

1309 Carling Avenue

Transportation Impact Assessment Strategy Report - Rev 3



May 2019





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 licensed¹ or registered² professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering or transportation planning □.

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

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

Dated at _	Ottawa	this	28	_ day of	August	, 201 <u>9</u>
_	(City)					

Name:

Mark Baker (Please Print)

Professional Title:

Senior Project Manager

Mark Bak

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

Office Contact Information (Please Print)
Address:
1223 Michael Street North, Suite 100
City / Postal Code:
Ottawa, Ontario, K1J 7T2
Telephone / Extension:
613-738-4160
E-Mail Address:
mark.baker@parsons.com

Westgate Shopping Centre – Phase 1 1309 Carling Avenue

Transportation Impact Assessment Report, Revision 3

prepared for: RIOCAN RioCan Yonge Eglinton Centre 2300 Yonge Street, Suite 500 Box 2386 Toronto, ON M4P 1E4

prepared by:



1223 Michael Street North Suite 100 Ottawa, ON K1J 7T2

August 28, 2019

476755 - 01000



Table of Contents

1. 5	SCREENING FORM	1
2. [DESCRIPTION OF PROPOSED DEVELOPMENT	1
2.1	1. PROPOSED DEVELOPMENT	1
3. I	EXISTING CONDITIONS	3
3.1	1. AREA ROAD NETWORK	
3.2	2. PEDESTRIAN AND CYCLING NETWORK	
3.3	3. TRANSIT NETWORK	
3.4	4. EXISTING STUDY AREA INTERSECTION	5
3.5	5. EXISTING INTERSECTION VOLUMES	6
3.6	6. EXISTING ROAD SAFETY CONDITIONS	7
4. I	PLANNED CONDITIONS	8
4.1	1. PLANNED STUDY AREA TRANSPORTATION NETWORK CHANGES	8
4.2	2. OTHER AREA DEVELOPMENTS	
5. 9	STUDY AREA	10
5 1		10
5.2		10
5.3	3. INTERSECTION DESIGN	
6 7		11
0. 7 I	HORIZON YEARS	
8. I	EXEMPTIONS REVIEW	
9. [DEVELOPMENT GENERATED TRAVEL DEMAND	
9.1	1. TRIP GENERATION AND MODE SHARES	
ę	9.1.1. Mode Shares	14
9.2	2. TRIP DISTRIBUTION	
9.3	3. TRIP ASSIGNMENT	
10.	BACKGROUND NETWORK TRAVEL DEMAND	
10		16
10		10 16
10.		10
-	10.2.1. Background 2020 Operations	16 19
4.0		
10.	.3. OTHER DEVELOPMENTS	20
11.	DEMAND RATIONALIZATION	
12.	DEVELOPMENT DESIGN	21
12	.1. DESIGN FOR SUSTAINABLE MODES	21
12.	2.2. CIRCULATION AND ACCESS	21
13.	BOUNDARY STREET DESIGN	21
14.	ACCESS INTERSECTIONS DESIGN	



14.	1.	LOCATION AND DESIGN OF ACCESS	22
14.	2.	INTERSECTION CONTROL	22
15.	TRAN	SPORTATION DEMAND MANAGEMENT	22
16.	TRAN	SIT	22
16.	1.	ROUTE CAPACITY	22
16.	2.	TRANSIT PRIORITY	22
17.	INTER	RSECTION DESIGN	23
17.	1.	PROJECTED TOTAL 2020 OPERATIONS	23
17.	2.	MMLOS ANALYSIS - 2020 CONDITIONS	24
17.	3.	PROJECTED TOTAL 2025 OPERATIONS	25
17.	4.	MMLOS ANALYSIS - 2025 CONDITIONS	28
18.	SUMI	MARY OF IMPROVEMENTS INDICATED AND MODIFICATION OPTIONS	28

List of Figures

Figure 1: Local Context	1
Figure 2: Site Plan	2
Figure 3: Area Transit Network	4
Figure 4: Existing Transit Stops	4
Figure 5: Existing Peak Hour Traffic Volumes	7
Figure 6: Carling Avenue Transit Priority Plan	9
Figure 7: Net Traffic Impacts - Carling E-E On-Ramp Closure and Modifications (MMM Group, 2016)	10
Figure 8: Transit Stations Located Close to Site	15
Figure 9: New and Pass-by Site Generated Traffic	16
Figure 10: Projected Background 2020 Traffic Volumes	17
Figure 11: Projected Background 2025 Traffic Volumes	
Figure 12: 1354 Carling Avenue Site-Generated Traffic	20
Figure 13: 900 Merivale Road Site-Generated Traffic	20
Figure 14: Projected Total 2020 Traffic Volumes	23
Figure 15: Projected Total 2025 Traffic Volumes	25

List of Tables

1
1
12
12
L3
LЗ
LЗ
L3
4
4
4
L7
18
19



Table 15: EBLT Queueing at Carling/Westgate E, Background 2025 Conditions	19
Table 16: MMLOS – Boundary Street Segments	21
Table 17: Projected Total 2020 Performance at Study Area Boundary Intersections	23
Table 18: EBLT Queueing at Carling/Westgate E, Projected Total 2020 Conditions	24
Table 19: MMLoS - Signalized Study Area Intersections, 2020 Horizon Year	24
Table 20: Projected Total 2025 Performance at Study Area Boundary Intersections	26
Table 21: EBLT Queueing at Carling/Westgate E, Projected Total 2025 Conditions	27

List of Appendices

- APPENDIX A Screening Form and Correspondence
- APPENDIX B City of Ottawa Traffic Data
- APPENDIX C City of Ottawa Collision Data
- APPENDIX D SYNCHRO 2020 Background Traffic Analysis
- APPENDIX E SYNCHRO 2025 Background Traffic Analysis
- APPENDIX F MMLOS Analysis
- APPENDIX G TDM Checklist
- APPENDIX H SYNCHRO 2020 Total Traffic Analysis
- APPENDIX I SYNCHRO 2025 Total Traffic Analysis



Transportation Impact Assessment Report

1. SCREENING FORM

The Screening Form was completed to confirm the need for a Transportation Impact Assessment (TIA) for Phase 1 of the Westgate Shopping Centre development. The Trip Generation, Location, and Safety triggers were met based on the proposed unit count, collisions along Carling, location within Carling Arterial Mainstreet Design Priority Area (DPA) and proximity to the Carling Avenue/Merivale Road intersection. The Screening Form and Correspondence are provided in Appendix A.

2. DESCRIPTION OF PROPOSED DEVELOPMENT

2.1. PROPOSED DEVELOPMENT

This study has been prepared by Parsons in support of Site Plan Application for the proposed development, located at 1309 Carling Avenue, Ottawa. The proposed development corresponds to Phase I of the Westgate redevelopment subdivision. As part of the application process, an Official Plan Amendment and Zoning By-Law Amendment were submitted to the City and approved on May 2017. The site is located in Ward 15 and the local context is illustrated in Figure 1.

The Phase 1 development will include 203 apartment units, 17,758 sq. ft of commercial retail and 2,381 sq. ft of commercial restaurant. The estimated date of occupancy is 2020. Site access will occur via at the existing Westgate Shopping Centre driveways: one on Merivale Road and the east entrance on Carling Avenue. The proposed development will replace an existing restaurant. The Site Plan is illustrated in Figure 2.



Figure 1: Local Context



3. EXISTING CONDITIONS

3.1. AREA ROAD NETWORK

Carling Avenue is an east-west arterial roadway with a six-lane cross-section and a 44.5 m right-of-way (ROW) protection within the study area. It extends from March Road in the west and Bronson Avenue in the east. The posted speed limit is 60 km/h. It is also identified as a Transit Priority Corridor.

Merivale Road is a north-south arterial roadway with a two-lane cross-section with a 30 m ROW protection. It extends from Island Park Drive in the north and Prince of Wales Drive in the south. Within the study area, the posted speed limit is 50 km/h. It is also identified as a Transit Priority Corridor.

Kirkwood Avenue is a north-south arterial roadway with a four-lane cross-section and a 26 m ROW protection within the study area. It extends from Wilber Avenue in the north and Merivale Road in the south. Within the study area, the posted speed limit is 50 km/h.

