u DANGGARATU	an an taga na manana ata.	1996 (1991) - 13 (1996) - 1995 1996 (1991) - 1997 (1996) - 1995	an ann a' fhair a sa faithe ann an ann air ann an airtean a' sharann ann an ann an ann ann ann ann ann	
Major/Minor M	ajor1	Major2	Minor1			
Conflicting Flow All	ajori 0	0 177	0 885	157		
Stage 1	U	V 1/7	- 157	IJ		
- Stage 2			- 728	- -	• · · · · · ·	fant i chi i chi
Critical Hdwy	ngen etter version	- 4.1	- 6.4	6.2		
Critical Hdwy Stg 1	1999) A. Telefor 	ana kana da	- 5.4	seite <b>V∙f-</b> stadious: -	le alle fan fan de ferste fan de ferste fan de fan de ferste de fers E	
Critical Hdwy Stg 2	1973-2016		- 5.4			
Follow-up Hdwy	1094-7992-9 -	- 2.2	- 3.5	3.3		
Pot Cap-1 Maneuver		- 1411	- 318	894		
Stage 1			- 876	- -		
Stage 2			- 482			
Platoon blocked, %		- •		an an an an Anna an An An Anna an Anna		
Mov Cap-1 Maneuver		- 1411	- 317	894		
Mov Cap-2 Maneuver			- 317			
Stage 1			- 876			upercenter and an a
Stage-2	-		- 481	-		
		an and a second research coord		naan talaan geber kerse, waard		
Approach	EB	WB	NB			I
HCM Control Delay, s	0	0	19.1			
HCM LOS	entre Yahren	ere are are de la Fini I	C	ibti i istikariik	n fer gefningen er fennen fer en gestigdere gegen ist dere begen som en dere gegenere i som er er som er som e Er fer gefningen er fennen fer en gestigdet er gegen ist dere begen som en dere gegenere i som er er er som er e	
Minor Lane/Major Mvmt		Ln1 EBT	EBR WBL	WBT		
Capacity (veh/h)		326 -	- 1411			•
HCM Lane V/C Ratio	the second second second second	326 - 221 -	- 1411 - 0.001			
HCM Control Delay (s)			- 0.001	0		
HCM Lane LOS		- C	- 7.0 - A	A		
HCM 95th %tile Q(veh)		0.8 -	- 7	~ 		
		<b>v.</b> 0 -	U			