Highway 417 is an east-west Provincial Freeway with a six-lane cross-section within the study area. This highway is part of the Trans-Canada Highway and extends beyond the borders of Ottawa in both the west and east ends. The posted speed limit is 100 km/h. Access/egress to/from HWY 417 is provided via multiple on/off ramps on Carling Avenue within the vicinity of the Carling/Kirkwood intersections.

3.2. PEDESTRIAN AND CYCLING NETWORK

Regarding pedestrian connectivity, sidewalks exist along both sides of Carling Avenue and Merivale Road. A sidewalk is provided on the north side of Carling Avenue at the Queensway underpass. Pedestrian crossings are provided at all study area signalized intersections, providing good connectivity to adjacent residential neighbourhoods to the south and to the east. Connectivity to commercial and residential areas to the west is less convenient due to the presence of highway ramps. Currently, pedestrian crossing at the eastbound ramp is not demarcated. Pedestrian crossing at the westbound ramp is yield controlled and is announced approximately 60 meters before the point of conflict.

With regard to cycling, bike lanes currently exist along both sides of Carling Avenue and Merivale Road adjacent to the site. The westbound bike lane on Carling Avenue currently merges with traffic at the Queensway underpass, after which it intersects with the westbound highway off-ramp. No signage or elements announcing the presence of cyclists on Carling Avenue at this location and at the underpass have been identified at this moment. The 2013 City of Ottawa Transportation Master Plan identifies Carling Avenue, Merivale Road and Island Park Drive as Spine Routes and a multi-use pathway along the south side of Island Park Drive, providing connections to the communities north of the subject site. The City's Cycling Plan identifies "neighbourhood bikeways" proposed as a Phase 1 (2014-2019) City project, north of Highway 417.

3.3. TRANSIT NETWORK

Local transit service consists of local routes #81 and #85, frequent route #80 and peak routes # 101 and #103. Facilities on-site include a bus stop for local routes located within the site's internal roadway network, serving neighbourhoods to the north and south of the subject site. Bus stops for frequent and peak routes are also available along Carling Avenue adjacent to the subject site at Merivale Road and at the westernmost site-access, serving neighbourhoods to the west and the east of the subject site. The existing transit network is illustrated in Figure 3 and existing transit stops is illustrated as Figure 4.



3.4. EXISTING STUDY AREA INTERSECTION

Merivale/Westgate SC

The Merivale/Westgate SC intersection is a signalized 'T' intersection. The eastbound approach consists of a single right-turn lane and a single left-turn lane. The southbound approach consists of one shared right-turn/ through lane and a single through lane. The northbound approach consists of a single left-turn lane, a single through lane and a curbside bike lane. At this location, the only restricted movement is the banned eastbound left-turn for trucks.

Merivale/Carling

The Merivale/Carling intersection is a signalized fourlegged intersection. The westbound approach consists of a single left-turn lane, two through lanes and a single shared through/right-turn lane. The southbound approach consists of a single left-turn lane, a single through lane, a pocket bike-lane and a single right-turn lane. The northbound approach consists of a single left-turn lane, a single through lane, a curbside bike lane and a single channelized right-turn lane. Bus stops exist on Merivale Road at both sides of this approach. At this intersection, there are no restricted or banned movements.

Carling/Westgate Shopping Centre

The Carling/Westgate SC intersection is a signalized fourlegged intersection. The east and westbound approaches both consist of a single left-turn lane, two through lanes, a single shared through/right-turn lane and a curbside bike lane. The southbound approach consists of a single leftturn lane and a single shared through/right-turn lane. The northbound approach consists of a single all-movement lane. At this location, there are no restricted or banned movements.



Carling/West Site Access

The Carling/West Site Access intersection is a signalized 'T' intersection. The westbound approach consists of a curbside bike lane, a single shared through/right-turn lane and two through lanes. The eastbound approach consists of a single shared through/left-turn lane, two through lanes and a curbside bike lane. The southbound approach consists of a single shared left/right-turn lane. At this location, east and westbound U-turns are not permitted, and eastbound left-turns are restricted to permit trucks only.

Carling WB/Kirkwood N

The Carling WB/Kirkwood N intersection is a signalized four-legged intersection. The westbound approach consists of a shared through/right-turn lane, a through lane, a shared through/left-turn lane and a left-turn lane. The southbound approach consists of a single right-turn lane and two through lanes. The northbound approach consists of a single through lane and a single left-turn lane. At this location, there are no restricted or banned movements; however, Carling Avenue operates in the westbound direction only.



Carling EB/Kirkwood S

The Carling EB/Kirkwood S intersection is a signalized fourlegged intersection. The eastbound approach consists of a single channelized right-turn lane, two through lanes, a shared through/left-turn lane and a left-turn lane. The southbound approach consists of a shared through/leftturn lane and a single through lane. The northbound approach consists of two through lanes and a single rightturn lane. At this location, the only restricted movement is the 'no right-turn on red' in the northbound direction. Also, Carling Avenue operates in the eastbound direction only at this location.

3.5. EXISTING INTERSECTION VOLUMES

The existing peak hour traffic volumes (Figure 5) were collected by the City of Ottawa between 2014 and 2016. The resulting peak hour and full traffic volume counts are included as Appendix B.

Figure 5: Existing Peak Hour Traffic Volumes



During the pre-consultation with City of Ottawa Staff, it was requested that additional counts be conducted to assess the changes in travel patterns due to the Highway 417 widening and closure of the eastbound on-ramp from Carling Avenue westbound. A new count for the Carling/Westgate E intersection was conducted on March 19th, 2019 to better understand the change in traffic patterns with the closure of the 417 ON-Ramp west of this location. A new count was only completed at this location as there is a queue storage concern with the eastbound left-turn movement at this location.

3.6. EXISTING ROAD SAFETY CONDITIONS

Collision history for study area (2012 to 2016, inclusive) was obtained from the City of Ottawa. A total of 103 collisions have been reported within the study area. The majority (80%, or 82) of collisions involved property damage while the remaining (20%, or 20) collisions involved non-fatal injuries.

Regarding the type of collision, turning movement accounted for 31% (or 32 collisions) of collisions, rear end accounted for 28% (or 29 collisions) of collisions, sideswipe accounted for 20% (or 20 collisions) of collisions, angle accounted for 17% (or 17 collisions) of collisions, single vehicle other accounted for 3% (or 3 collisions) of collisions and other accounted for 2% (or 2 collisions) of collisions.

A standard unit of measure for assessing collisions at an intersection is based on the number collisions per million entering vehicles (MEV). The reported collision rate for the study area intersections are as follows:

- Carling Avenue at Merivale Road 1.09 MEV;
- Carling Avenue at Westgate SC E 0.31 MEV;
- Carling Avenue at Westgate SC W 0.08 MEV;
- Merivale Road at Westgate SC 0.09 MEV;
- Carling Avenue, between Highway 417 Ramps 76 and 65 0.23 MEV;
- Carling Avenue, between Highway 417 to Westgate SC W 0.02 MEV;
- Carling Avenue, between Meath Street to Archibald Street 0.04 MEV;
- Carling Avenue, between Archibald Street to Westgate SC W 0.04 MEV;
- Carling Avenue, between Westgate SC W to Westgate SC E 0.04 MEV; and
- Merivale Road, between Island Park Drive to Westgate SC 0.11 MEV.

It is noteworthy that in 2012 there was a fatal accident involving a cyclist and a passenger vehicle at the Carling/Archibald intersection.

With regard to U-turning vehicles in the area, 4 collisions were noted to involve U-turn movements (1 westbound on Carling at Westgate SC W, 2 eastbound on Carling at Merivale, and 1 westbound on the Westgate SC Access at Merivale).

Overall, there does not appear to be any prevailing safety issues within the study area. The source of the collision data is provided by the City of Ottawa and related analysis is provided within Appendix C.

4. PLANNED CONDITIONS

4.1. PLANNED STUDY AREA TRANSPORTATION NETWORK CHANGES

Within the study area, notable transportation network changes within the study area are described as follows.

Merivale Road

Identified on the Affordable Network are peak period bus lanes in the peak direction only. Transit signal priority would be provided between Carling Avenue and Baseline Road by reallocating existing traffic lanes.

Identified on the Network Concept is road widening to provide exclusive bus lanes and transit signal priority between Carling Avenue and Slack Road.

Carling Avenue

Identified on the Affordable Network are exclusive bus lanes and transit signal priority between Lincoln Fields Station and the Carling O-Train Station. The existing curbside traffic lanes would be converted to bus lanes in lieu of widening the corridor, which reduces the number of travel lanes for general traffic from 6 to 4.

Identified on the City's 2031 Network Concept Plan are further improvements to transit within the study area beyond 2031. Carling Avenue is identified as a future Light Rail Transit (LRT) corridor with a station planned at Merivale Road

Carling Transit Priority Study

In February 2017, the City of Ottawa initiated a study to develop a Recommended Functional Design Plan to provide for the introduction of Transit Priority Measures along Carling Avenue from Lincoln Fields to Bronson Avenue. Key elements of the design include transit priority measures, provisions for widened sidewalks and cycling facilities in key areas and intersection modifications and/or traffic control signal adjustments.

The current plan within the vicinity of the site is shown as Figure 6. The timing of the planned modifications is unknown at this time however, it is understood that implementation would ideally occur in the next five years.

Figure 6: Carling Avenue Transit Priority Plan



Source: https://ottawa.ca/en/carling-avenue-transit-priority-measures, Accessed 2018-11-05

Closure of the Highway 417 E-E On-Ramp at Carling Avenue:

In March 2018 the Ministry of Transportation closed the westbound Carling Avenue eastbound on-ramp to Highway 417 coming from the Westgate Mall. As indicated in the Queensway Expansion East project webpage, this closure is part of the Queensway Expansion from Maitland Avenue to Island Park Drive, which will add one lane in each direction. Construction is expected to conclude on 2020 and mitigation for redirected traffic is planned to be implemented at the Carling Avenue westbound/Kirkwood Avenue and Carling Avenue/Saigon Court intersections. Mitigation measures include:

- Two dedicated left-turn lanes on Carling Avenue westbound at Kirkwood Avenue to accommodate left-turning traffic, including redirected traffic from the closed E-E (eastbound) on-ramp;
- A raised concrete median island constructed between the through lanes and the left-turn lanes on Carling Avenue westbound at Kirkwood Avenue to prevent E-W off-ramp traffic from weaving across Carling Avenue westbound to turn left on to Kirkwood Avenue southbound;
- A dedicated left turn lane on Carling Avenue westbound at Saigon Court to accommodate traffic turning left on to Saigon, including redirected traffic from the E-W off-ramp seeking access to Carling Avenue eastbound/Kirkwood Avenue south;
- Widening of Saigon Court by one lane to provide additional capacity;
- New traffic signals at the Carling Avenue eastbound/Saigon Court intersection;
- New sidewalks and a segregated bike lane on Carling Avenue westbound; and
- Speed humps and other improvements on Coldrey Avenue.

The Traffic Assessment Report Summary for the Proposed Closure of Highway 417 E-E On-Ramp at Carling Avenue Interchange, produced by MMM Group in December 2016, identified a total of 360 vehicles during the AM peak and 250 vehicles during the PM peak would be displaced by this closure. Figure 7 illustrates the proposed traffic impacts of the updated traffic counts and proposed changes listed above.



Figure 7: Net Traffic Impacts - Carling E-E On-Ramp Closure and Modifications (MMM Group, 2016)

4.2. OTHER AREA DEVELOPMENTS

1400 Carling Avenue

Sharon Enterprise (the Owner) has submitted a Zoning By-Law Application to increase in height from 10 storeys to 13 storeys for the addition of two towers onto the existing five storey Embassy West retirement home. A total of 83 new units in the west tower and 280 new units in the east tower are proposed. No Transportation Impact Study was prepared for this application.

1354 - 1376 Carling Avenue

Holloway Lodging has submitted a Zoning By-Law Application for a new residential development consisting of four buildings on the properties municipally known as 1376 and 1354 Carling Avenue. Two buildings front Carling Avenue and are both proposed with 20 storeys and two 9 storey buildings are proposed further south on the site. The total number of residential units is 914 within the four buildings. Approximately 2,440 m² (26,200 ft²) of commercial is proposed as part of buildings fronting Carling Avenue. The Community Transportation Study projects an increase in two-way vehicle traffic of 186 to 253 veh/h during the weekday commuter peak hours.

900 Merivale Road

An expansion of the existing Community Health Centre is planned at the above-noted location, which is located approximately 250 m southeast of the subject development. The Transportation Overview (prepared by Parsons) projects an increase in two-way vehicle traffic of 40 to 50 veh/h during the weekday commuter peak hours.

5. STUDY AREA

5.1. TRANSIT

Transit has been discussed in Section 3.3.

5.2. NETWORK CONCEPT

No screenlines are present in the immediate vicinity of the proposed site, and the impact of the development is anticipated to be minimal.

5.3. INTERSECTION DESIGN

The proposed site will use existing accesses to the Westgate Shopping Centre. The Strategy Report will review and document any changes to the existing accesses, if required.

6. TIME PERIODS

The weekday morning and afternoon peak hours are considered the appropriate time periods for operational analysis for this development.

7. HORIZON YEARS

The expected build-out date for Phase I of the proposed development is assumed to be 2020. Considering the new Merivale Road (North) Community Design Plan and the construction of the new Civic Hospital Campus at Sir John Carling Site, a 5-years beyond full build-out will be analyzed for year 2025.

8. **EXEMPTIONS REVIEW**

Based on the foregoing analysis and review of the existing conditions in Step 2, the Scoping Report, it is recommended that, if required, any future work within the context of this TIA excludes the following modules and elements summarized in Table 1.

Module	Element	Exemption Consideration
4.1 Development Design	4.1.3 New Street Networks	Not required for Site Plan Applications.
4.2 Parking	4.2.2 Spillover Parking	According to Part 4 of Zoning By-Law 2008-250 (Table 101-R15-N83), the development will require a total of 104 parking spaces. The proposed development includes 138 above grade and below grade parking spaces and is therefore meeting Zoning By-Law requirements. As such, no parking spillover is anticipated.
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	The proposed development relies on the existing Carling Avenue and Merivale Road access. Carling Avenue and Merivale Road are classified as arterial roads, as such, no development-related traffic is anticipated to impact area collector and local roads.
4.8 Network Concept	All Elements	As part of the application process, an Official Plan Amendment and Zoning By-Law Amendment have been previously approved for the proposed development.

Table 1: Exemptions	Review Summary
---------------------	-----------------------

In addition to the above recommendations of the Exemptions Review, the following exemptions are also proposed and summarized in Table 2.

Table 2: Additional Recommended Exemptions Summary

Module	Element	Exemption Consideration						
4.2 Parking	4.2.1 Parking Supply	The proposed de requirements. As se	levelopment such, no parkii	meets ng suppl	the y issu	minimum ies are antic	parking ipated.	space

9. DEVELOPMENT GENERATED TRAVEL DEMAND

9.1. TRIP GENERATION AND MODE SHARES

The proposed redevelopment includes 203 apartment units, 17,758 ft² of commercial retail, and 2,381 ft² of commercial restaurant and will replace the existing Monkey Joe's Bar & Grill (approximately 4,200 ft²). Traffic from the new retail land use and the existing restaurant land use will be generated using the ITE Trip Generation Manual 10th Edition and the TRANS Trip Generation Study for the residential use. Vehicle trip generation rates are summarized in Table 3.

Land Llag	Data Source	Trip Rate			
Land Use		AM Peak	PM Peak		
High Rise Apartment	TRANS	T = 0.24(du)	T = 0.27(du)		
Shopping Centre	ITE 820	-	T = 3.81(X)		
High Turnover Restaurant	ITE 932	-	T = 9.77(X)		
T = Average Vehicle	Trip Ends				
Notes: X = 1000 ft ² Gross I	Floor Area				
du = Dwelling unit					

Table 3: Vehicle	Trip Generation	Rates for Retail	and Residential	Uses
	mp achorador	i natos ior notan	and Residential	0303

Commercial Trip Generation

As ITE trip generation surveys only record vehicle trips and typically reflect highly suburban locations (with little to no access by travel modes other than private automobiles), adjustment factors appropriate to the Ottawa study area context were applied to attain estimates of person trips for the proposed Phase 1 development. To convert ITE vehicle trip rates to person trips, an auto occupancy factor and a non-auto trip factor were applied to the ITE vehicle trip rates. Our review of available literature suggests that a combined factor of approximately 1.3 is considered reasonable to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. The person trip generation for the proposed office and retail developments is summarized in Table 2.