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	٨		*	*	4	4	1	1	p	6	Ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	1.		ሻ	₽			¢\$>		ሻ	¢Î	
Traffic Volume (vph)	4	776	8	0	480	51	11	3	3	283	3	81
Future Volume (vph)	4	776	8	0	480	51	11	3	3	283	3	81
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	5.2	5.2			5.2			5.2		5.2	5.2	
Lane Util. Factor	1.00	1.00			1.00			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00			1.00			1.00		1.00	1.00	
Frt	1.00	1.00			0.99			0.98		1.00	0.86	
Flt Protected	0.95	1.00			1.00			0.97		0.95	1.00	
Satd. Flow (prot)	1729	1817			1794			1711		1724	1522	
Flt Permitted	0.36	1.00			1.00			0.86		0.75	1.00	
Satd. Flow (perm)	662	1817			1794			1520		1355	1522	
Peak-hour factor, PHF	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. Flow (vph)	4	776	8	0	480	51	11	3	3	283	3	81
RTOR Reduction (vph)	0	1	0	0	7	0	0	2	0	0	57	0
Lane Group Flow (vph)	4	783	0	0	524	0	0	15	0	283	27	0
Confl. Peds. (#/hr)			2	2			2		2	2		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	Sign Second process	Perm	NA	- and a family of the same	Perm	NA	
Protected Phases		4	parente en esperante en la companya		8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	26.0	26.0			26.0			15.7		15.7	15.7	
Effective Green, g (s)	26.0	26.0			26.0			15.7		15.7	15.7	
Actuated g/C Ratio	0.50	0.50			0.50			0.30		0.30	0.30	
Clearance Time (s)	5.2	5.2			5,2			5.2		5.2	5.2	
Vehicle Extension (s)	3.0	3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	330	906			895			458		408	458	
v/s Ratio Prot	-2009:00:00:00:00:00:00:00:00:00:00:00:00:	c0.43			0.29			an an ann an ann an an An	1997 - 1997 -		0.02	1.000.000.000.000.000
v/s Ratio Perm	0.01	u gu daganala nay. Na maganala nay					Veri Griger George	0.01		c0.21		estadorida Enterio Par
v/c Ratio	0.01	0.86	9 49 49 49 49 49 49 49 49 49 49 49 49 49	02/95/03000022224	0.59	anter de la cartes	n an an an Anna	0.03		0.69	0.06	
Uniform Delay, d1	6.6	11.5			9.2			12,8		16.1	12.9	91919)
Progression Factor	1.00	1.00			1.00	inettekenink kattantan	antan tang tang tang tang tang tang tang	1.00		1.00	1.00	ennennen er
Incremental Delay, d2	0.0	8.6			1.0			0.0		5.0	0.1	
Delay (s)	6.6	20.1			10.2			12.9		21.1	13.0	letteretettere e
Level of Service	A	C	ungu untu dari ta Gala dari s		В			В		C	В	
Approach Delay (s)	2000-2007-000-000-000-000-00-000-00-00-00-00-0	20.1	aya maka (60) kata sa kaya	2013-000-000-000-000-000-000-000-000-000-	10.2	0.999/0411199/99999999		12.9	99499994926999999 1	000000000. <del></del>	19.3	000000000000000000000000000000000000000
Approach LOS		C			В			В			В	
		ana an an taona an ta	anana sa ta sa ta	en en en en fan 1920 (f								ola post obtectión.
Intersection Summary			16.5				<u>.</u>					
HCM 2000 Control Delay			16.8	H	SM 2000	Level of S	Service		В			
HCM 2000 Volume to Capa	city ratio		0.80	~		ALC: VIN	97691850 <i>8</i> 584	9905303415945		NAMES AND		un de la compañía de
Actuated Cycle Length (s)	1		52.1		im of lost				10.4			
Intersection Capacity Utiliza	ition	a ka	75.5%	IC	U Level C	of Service	desetter terre		D	en e	ana ang ang ang ang ang ang ang ang ang	Sectoria -
Analysis Period (min)			15									