Land Lisa	Data Source	Area	PM	PM Peak (Person Trips/hr)			
Land Use	Data Source	Alea	In	Out	Total		
Shopping Centre	ITE 820	17,758 ft ²	42	46	88		
High Turnover Restaurant (proposed)	ITE 932	2,381 ft ²	18	12	30		
High Turnover Restaurant (existing)	ITE 932	4,200 ft ²	-32	-21	-53		
	Total 'Net' Person Trips Increase			37	65		

Table 4: Modified Person Trip Generation - Retail and Restaurant

The person trips shown in Table 2 for the proposed commercial developments were then reduced by modal share values. Given the development's location in the Merivale area and the site's close proximity to transit facilities available on Carling Avenue, the active and transit modal splits are expected to be higher than outlined in the TRANS OD Survey. Table 5 outlines the mode shares for the Merivale area and selected mode splits. The resulting mode shares for the proposed retail and restaurant and existing restaurant development are summarized in Table 6, Table 7, and Table 8 respectively.

		24 hrs			AM Peak			PM Peak			Solootod
	From	To District	Within	From	To District	Within	From	To District	Within	Average	Selected
	District	District	District	District	District	District	District	District	District		
Auto	61	61	55	53	60	43	64	59	52	56	45
Passenger	15	15	15	11	12	15	14	14	15	14	10
Transit	18	18	7	26	22	11	17	19	9	16	30
Bicycle/Walk	4	4	19	5	3	20	3	6	20	9	15
Other	2	2	4	5	3	11	2	3	5	4	

Table 5: Merivale Mode Shares

Table 6: Proposed Retail Modal Site Trip Generation

Travel Mode	Mode Share	PM Peak (Person Trips/h)					
	Wode Share	In	Out	Total			
Auto Driver	45%	19	21	40			
Auto Passenger	10%	5	5	10			
Transit	30%	12	14	26			
Non-motorized	15%	6	6	12			
Total Person Trips	100%	42	46	88			
L	ess Pass-by (10%).	-2	-2	-4			
Tot	al 'New' Auto Trips	17	19	36			

Table 7: Proposed Restaurant Modal Site Trip Generation

Traval Mada	Mode Share	PM Peak (Person Trips/h)					
	woue Share	In	Out	Total			
Auto Driver	45%	9	6	15			
Auto Passenger	10%	2	2	4			
Transit	30%	5	3	8			
Non-motorized	15%	2	1	3			
Total Person Trips	100%	18	12	30			
Total 'Existing' Auto Trips		9	6	15			

Table 8: Existing Restaurant Modal Site Trip Generation

Traval Mada	Mode Share	PM Peak (Person Trips/h)					
	Woue Share	In	Out	Total			
Auto Driver	45%	15	10	25			
Auto Passenger	10%	4	2	6			
Transit	30%	9	6	15			
Non-motorized	15%	4	3	7			
Total Person Trips	100%	32	21	53			
Total 'Existing' Auto Trips		15	10	25			

Residential Tip Generation

Using the TRANS Trip Generation rates outlined in Table 3 and the TRANS Trip Generation mode splits for the residential component of the site, the total amount of person trips generated by the proposed 215 residential units is summarized in Table 9.

Table 9: Residential Person Trip Generation

Land Use	Data	Data Unite		ak (Person [·]	Trips/hr)	PM Peak (Person Trips/hr)		
	Source	Units	In	Out	Total	In	Out	Total
High Rise Apartment	TRANS	203 du	30	102	132	85	52	137

As shown in Table 9, a total of 132 and 137 person-trips per hour are projected to travel to/from the proposed residential development during the weekday morning and afternoon commuter peak hours. Using the model splits from the TRANS Trip Generation report, these person trips were broken down by modal shares as outlined in Table 10.

Travel Mode	Mode	Mode Share		ak (Person T	rips/h)	PM Peak (Person Trips/h)			
	AM	PM	In	Out	Total	In	Out	Total	
Auto Driver	37%	40%	11	38	49	34	21	55	
Auto Passenger	8%	9%	3	8	11	8	4	12	
Transit	41%	37%	12	42	54	31	20	51	
Non-motorized	14%	14%	4	14	18	11	8	19	
Total Person Trips	10	0%	30	102	132	85	52	137	
	Total 'New' A	uto Trips	11	38	49	34	21	55	

Table 10		Model	Site Trin	Generation -	Residential
I able TO	. INANG	WUUUEI		Generation -	NESIUCIIUAI

To determine the net increase in site trips, the existing restaurant generated trips were removed from the total proposed retail and residential generated trips. As such, Table 11 outlines the net increase in trips generated by the proposed development.

Traval Mada	AM P	eak (Person Tri	ps/h)	PM Peak (Person Trips/h)			
Traver Mode	In	Out	Total	In	Out	Total	
Auto Driver	11	38	49	47	38	85	
Auto Passenger	3	8	11	11	9	20	
Transit	12	42	54	39	31	70	
Non-motorized	4	14	18	15	12	27	
Total Person Trips	30	102	132	113	89	202	
Less Retail Pass-By (30%)	0	0	0	-2	-2	-4	
Total 'New' Auto Trips	11	38	49	45	36	81	

Table 11: Net Total Site Person-Trip Generation

As shown in Table 11, the resulting number of potential 'new' two-way vehicle trips for the proposed developments is approximately 49 and 81 veh/h during the weekday morning and afternoon peak hours, respectively. Transit trips in the area are expected to increase by approximately 54 to 70 persons per hour and active mode trips are expected to increase by approximately 18 to 27 persons per hour.

9.1.1. MODE SHARES

As shown in Table 5, the chosen transit and non-motorized mode shares for the development are already twice that identified for the rest of the Merivale area. As there are no future transit stations planned within a kilometer of the site (Figure 8) and the site is not within a TOD zone, it is unlikely the future transit and active modes to/from this retail site will increase significantly. As such, the future mode shares are assumed to be the same as existing for the 2020 and 2025 horizon years.

Figure 8: Transit Stations Located Close to Site



9.2. TRIP DISTRIBUTION

Traffic distribution was based on the 2011 NCR Household Origin – Destination Survey, existing volume splits at study area intersections and our knowledge of the surrounding area. The resultant distribution is outlined as follows.

- 30% to/from the west via HWY 417;
- 20% to/from the east via HWY 417;
- 10% to/from the west via Carling Avenue;
- 10% to/from the east via Carling Avenue;
- 10% to/from the north via Merivale Road;
- 10% to/from the south via Merivale Road;
- 5% to/from the north via Kirkwood Avenue; and
- <u>5%</u> to/from the south via Kirkwood Avenue.
- 100%

9.3. TRIP ASSIGNMENT

New site generated trips were assigned to the study area intersections using the foregoing distribution. Figure 9 illustrates the resulting volume assignment of the new and pass-by site generated vehicle trips used in this analysis.

Figure 9: New and Pass-by Site Generated Traffic



10. BACKGROUND NETWORK TRAVEL DEMAND

10.1. TRANSPORTATION NETWORK PLANS

The transportation network changes have been discussed within Section 4.1 and have been considered within the horizon analysis. It is noted that the future Carling Avenue Light Rail Transit (LRT) corridor falls outside the scope of the foregoing study, as is identified in the Transportation Master Plan as a post 2031 measure.

10.2. BACKGROUND GROWTH

The historical traffic count data for the Carling Avenue and Merivale Road intersection (years 2010, 2014, 2015 and 2016) was reviewed to determine the background growth along Carling Avenue. In general, Carling Avenue has experienced a 2.5% to 3% growth and Merivale Road has experienced a -0.5% to a 2% growth. Therefore, 2.5% growth was applied to Carling Avenue, 2% to Kirkwood Avenue, and 1.5% to Merivale Road.

10.2.1. BACKGROUND 2020 OPERATIONS

The background 2020 traffic volumes were derived by superimposing the other study area developments and the background growth rate on the existing traffic volumes. The resulting background 2020 traffic volumes are illustrated in Figure 10. Table 12 provides a summary of the background 2020 operations at the study area intersections. The SYNCHRO model output of background 2020 conditions is provided within Appendix D.

Figure 10: Projected Background 2020 Traffic Volumes



Table 12: Projected Background 2020 Performance at Study Area Intersection

	Weekday AM Peak (PM Peak)								
Intersection	(Critical Movement		Intersection 'as a whole'					
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c			
Carling/Westgate SC E	A(D)	0.47(0.81)	EBT(EBT)	4.6(14.6)	A(C)	0.42(0.75)			
Merivale/Westgate SC	A(A)	0.36(0.48)	SBT(EBL)	4.4(6.3)	A(A)	0.32(0.39)			
Carling/Merivale	E(E)	0.98(0.93)	NBL(WBL)	28.6(33.0)	A(C)	0.56(0.75)			
Carling/Westgate SC W	A(A)	0.27(0.44)	WBT(WBT)	1.7(2.2)	A(A)	0.27(0.44)			
Carling (Kirkwood N	D(F)	0.85(1.05)	SBR	21 5(97 0)		0.04(4.47)			
Carling/ Kirkwood N	D(F)	0.84(1.27)	WBT	51.5(67.9)		0.64(1.17)			
	F(B)	1.04(0.73)	EBT						
Carling/Kirkwood S	F(E)	1.03(0.93)	SBL	56.1(31.6)	E(C)	0.96(0.73)			
	E(F)	0.98(1.03)	NBR						
Note: Analysis of intersections assum	es a PHE of 0.95 a	nd a saturation flow ra	te of 1800 veh/h	/lane					

As shown in Table 12, the study area intersections "as a whole" will operate at an acceptable LoS 'D' or better during peak hours with the exception of the Carling/Kirkwood S intersection which operates at an LoS 'E' during the morning peak hour and the Carling/Kirkwood N intersection which operates at an LoS 'F' during the afternoon peak hour.

The following critical movements at study area intersection are operating close to or above capacity (LoS 'E' or 'F') during peak hours:

Morning peak hour:

- NBL at the Carling/Merivale intersection
- EBT at the Carling/Kirkwood S intersection
- NBR at the Carling/Kirkwood S intersection
- SBL at the Carling/Kirkwood S intersection

Afternoon peak hour:

- WBL at the Carling/Merivale intersection
- SBR at the Carling/Kirkwood N intersection
- WBT at the Carling/Kirkwood N intersection
- NBR at the Carling/Kirkwood S intersection
- SBL at the Carling/Kirkwood S intersection

The eastbound left-turn queue for background 2020 conditions at the Carling/Westgate E intersection is summarized in Table 13. It should be noted that a new count for this location was conducted on March 19th, 2019 to better understand the change in traffic patterns with the closure of the 417 ON-Ramp west of this location.

later setting	Eastbound Left-Turn Queue (m) AM Peak (PM Peak)					
Intersection	Available Storage	Average Queue	95 th Percentile Queue			
Carling/Westgate E	10(35)	55(#75)				
Note: # and ~ symbols indicate the queue is operating above capacity and queues may not clear intersection during one signal cycle.						

Table 13: EBLT Queueing at Carling/Westgate E, Background 2020 Conditions

As shown in Table 13, the average 95th percentile EBLT queue is projected to fall within existing storage capacity in both morning and afternoon peak hours. However, it is understood from discussions with the City's Traffic Services Department (Signal Operations) that there are times of day currently when the EBLT queue extends beyond available storage.

10.2.2. BACKGROUND 2025 OPERATIONS

The background 2025 traffic volumes were derived by superimposing the other study area developments and the background growth rate on the existing traffic volumes. The resulting background 2025 traffic volumes are illustrated in Figure 11. Table 14 provides a summary of the background 2025 operations at the study area intersections. The SYNCHRO model output of projected background 2025 conditions is provided within Appendix E.





	Weekday AM Peak (PM Peak)							
Intersection	(Critical Movement		Intersection 'as a whole'				
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c		
Carling/Westgate SC E	A(E)	0.47(1.00)	EBT(WBT)	5.1(25.5)	A(E)	0.47(1.00)		
Merivale/Westgate SC	A(A)	0.38(0.48)	SBT(EBL)	4.4(6.4)	A(A)	0.34(0.40)		
Carling/Merivale	E(D)	0.98(0.83)	NBL		B(D)	0.68(0.89)		
	A(E)	0.55(0.98)	WBL	29.7(58.3)				
	B(E)	0.63(0.91)	EBT					
Carling/Westgate SC W	A(B)	0.40(0.67)	WBT(WBT)	2.2(5.5)	A(B)	0.40(0.66)		
Carling /Kirkwood N	D(F)	0.88(1.26)	WBT	22 8/100 4)		0.00(1.00)		
Carling/ Kirkwood N	D(F)	0.85(1.05)	SBR	32.8(109.4)	D(F)	0.88(1.23)		
	F(C)	1.12(0.72)	EBT					
Carling/Kirkwood S	E(F)	0.98(1.02)	NBR	71.2(32.6)	F(C)	1.02(0.77)		
	F(D)	1.06(0.90)	SBL					
Note: Analysis of intersections assume	es a PHF of 0.95 a	nd a saturation flow ra	te of 1800 veh/h	/lane.				

Table 14: Projected Background 2025 Performance at Study Area Intersection

The implementation of the transit priority lanes on Carling Avenue reduces the capacity of Carling Avenue as generalpurpose lanes are repurposed for transit only. As such, there is an overall reduction in level of service at major intersections along the corridor which results in the increase overall intersection delays and v/c ratios compared to background 2020 conditions.

As shown in Table 14, the study area intersections "as a whole" will operate similar to background 2020 conditions with the exception of the Carling/Kirkwood S intersection which is projected to decrease in level of service from an 'E' to an 'F' in the morning peak hour and a 'C' to an 'E' in the afternoon peak hour. The Carling/Westgate E intersection is also projected to decrease in overall level of service from a 'C' to an 'E'.

The critical movements at study area intersections will also operate similar to background 2020 conditions. The following critical movements at study area intersection are operating close to or above capacity (LoS 'E' or 'F') during peak hours:

Morning peak hour:

- NBL at the Carling/Merivale intersection
- EBT at the Carling/Kirkwood S intersection
- NBR at the Carling/Kirkwood S intersection
- SBL at the Carling/Kirkwood S intersection

Afternoon peak hour:

- WBT at the Carling/Westgate E intersection
- WBL at the Carling/Merivale intersection
- EBT at the Carling/Merivale intersection
- SBR at the Carling/Kirkwood N intersection
- WBT at the Carling/Kirkwood N intersection
- NBR at the Carling/Kirkwood S intersection

The eastbound left-turn queue for 2025 background conditions at the Carling/Westgate E intersection are projected to be similar to 2020 background conditions. The eastbound left-turn queue for background 2025 conditions at the Carling/Westgate E intersection is summarized in Table 15.

	Eastbound Left-Turn Queue (m) AM Peak (PM Peak)				
Intersection	Available Storage	Average Queue	95 th Percentile Queue		
Carling/Westgate E	80	10(35)	55(#75)		
Note: # and ~ symbols indicate the queue is operating above capacity and queues may not clear intersection during one signal cycle.					

Table 15: EBLT Queueing at Carling/Westgate E, Background 2025 Conditions

As shown in Table 15, the 95th percentile EBLT queue is projected to fall within existing storage capacity in both morning and afternoon peak hours. However, it is understood from discussions with the City's Traffic Services Department (Signal Operations) that there are times of day currently when the EBLT queue extends beyond available storage.

10.3. OTHER DEVELOPMENTS

The City of Ottawa's Development Applications webtool has been used to determine if there are proposed developments within the area of influence of the proposed development. These developments have been discussed in greater detail in Section 4.2 and 2 will have an impact on the study area intersections. Figure 12 and Figure 13 illustrate for the 1354-1376 Carling Avenue and 900 Merivale Road developments. These have been included in the background analysis.



Figure 12: 1354 Carling Avenue Site-Generated Traffic

Figure 13: 900 Merivale Road Site-Generated Traffic



11. DEMAND RATIONALIZATION

The analysis herein has noted that there are performance issues at the Carling Avenue and Kirkwood intersections due in part to existing conditions, background traffic growth and these intersections providing access/egress to adjacent Highway 417 ramps. As the Phase 1 site-generated traffic volumes are extremely low compared to the existing and projected background traffic, no changes to the site trip generation or distribution analysis is proposed as traffic operations will not be affected. What could help to reduce vehicle travel demand in the Carling and Merivale Corridors is the current Highway 417 widening (reallocation of east-west commuter traffic) and implementation of transit priority along Carling and Merivale (i.e., better transit service would attract more transit users).