c Critical Lane Group

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Int Delay, s/veh	10.7												
Movement	EBL	ÉBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	ሻ	4			\$			4			4		
Traffic Vol, veh/h	109	886	41	2	362	3	75	0	3	7	0	86	
Future Vol, veh/h	109	886	41	2	362	3	75	0	3	7	0	86	
Conflicting Peds, #/hr	2	0	0	0	0	2	1	0	2	2	0	1	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	54-163 083 <b>-</b> 3		None			None			3 - 1 <i>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 </i>			None	
Storage Length	1250	-	66 ma 2001 / A		•	-			-	-	-		
Veh in Median Storage	ə. # -	0	9.69.6 <b>.</b> 4		0	8 9 <b>-</b>		0	ê (19		0	- (s. 19	
Grade, %	-•/////////////////////////////////////	0	•	-	0	-	•	0	•	-	0		
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0	
Mvmt Flow	109	886	41	2	362	3	75	0	3	7	0	86	
	net465.7.57.67	un (Viana Tarta) (	seren an	adargani <del>US</del> PA	parin-i-statisti	ungan ding kang kang Kang ding kang kang kang kang kang kang kang ka	1994 1995 1974 19	aanuussiinTiili	nan Artista Tidi	ananan manan di da	nemanta ngasjedika	annasa na 2011 S	
Major/Minor	Major1	-11-11-11-11-		Major2			Minor1			Minor2			
Conflicting Flow All	367	0	0	927	0		1537	1496	909	1498	1515	367	
a second second contraction of the second	307	U Vesisio	U	921	U Sessional			1490	909	370	370	100	
Stage 1		n gygeliji.	e errere ber	<u>.</u>			1125 412	371		1128	1145		
Stage 2	-	- 19160-1953	- 	- -			7.1	6.5	-	7.1	6.5	- 6.2	
Critical Hdwy	4.1	8.89.95 <b>-</b> 9	-	4.1			ana kana arasar	energen er fan en fan en fan en steren en fan en steren en fan en steren en steren en steren en steren en stere	6.2	-96-405-009-61-	ter ter en	0,2	
Critical Hdwy Stg 1	-	- 1999-1994	- 2013:00:00	- 908908840	- 8/88/268	- Subsizes	6.1	5.5	• 1990/1990	6.1	5.5	- 9996055056/75	
Critical Hdwy Stg 2							6.1	5.5	-	6.1	5.5	- 3.3	
Follow-up Hdwy	2.2	- 	- 9//9//////	2.2	- 19488:400-00	- 998-0599-084	3.5	4	3.3	3.5	4	3.3 683	enski en kantak
Pot Cap-1 Maneuver	1203	9.200A.	9.038.09.K	746		54025050	96	124	336	102	121	003	a isa ta da
Stage 1	- 60/1002/06/06	- 	- 20152000000	- 658668888	- 6060-54	• 26.2027-58.0	251	283	- 	654	624	- 	
Stage 2	•	-	-	-		-	621	623	-	250	277	-	
Platoon blocked, %	1000	- 	• 20208200		- 1996-94	- 1999/1997		-	oor	~~~	- 100	001	
Mov Cap-1 Maneuver	1202	9 - 9 - 9 <b>-</b> 9	94900	745			78	112	335	93	109	681	
Mov Cap-2 Maneuver	• ggglyddagad	- 999999999	- 3092302000	- 250584494	- 2002-00-00		78	112	- 194914995	93	109	- 92003385944	
Stage 1		64000000	Sulos neur	la denta de la			228	257	<b>.</b>	593	621		
Stage 2	-	-	- 	- 6664-344		an an the second se	540	620	Geodelia (1884	225	252	- 1952-1987-58145	
					os (nystrin (1990) Gan Ard (1996)								
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.9			0.1			185			14.8			
HCM LOS							F			В			
Minor Lane/Major Mvm	nt /	VBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	<u>•••••••••••••••••••••••••••••••••••••</u>		1202			contration in the second		-	Visiano-Alexandr				
HCM Lane V/C Ratio	ennen (1997)	0.975	Second Second Second Second	6416/14974 -	0///02/02/02/02	0.003		29555426926-07254	0.202	SUSTICE.	an an an an Anna an An An Anna an Anna	astati (1995) Stati	
HCM Control Delay (s)	<u>1909: anno 1</u>	185	8.3	- 2009/02/3		antani <u>n</u> anta	0		14.8	\$9/09/UD			
HCM Lane LOS	Sections	IUU	ಁೣೢೢೢೢೢ		in de la cal	್	all air an the second secon	1988/9929/888	14.0 B			yasoo saliosida	en och sen har stade