12. DEVELOPMENT DESIGN

12.1. DESIGN FOR SUSTAINABLE MODES

The proposed development falls within the Area X – Inner Urban for the City's Zoning By-Law. Vehicle parking is proposed in both underground parking and a surface parking lot. A total of 215 parking spaces will be provided, meeting the minimum of 136 spaces required (96 for residential, 19 for visitors, 21 for shopping centre). With regard to bicycle parking, 137 spaces will be provided which meets the City's Bylaw Requirements (102 for residential and 10 for shopping centre).

Sidewalk facilities are provided along the Carling Avenue and Merivale Road frontage and include pedestrian access within the existing Westgate Shopping Centre.

Transit service is provided in the Westgate Shopping Centre by OC Transpo. No additional service or stop locations are proposed/required.

12.2. CIRCULATION AND ACCESS

The existing driveway accesses will be used for the proposed development and they currently support delivery vehicles and OC Transpo vehicles. No circulation or operational issues are noted with the proposed 29 space surface parking lot or the loading bay adjacent to Merivale Road.

13. BOUNDARY STREET DESIGN

The boundary streets for the development are Carling Avenue and Merivale Road. It is assumed that Carling Avenue has undergone a complete street exercise during the latest renewal, and Merivale Road has not had one completed.

The multi-modal level of service analysis for the road segments along the boundary streets adjacent to the site is summarized in Table 16, with detailed analysis provided in Appendix F. The existing MMLoS targets for the Arterial Main Streets were used for this site.

	Level of Service								
Road Segment	Pedestria	an (PLoS)	Bicycle	e (BLoS)	Trans	it (TLoS)	Truck	(TkLoS)	
	PLoS	Target	BLoS	Target	TLoS	Target	TLoS	Target	
Carling Avenue	E	С	D	С	D	D	С	D	
Merivale Road	С	С	С	С	D	D	D	E	

Table 16 ⁻ MMLOS -	Boundar	v Street Segments
10010 10.10101200	Doundar	y ou ou ooginonito

As shown in Table 16, the pedestrian and bicycle target level of service is not currently met on Carling Avenue. The travel speeds, assumed to be above the posted 60km/h, govern the pedestrian LoS, and the 3 travel lanes govern the bicycle

LoS. Carling Avenue would need to be reduced to an operating speed of 30-50 km/h and narrowed to 2 lanes per direction to meet the MMLOS targets. If the bike lanes were physically separated, the BLoS will achieve an 'A'. This measure could be implemented in conjunction with the Carling Transit Priority Study measures.

14. ACCESS INTERSECTIONS DESIGN

14.1. LOCATION AND DESIGN OF ACCESS

The proposed development will use the existing Westgate Shopping Centre accesses. No changes or modifications are proposed as part of this development.

14.2. INTERSECTION CONTROL

The proposed development will use the existing Westgate Shopping Centre accesses. No changes or modifications are proposed as part of this development.

15. TRANSPORTATION DEMAND MANAGEMENT

The TDM checklist is attached as Appendix G. Some of the TDM measures that the proponent is providing/considering are as follows:

- Direct and safe access to public sidewalks along Merivale Road and Carling Avenue;
- Direct and safe access to transit stops;
- Provide more than minimum bicycle requirements than are outlined in the City By-law;
- Unbundle parking cost from monthly rent; and,
- Provide multi-modal travel options information package to new residents.

16. TRANSIT

16.1. ROUTE CAPACITY

As outlined within Section 9.1.1, the forecasted 'new' two-way transit trips are estimated to be 54 trips (12 in, 42 out) during the AM peak and 70 trips (39 in, 31 out) during the PM peak. During the PM peak, the in/outbound trips represent approximately 75% of a single bus (55 passengers), approximately 55% of an articulated bus (75 passengers), or approximately 46% of a double decker bus (90 passengers).

Westgate Shopping Centre is serviced by five routes (see Section 3.3) with over 11 stops during the peak hour. The impact on the buses, depending on origins and destinations, could translate to 5 to 6 passengers per bus during the AM peak and 6 to 7 passengers during the PM peak, with some trips at popular times attracting even more. For routes that are already well used in peak periods, such as Routes 80 and 85, this may be enough new demand to warrant an increased level of service.

16.2. TRANSIT PRIORITY

No transit priority is noted or recommended during the area during the study horizons.

17. INTERSECTION DESIGN

17.1. PROJECTED TOTAL 2020 OPERATIONS

The total projected 2020 traffic volumes were derived by superimposing the site-generated traffic volumes onto 2020 background traffic volumes. The resulting total projected 2020 traffic volumes are illustrated in Figure 14



Figure 14: Projected Total 2020 Traffic Volumes

Table 17 provides a summary of the total projected operations at the study area boundary intersection based on the SYNCHRO (V10) traffic analysis software for Phase 1 build-out year 2020. The SYNCHRO model output of 2020 projected conditions is provided within Appendix H.

	Weekday AM Peak (PM Peak)							
Intersection	Critical Movement			Intersection 'as a whole'				
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c		
Carling/Westgate SC E	A(D)	0.58(0.81)	EBT(WBR)	8.7(16.2)	A(D)	0.53(0.81)		
Merivale/Westgate SC	A(B)	0.34(0.69)	SBT(EBL)	4.6(10.9)	A(A)	0.32(0.42)		
Carling/Merivale	B(E)	0.70(0.91)	NBL(NBL)	22.6(30.5)	A(C)	0.59(0.76)		
Carling/Westgate SC W	A(A)	0.28(0.45)	WBT(WBT)	1.5(2.7)	A(A)	0.28(0.45)		
	D(F)	0.80(1.08)	WBT		C(F)	0.80(1.02)		
Carling/Kirkwood N	D(F)	0.81(1.06)	SBR	20.2(57.6)				
	C(F)	0.75(1.08)	NBL	20.2(57.6)				
	A(E)	0.46(0.97)	NBT					
	F(B)	1.05(0.76)	EBT					
Carling/Kirkwood S	F(C)	1.07(0.80)	SBL	54.0(27.7)	F(C)	1.05(0.77)		
	E(D)	0.99(0.81)	NBR					
Notes: Analysis of intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane. Future horizon year timing plans were optimized to account for the changes in traffic demand.								

Table 17: Projected Total 2020 Performance at Stud	ly Area	Boundary	Intersections
--	---------	----------	---------------

As shown in Table 17, the study area intersections "as a whole" will operate with similar levels of service as projected in the 2020 background conditions. Slight increases in delays and capacity ratios at the site accesses, due to the addition of proposed development traffic. The following critical movements at study area intersection are operating close to or above capacity (LoS 'E' or 'F') during peak hours:

Morning peak hour:

- EBT at the Carling/Kirkwood S intersection
- NBR at the Carling/Kirkwood S intersection
- SBL at the Carling/Kirkwood S intersection

Afternoon peak hour:

- NBL at the Carling/Merivale intersection
- SBR at the Carling/Kirkwood N intersection
- WBT at the Carling/Kirkwood N intersection
- NBL at the Carling/Kirkwood N intersection
- NBT at the Carling/Kirkwood N intersection

The eastbound left-turn queue for total projected 2020 conditions at the Carling/Westgate E intersection is summarized in Table 18.

Table 18: EBLT Queueing at Carling/Westgate E, Projected Total 2020 Conditions

	Eastbound Left-Turn Queue (m) AM Peak (PM Peak) Available Storage Average Queue 95 th Percentile				
Intersection					
Carling/Westgate E	80 30(45) 80(#75)				
Note: # and ~ symbols indicate the queue is operating above capacity and queues may not clear intersection during one signal cycle.					

As shown in Table 18, the average and 95th percentile EBLT queue is projected to fall within existing storage capacity in both morning and afternoon peak hours. However, it is understood from discussions with the City's Traffic Services Department (Signal Operations) that there are times of day currently when the EBLT queue extends beyond available storage. It should be noted that implementing the permissive-protected eastbound left-turn phase in the morning peak will reduce projected queues.

Mitigative Measures

With no changes to the existing six (6) general purpose lanes on Carling along the site's frontage, the projected EBL queue can be mitigated by providing the movement with additional green time (i.e. optimize signal timing).