Intersection

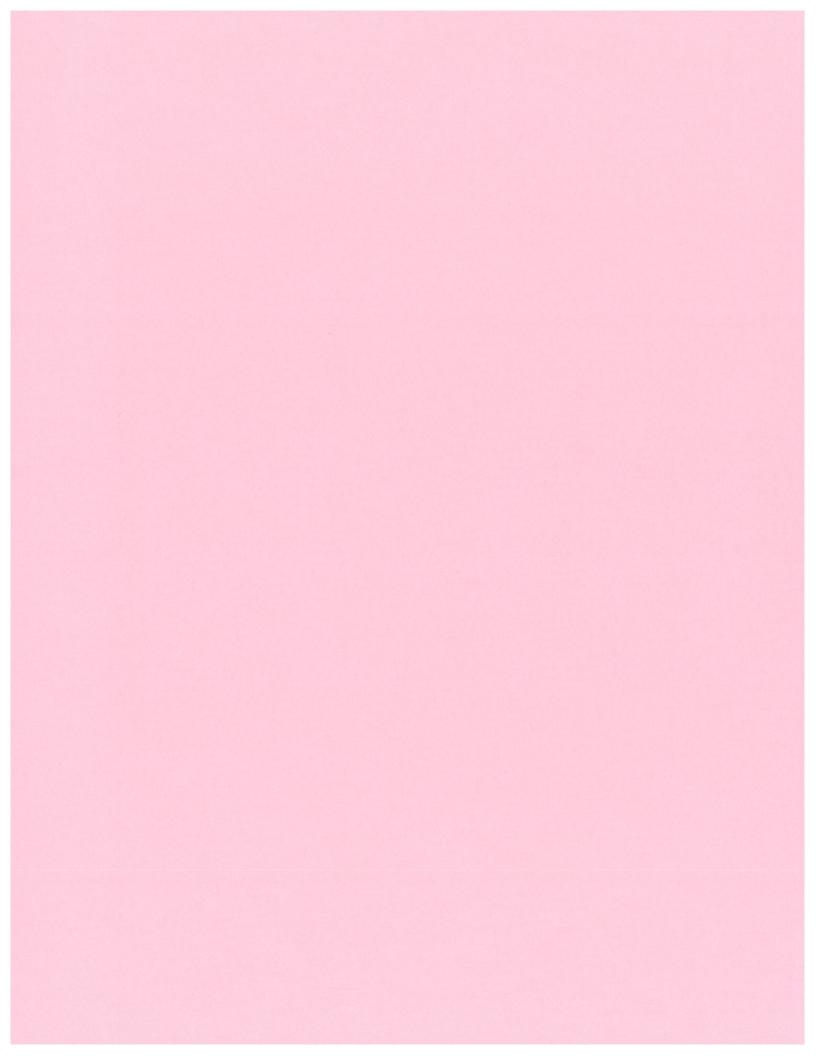
Int Delay, s/veh	0												
Movement	EBT	EBR	WBL WE	T NBL	NBR								
Lane Configurations	¢Î			ዮ	ሻ								
Traffic Vol, veh/h	868	29	0 30	S8 C	) 0						57.02.550		
Future Vol, veh/h	868	29	0 30										the state of
Conflicting Peds, #/hr	0	0	0	0 0			18 19 19 19 19						
	Free	Free	Free Fr			er her av de estructure en elle fer			and and the second	and the first set to be	and a set of a set of the sets	ana ang ang taong tao	- 5451-651
RT Channelized	•	None	- Noi	ie ·	None								
Storage Length	-	<del>.</del>	-		- 0	and an an an an an an an an Aragona	et ante etta dia tearra da ante tearra.	na pananati patiwa anti	en de composition de la	terrere en anter en ator en filter	en en en antre statiet.	Alexandra de terratorio	e-1943).
Veh in Median Storage, i				0 0	and so the state of the				line personan Kon Cherning				
Grade, %	0	• 	- 	0 0		antas no natatas.	an di saarit saar	antara ang Arita	ula del enformate	ene Halla ba	n a state Meda	urri stal stale stale	
Peak Hour Factor	100	100	the state of the second second	0 100	and the state as well.								
Heavy Vehicles, %	0	0	0	0 0		via data antina d	Ang kanadi ng salaki ng	an ganarayaka		gereren en en	900 KAN 1050 K	9	
Mvmt Flow	868	29	03	58 C	) 0	UNICE MES							
Major/Minor Ma	ajor1	٨	Najor2	Minor									
Conflicting Flow All	0	0	-	-	- 883								
Stage 1	10/5.	80.884 <b>.</b> 5.2		• 39 % .	• * * *			ene na e			**		
Stage 2	-	-	-	-	-						a haar aharar da harara		
Critical Hdwy					- 6.2								
Critical Hdwy Stg 1	-	-	-	-		en ag environ en en gener	- 1. Start and a start of the start of	ana ang ang ang ang ang ang ang ang ang	ana a si pang mang dala		ann a thaonn Albaire	un haite e herte Distrie	ter vezet y
Critical Hdwy Stg 2													
Follow-up Hdwy	- anns anns de	- annaranana	-		- 3.3		A poptini na poni na teknometer	anga kata kata maha	ana ana kaodha	nayar kasa naya naya	yang Propositi	al un anter de server	
Pot Cap-1 Maneuver	•		0	- (	and the product of the second								
Stage 1	- Secondarativa	- 	0	- (				ne interver interver	and and a state of the state of		war an stear, Marson		
Stage 2			0	- (	) -				en de la				lan san Périnte
Platoon blocked, %	- 1999-1996	- 85785-8586		- 				9489489484					
Mov Cap-1 Maneuver					- 348								
Mov Cap-2 Maneuver Stage 1	•	-	-	-	• •								
Stage 2	-	W2009592	•									9.199.199.199.19 1	GHERONI GHERONI
Slaye 2	-		-	- NG 221 531									
	NATO TR	946945949	50 (49) (99) (90) (75			ener Energiae							-2-3039 
Approach	EB		WB	NE									
HCM Control Delay, s	0		0		)								
HCM LOS				•	1		e transforment sets	en de tratación de centra	nter v a fra a da Arás Na	na sere ever	entre trevense à	en es selfernse fils	and the
Minor Lane/Major Mvmt		NBLn1	EBT EI	BR WB	ſ								
Capacity (veh/h)		-			-								
HCM Lane V/C Ratio	neo secis				- -		an se	ayaan ay arekati (1953)	e te staar die kerken br>Natur	a an an tha	and and the state of the second s	er en en verenden de sekke	
HCM Control Delay (s)		0	•										94493 1949-19
HCM Lane LOS		A				999-000 (1997) 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -		un antanan Katabilikan				an an gara gearde bada (192	