17.2. MMLOS ANALYSIS - 2020 CONDITIONS

The MMLoS analysis for the study area signalized intersections is summarized in Table 19. The detailed MMLoS analysis is provided as Appendix F. The existing lane configuration is assumed for the 2020 horizon year.

	Level of Service								
Intersection	Pedestria	Pedestrian (PLoS) Bicycle (BLoS		(BLoS)	oS) Transit (TLoS)			Truck (TkLoS)	
	PLoS	Target	BLoS	Target	TLoS	Target	TkLoS	Target	
Carling/Westgate SC E	F	С	F	С	E	D	С	D	
Carling/Westgate SC W	E	С	D	С	С	D	F	D	
Merivale/Westgate SC	С	С	D	С	В	D	С	E	
Carling/Merivale	F	С	F	С	F	D	С	D	
Carling/Kirkwood N	F	С	E	С	F	D	D	D	
Carling/Kirkwood S	E	С	F	С	F	D	D	D	

Table 19: MMLoS - Signalized Study Area Intersections, 2020 Horizon Year

The letters identified in red text in Table 19 do not meet the MMLoS Targets for their designated area (general urban area). At study area intersections, the pedestrian and bicycle target levels of service are not met. The following discussion regarding these modes is provided:

• Pedestrian – High pedestrian level of service is difficult to achieve (PLoS 'A' is impossible to achieve) at signalized intersections. At study area intersections, pedestrians cross 4 to 7 lanes of traffic on Carling Avenue. Prohibiting

right-turn on red or providing advance pedestrian walk phases will also help to improve the PLoS, but will decrease the transit and vehicle levels of service;

- Bicycles While curb-side bike lanes are provided east and westbound along Carling Avenue adjacent to the site, there are no left-turn facilities which results in poor BLoS. Providing left-turn boxes would improve the BLoS to 'A' at intersections along Carling Avenue. However, with the implementation of bike boxes, the right-turn-on-red will need to be prohibited. Another measure could be implementing cross-rides. This measure can be implemented in conjunction with the Carling Transit Priority Study;
- Transit The TLoS is not met at the Carling/Westgate SC E, Carling/Merivale, Carling/Kirkwood N, and Carling/Kirkwood S intersections due to high delays experienced by transit; and,
- Truck The TkLoS is not met at the Carling/Westgate SC W intersection due to only having one receiving lane on the north leg.

17.3. PROJECTED TOTAL 2025 OPERATIONS

The total projected 2025 traffic volumes were derived by superimposing the site-generated traffic volumes onto 2025 background traffic volumes. The resulting total projected 2025 traffic volumes are illustrated in Figure 15.



Figure 15: Projected Total 2025 Traffic Volumes

Table 20 provides a summary of the total projected operations at the study area boundary intersections based on the SYNCHRO (V10) traffic analysis software For Phase 1 build out plus 5-year horizon. The SYNCHRO model output of 2025 projected conditions are provided within Appendix I.

	Weekday AM Peak (PM Peak)							
Intersection	(Critical Movemen	it	Intersection 'as a whole'				
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c		
Carling/Westgate SC E	A(F)	0.50(1.06)	EBL(WBT)	5.1(38.3)	A(F)	0.47(1.06)		
Merivale/Westgate SC	A(B)	0.38(0.69)	SBT(EBL)	4.4(10.9)	A(A)	0.34(0.43)		
Opyling (Maringle	E(D)	0.98(1.01)	NBL	20 6(45 2)	B(D)	0.68(0.89)		
Carling/ Merivale	A(E)	0.56(1.07)	WBL	29.0(45.2)				
Carling/Westgate SC W	A(B)	0.41(0.69)	WBT(WBT)	2.1(4.4)	A(B)	0.40(0.68)		
	D(F)	0.81(1.11)	WBT					
Carling /Kirkwood N	D(F)	0.85(1.10)	SBR	22 0/74 8)		0.82(1.07)		
Carling/ Kirkwood N	D(F)	0.78(1.27)	NBL	32.0(74.8)	D(F)			
	A(F)	0.49(1.09)	NBT					
	F(C)	1.12(0.79)	EBT					
Carling/Kirkwood S	E(D)	0.98(0.84)	NBR	71.0(28.2)	F(C)	1.03(0.80)		
	F(D)	1.08(0.83)	SBL					
Notes: Analysis of intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane. Future horizon year timing plans were optimized to account for the changes in traffic demand.								

Table 20: Projected Total 2025 Performance at Study Area Boundary Intersections

As shown in Table 20, the study area intersections are projected to operate similar to the background 2025 conditions, with slight increase in delay and capacity ratios due to site traffic. The exception is the westbound through movement at the Carling/Westgate E intersection which is projected to decrease from LoS 'E' to LoS 'F'. It should be noted that to improve WBT operations at the Carling/Merivale intersection, additional through time would be required, which would result in less time for the EBL turn movement. This would degrade the EBL performance and increase potential queues to the extent that the median through lanes could be blocked at times. Mitigative measures for the EBL queueing issues are discussed below.

As mentioned above, the implementation of the transit priority lanes on Carling Avenue reduces the capacity of Carling Avenue as general-purpose lanes are repurposed for transit only. As such, there is an overall reduction in level of service at major intersections along the corridor which results in the increase overall intersection delays and v/c ratios compared to total projected 2020 conditions.

The following critical movements at study area intersection are operating close to or above capacity (LoS 'E' or 'F') during peak hours:

Morning peak hour:

- NBL at the Carling/Merivale intersection
- EBT at the Carling/Kirkwood S intersection
- NBR at the Carling/Kirkwood S intersection
- SBL at the Carling/Kirkwood S intersection

Afternoon peak hour:

- WBT at the Carling/Westgate E intersection
- WBL at the Carling/Merivale intersection
- EBT at the Carling/Merivale intersection
- SBR at the Carling/Kirkwood N intersection
- WBT at the Carling/Kirkwood N intersection
- NBL at the Carling/Kirkwood N intersection
- NBT at the Carling/Kirkwood N intersection

The eastbound left-turn queue for future 2025 conditions at the Carling/Westgate E intersection is summarized in Table 21.

	Eastbound Left-Turn Queue (m) AM Peak (PM Peak)					
Intersection	Available Storage Average Queue 95th Percent					
Carling/Westgate E	80 10(~50) 40(#105)					
Note: # and ~ symbols indicate the queue is operating above capacity and queues may not clear intersection during one signal cycle.						

Table 21: EBLT Queueing at Carling/Westgate E, Projected Total 2025 Conditions

As shown in Table 21, the 95th percentile EBLT queue is projected to exceed existing storage capacity in the afternoon peak hour. However, a reduction in the EBLT volume by approximately 10% would result in a projected 95th percentile queue length that would consistently fit within the available storage lane. Additionally, should the 6-lane cross section be maintained along the site frontage and the signal timing optimized, the 95th percentile projected eastbound left-turn queue at this location would be approximately 80m, which would not exceed storage capacity.

It is important to consider that future network changes, such as Stage 2 LRT and the Carling Avenue transit priority measures will significantly alter travel patterns in the surrounding region and reduce Carling Avenue vehicle capacity. Projecting future traffic volumes under these conditions is challenging due to the uncertainty of cumulative downstream effects, but the impacts to regional/background traffic should still be considered. In this case, peak hour traffic along Carling Avenue should be expected to decrease over time, with adoption of transit and the reduction of lane capacity, which incentivises people to choose alternative routes. This transit mode share increase is expected to occur beyond the 2025 horizon year of this report.

Mitigative Measures

The cumulative effect of site-generated traffic from the proposed development and other developments in the area will impact operations at the Carling/Westgate E signalized intersection and along Carling Avenue eastbound. With planned transit priority measures in place, should the EBL queue extend beyond the existing storage lane, one eastbound through lane would be blocked leaving a single through lane for general traffic. This would severely impact operations along Carling Avenue eastbound and may result in increased rear-end collisions and general traffic usage of the bus lane.