-

HCM Lane LOS A -HCM 95th %tile Q(veh) - -

Intersection		
Int Delay, s/veh	0	
Movement	EBT EBR WBL WBT NBL NBR	
Lane Configurations		9599
Traffic Vol, veh/h Future Vol, veh/h	850 17 0 368 0 0 850 17 0 368 0 0	
Conflicting Peds, #/hr		
Sign Control	Free Free Free Stop Stop	196516
RT Channelized	- None - None - None	
Storage Length	0	
Veh in Median Storage, Grade, %	0 0 0 - 0 0 0 -	
Peak Hour Factor	100 100 100 100 100 100	
Heavy Vehicles, %	0 0 0 0 0 0	
Mvmt Flow	850 17 0 368 0 0	
		aasiinte
	jor1 Major2 Minor1	
Conflicting Flow All	0 0 859	
Stage 1 Stage 2		
Critical Hdwy	- · · · <u>6.2</u>	
Critical Hdwy Stg 1		anta
Critical Hdwy Stg 2	$\cdot$	
Follow-up Hdwy Pot Cap-1 Maneuver	3.3 0 - 0 359	
Stage 1	0 - 0 -	1999 (F) 1999 (F) 1999 (F)
Stage 2	0 - 0 -	
Platoon blocked, %		en e
Mov Cap-1 Maneuver Mov Cap-2 Maneuver	· · · · · · · · · · · · · · · · · · ·	
Stage 1		
Stage 2		
Approach	EB WB NB	
HCM Control Delay, s	0 0 0	
HCM LOS	A	
		alanarati
Minor Lane/Major Mvmt	NBLn1 EBT EBR WBT	
Capacity (veh/h)		
HCM Lane V/C Ratio		

· · · · · · · · · · · · · · · · · · ·									
ntersection									
nt Delay, s/veh	1.2								
Vovement	EBT EF	BR WBL	WBT	NBL	NBR				
			<u>्राण्यः</u> भि	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>					
Lane Configurations	ڊ مەر	~~ ~			0				
Traffic Vol, veh/h	nahan yaga waxani George Yesarg	60 3	314	53	2				
Future Vol, veh/h		60 3	314	53	2 0				
Conflicting Peds, #/hr	_ 0 _	0 0	0	0	periodi a califica préprie provide d'a activité.				
Sign Control	Free Fr		Free	Stop	Stop				
RT Channelized	- No	ne -	None	an a	None				
Storage Length	- -	 	- 	0	- 1999-1999-1999-1999-1999-1999-1999-19				
Veh in Median Storage,		가 알려진 가지 않는 사람은 가지 관계하고 있	0	0					
Grade, %	0	 -	0	0	- 	en fillen stelle st	Alexandor transition for		la este contra
Peak Hour Factor	at the antipation of the test	00 100	100	100	100				
Heavy Vehicles, %	0	00	0 1999 - 1999	0	0	el cara a secono de la compañía de l			ananan ananan
Mvmt Flow	789	60 3	314	53	2				
Major/Minor N	lajor1	Major2	N	Ainor1					
Conflicting Flow All	0	0 849	0	1139	819				
Stage 1					and the second	<del>an an a</del> n an	Analysis of the second seco		
Stage 2	•	• •	•	320	-				
Critical Howy	enigi daga takhiri Taki ga Taki sa	- 4.1		6.4	6.2				
Critical Hdwy Stg 1			9999 (1996) -	5.4	-	a a capital de la constant à deservation de la c	an an an an an an an an that an Arbain. An an	a na marana na sa sabatata at sheti	an a an an ghadh bail
Critical Hdwy Stg 2				5.4	-				
Follow-up Hdwy	9779999999999 +	- 2.2		3.5	3.3	alana ana ing kanalang kanala Kanalang	ang	and the second	un anna an tartar anna dha
Pot Cap-1 Maneuver	-	- 798		225	379				
Stage 1			<i>angaro</i> (peri •	437	unga ja saan kana kana kana kana kana kana kan	enere functionelle effective for the provide set of the	u uz kosztanie jeszere szereketett († 2007) A tereszterek jeszere szereketett († 2007)	ang sayang saggan sa sang sang tang tang tang tang tang tang tang t	aa dada ku ku bu
Stage 2	9.499.09 			741	200 <u>-</u>				
Platoon blocked, %	90000000000000000000000000000000000000			ostra 201.49	an an an tha an an an tha br>Tha an tha an t	anga panger pager sa serang sa sa sa serang sa ser Serang sa serang sa s	a an Arthread an Arthread an Arthread an Arthread an Arthread an Arthread an Arthrea	en e	en georrenen der die heren (43
Mov Cap-1 Maneuver	-	- 798	•	224	379				
Mov Cap-2 Maneuver	- - -			224		n generalden i Kanan de Kanada (Kanada (Kanada)	Dennese former nære brægen og statigere og	n genergen en de service de la construction de la construction de la construction de la construction de la cons	a a a se
Stage 1				437	•				
Stage 2	4			- 737					
				9999 <b>7</b> 9797				an a	
Annroach	EB	WB	an a	NB					
Approach	0	0.1		25.9					
HCM Control Delay, s	aren <b>V</b> erente	o <b>V</b> .∏		25.9 D		en de la président		eren in fan fan fikker. F	ganer og tig tig skalar L
HCM LOS				u Maria					
				enere,					
Minor Lane/Major Mvm			EBR	WBL	WBT				
Capacity (veh/h)		- 227		798					
HCM Lane V/C Ratio		242 -	-	0.004	-		nt waard daalad daga waxaa karaan ta'inta ilaan ka	en de spele and de andre en de la beneficie de la destación de la de	a an
HCM Control Delay (s)	2	5.9 -		9.5	0				
		D -	_	A	А				
HCM Lane LOS HCM 95th %tile Q(veh)		0.9 -		Ő	<b>N</b>		an an an ann an Anna an Anna an Anna a' suadh an tar a' suadh an tar a' suadh a' suadh a' suadh a' suadh a' sua	e fan de party sons y ar befan dae en eine	egyenesetyene personales er en er



	Å	<b></b> }	~	¥		*	4	Ť	p	1	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	14			4			\$			4	
Traffic Volume (vph)	55	195	26	1	767	24	97	0	5	8	0	92
Future Volume (vph)	55	195	26	1	767	24	97	0	5	8	0	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7
Total Lost time (s)	5.9	5.9			5.9			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			1.00			0.99			0.88	
Fit Protected	0.95	1.00			1.00			0.95			1.00	
Satd. Flow (prot)	1729	1788			1812			1726			1780	
Fit Permitted	0.37	1.00			1.00			0.82			0.96	
Satd. Flow (perm)	671	1788			1812			1480			1720	
Peak-hour factor, PHF	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. Flow (vph)	55	195	26	1	767	24	97	0	5	8	0	92
RTOR Reduction (vph)	0	4	0	0	1	0	0	35	0	0	80	0
Lane Group Flow (vph)	55	217	0	0	791	0	0	67	0	0	20	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	44.4	44.4			44.4			8.7			8.7	
Effective Green, g (s)	44.4	44.4			44.4			8.7			8.7	
Actuated g/C Ratio	0.68	0.68			0.68			0.13			0.13	
Clearance Time (s)	5.9	5.9			5.9			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	458	1221			1237			1 <del>9</del> 8			230	
v/s Ratio Prot		0.12										
v/s Ratio Perm	0.08				0.44			c0.05			0.01	
v/c Ratio	0.12	0.18			0.64			0.34			0.09	
Uniform Delay, d1	3.6	3.7			5.8			25.5			24.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.5	0.3			2.5			1.0	· · · · · · · · · · · · · · · · · · ·		0.2	
Delay (s)	4.1	4.0			8.3			26.6			24.8	
Level of Service	А	A			А			С			С	
Approach Delay (s)		4.0			8.3			26.6			24.8	
Approach LOS		А			A			С			С	
Intersection Summary												
HCM 2000 Control Delay			10.2	H	CM 2000	Level of S	Service		В			
HCM 2000 Volume to Capac	ity ratio		0.59									
Actuated Cycle Length (s)			65.0	Su	um of lost	time (s)			11.9			
Intersection Capacity Utilizat	ion		69.9%	IC	U Level o	of Service			С			
Analysis Period (min)			15									
o Critical Lano Group												

c Critical Lane Group

	<u>_</u>		7	1	4	4	٩	Î	p	1	Ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>₽</b>		<u> </u>	\$			<del>(</del> }			\$	
Traffic Volume (vph)	109	886	41	2	362	3	75	Ō	3	7	0	86
Future Volume (vph)	109	886	41	2	362	3	75	0	3	7	0	86
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7
Total Lost time (s)	5.9	5.9			5.9			6.0			6.0	
Lane Util. Factor	1.00	1.00			1.00			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	1.00	0.99			1.00			0.99			0.88	
Fit Protected	0.95	1.00			1.00			0.95			1.00	
Satd. Flow (prot)	1726	1808			1817			1724			1743	
Fit Permitted	0.54	1.00			1.00			0.80			0.97	
Satd. Flow (perm)	986	1808			1812			1441			1691	
Peak-hour factor, PHF	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. Flow (vph)	109	886	41	2	362	3	75	0	3	7	0	86
RTOR Reduction (vph)	0	1	0	0	0	0 0	0	31	Ō	0	76	0
Lane Group Flow (vph)	109	926	Õ	Ō	367	Õ	0 0	47	Ō	Ő	17	Ō
Confl. Peds. (#/hr)	2	020	v	Ū		2	1		2	2		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	0,0	Perm	NA		Perm	NA	
Protected Phases	i uni	2		1 Onn	6		( Chin	8		1 onth	4	
Permitted Phases	2			6	Ū		8	Ū		4	•	
Actuated Green, G (s)	55.1	55,1		Ŭ	55.1		Ŭ	8.4		•	8.4	
Effective Green, g (s)	55.1	55.1			55.1			8.4			8.4	
Actuated g/C Ratio	0.73	0.73			0.73			0.11			0.11	
Clearance Time (s)	5.9	5.9			5.9			6.0			6.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	720	1321			1324			160			188	
v/s Ratio Prot	120	c0.51			1064			100			100	
v/s Ratio Perm	0.11	00.01			0.20			c0.03			0.01	
v/c Ratio	0.15	0.70			0.28			0.29			0.09	1.11
Uniform Delay, d1	3.1	5.6			3.4			30.8			30.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.4	3.1			0.5			1.0			0.2	
Delay (s)	3.5	8.7			3.9			31.8			30.3	
Level of Service	0.0 A	0.7 A			A A			C			C	
Approach Delay (s)	~	8.2			3.9			31.8			30.3	
Approach LOS		A			A A			C			C	
• •		~~			<i>,</i> ,			•				÷
Intersection Summary												
HCM 2000 Control Delay			9.7	H	CM 2000	Level of S	Service		А			
HCM 2000 Volume to Capaci	ty ratio		0.65									
Actuated Cycle Length (s)			75.4		um of lost				11.9			
Intersection Capacity Utilization	on		99.5%	IC	U Level o	of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

Future Total (2027) PM - Signalized Access WSP Canada Inc.