Once the City has introduced the transit lanes and assuming that taking green time away from the east-west movement along Carling Avenue is not feasible, then possible mitigation measures to be explored by the City at that time could include:

- Option 1: Introduce a new EBLT lane at the Carling/Merivale intersection;
 - o This provides an additional access to the site for vehicles travelling from the west;
 - Implementation only requires modifying the existing median on the west leg and removing the EBLT prohibition;
 - It should be noted the EBLT prohibition is in place as historically the NCC had concerns over Island Park Drive being used by drivers attempting to by-pass congestion along Carling Avenue or HWY 417;
 - o The EBLT movement at this location would likely need to be fully protected;
 - Consideration could be given to providing additional storage length for the EBLT at this location by reducing the length of the existing WBLT storage serving the Best Western (i.e., Carling/Westgate E intersection) on the premise this auxiliary lane is currently underutilized;
- Option 2: Provide dual EBLT lanes at the Carling/Westgate E intersection;
 - As the EBLT volume is approaching 300 veh/h, dual EBLT lanes would be warranted based on TAC standards;
 - Implementation would require significant geometric design changes along Carling Avenue (e.g. modifying curbs, removal of the bike lanes, need to provide two on-site receiving lanes, removal of on-site lay-by, etc.);

- Option 3: Introduce a new EBLT lane at the Carling/Westgate W intersection;
 - This provides an additional access to the site for vehicles travelling from the west;
 - Implementation would require significant geometric design changes (e.g. modifying curbs, removal of the bike lanes, etc.).

Based on the foregoing, implementing an EBLT lane at the Carling/Merivale intersection is considered the most practical and cost effective mitigative measure, although engagement with the NCC would be necessary. It is recommended that prior to detailed design of the Carling Avenue Transit Priority Plan, the Carling Avenue Corridor west of Merivale Road be reassessed by the City, with updated traffic data, to determine the appropriate lane arrangements.

17.4. MMLOS ANALYSIS - 2025 CONDITIONS

Given the proposed changes to Carling Avenue are solely reassignment of existing lane uses and the lane geometry does not change, the multi-model level of service for these intersections remains the same as total 2020 conditions (Table 19). The projected MMLoS analysis is provided as Appendix F.

18. SUMMARY OF IMPROVEMENTS INDICATED AND MODIFICATION OPTIONS

Based on the results summarized herein, the following findings and conclusions are provided:

Proposed Site

- The proposed development is located within the Westgate Shopping centre at 1309 Carling Avenue and will
 redevelop the existing restaurant (4,200 ft²) and parking area in the southeast corner by the Carling Avenue and
 Merivale Road intersection;
- In total, the development will include 203 residential units and approximately 15,940 ft² net increase of retail and restaurant space on the ground floor; and
- The development will be accessed through the existing Westgate Shopping Centre signalized driveway intersections on Carling Avenue and Merivale Road.

Existing and Background Conditions

- A desktop review identified background growth rates of 2.5% for Carling Avenue, 2% for Kirkwood Avenue, and 1.5% for Merivale Road;
- The study area intersections will experience a travel pattern shift due to the closure of the Carling E-E on-ramp to Highway 417 and median modifications at the Carling Avenue and Kirkwood Avenue N intersection; and,
- Overall, the study area intersections 'as-a-whole', are projected to operate acceptably during the peak hours during the 2020 and 2025 background horizon years. Exceptions include the Carling/Kirkwood N and Carling/Kirkwood S intersections during both horizon years and the Carling/Westgate SC E in during the background 2025 horizon year.

Projected Conditions

- Overall, the study area intersections are projected to operate similar to the background conditions during the 2020 and 2025 total horizons;
- With regard to MMLoS street segment targets, the boundary streets meet targets with exception of the pedestrian, cyclist, and transit targets. Improving the BLoS can be done in conjunction to the Carling Transit Priority Study by implementing separated cycle lanes. It would be difficult and expensive to meet the PLoS target as Carling Avenue is a six-lane arterial; and,

- Storage capacity issues are forecasted at the 2025-time horizon year for the eastbound left-turn lane at the Carling/Westgate SC E intersection (if the Carling Transit Priority Plan is implemented and existing travel lanes on Carling Avenue are converted to bus lanes);
 - The preferred measure to mitigative potential EBLT queues would be to provide an opportunity for the EBLT movement at the Merivale/Carling intersection (assuming sufficient storage length can be provided);
 - At detailed design of the Carling Transit Priority Plan, it is recommended that the Carling Avenue Corridor west of Merivale Road be reassessed, with updated traffic data, to determine the appropriate lane arrangements.

Site Plan

- The number of vehicle and bicycle parking spaces meets the City's minimum By-Law requirement;
- No issues are noted with respect to on-site circulation or truck turning movements; and,
- There are no issues with the existing transit service capacity for the existing or projected total site-generated transit riders.

Based on the foregoing, approval of the proposed Site Plan is recommended from a transportation perspective. However, it is recommended that the eastbound left-turn capacity issue at the site, identified herein, be resolved prior to the start of subsequent phases of development.

Prepared By:

RaiNA

Rani Nahas, E.I.T. Transportation Analyst



Mark Baker, P.Eng. Senior Transportation Project Manager




1223 Michael Street, Suite 100, Ottawa, Ontario, K1J 7T2 P: +1 613.738.4160 | F: +1 613.739.7105 | www.parsons.com

City of Ottawa 2017 TIA Guidelines	Date	8/27/2018
TIA Screening Form	Project	Riocan - Westgate
	Project Number	476755
Results of Screening	Yes/No	
Development Satisfies the Trip Generation Trigger	Yes	
Development Satisfies the Location Trigger	Yes	
Development Satisfies the Safety Trigger	Yes	

Module 1.1 - Description of Proposed Development	
Municipal Address	1309 Carling Avenue
Description of location	CON 1 OF PT TWP LOT 33 R O W;EASE CARLING W RP5R14579;PARTS 1 5 & 7
Land Use	Residential; Commercial
Development Size	203 aparment units; 21,150 s.f. retail and restaurant
Number of Accesses and Locations	Two existing accesses on Carling Avenue and one existing access on Merivale Road
Development Phasing	N/A
Buildout Year	2020
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Townhomes or Apartments	
Development Size	203	Units
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers		
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	No	
Development is in a Design Priority Area (DPA) or Transit- oriented Development (TOD) zone. (See Sheet 3)	Yes	
Location Trigger Met?	Yes	

Module 1.4 - Safety Triggers			
Posted Speed Limit on any boundary road	<80	km/h	
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No		
A proposed driveway is 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) or within auxiliary lanes of an intersection;	No		
A proposed driveway makes use of an existing median break that serves an existing site	No		
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	Yes		
The development includes a drive-thru facility	No		
Safety Trigger Met?	Yes		

TRANSPORTATION COMMENTS (July 9, 2019)	PARSONS RESPONSE
Transportation Engineering	
Given the impact of site vehicle traffic on the boundary streets and intersections with	TDM Measures Checklist included in Appendix G.
future phases, the applicant should review more closely Transportation Demand	
Management strategies and submit a TDM Measures Checklist along with the submitted	
TDM supportive development design and infrastructure checklist. Early inclusion of TDM	
strategies to support a shift in modal shares is encouraged.	
We concur that the applicant should explore the removal of the EB LT restriction on	Noted.
Carling Avenue at Merivale Road with the NCC.	
Traffic Signal Operations	
The posted speed limit along Carling Avenue is 60 km/hr.	This has been corrected in the text.
It is understood that Phase 1 of this project does not generate too much traffic and that	Noted.
the eastbound left turn into Westgate will have minimal impact from this phase of the	
development. Future phases will add more impact to the eastbound left turn into the site	
at Westgate and without any other eastbound left turn access, it will be very difficult from	
a signal timing perspective to provide more green time at this only entrance.	
Traffic Signal Design	
If there are any future proposed changes in the existing roadway geometry for the	Noted.
purpose of construction of a new TCS(s) or modifications to existing TCS(s) the City of	
Ottawa Traffic Signal Design and Specification Unit is required to complete a review for	
traffic signal plant re-design and provide the actual re-design.	
If the proposed traffic signals are warranted/approved for installation or modifications to	
existing TCS are approved, and RMA approved, please forward an approved geometry	
detail design drawings (dwg digital format in NAD 83 coordinates) including base mapping,	
existing and new underground utilities/sewers, new/existing catch basins locations, Turn-	
Radius Modeling and approved pavement markings drawings in separate files for detail	
traffic plant design lay out.	
Please send all digital (CADD) design files to Peter.Grajcar@ottawa.ca 613 580 2424 ext.	
23035.	
Transit Services	
Bus Routes 80 and 81 currently service Westgate Mall on-site. There are no short-term	Noted.
plans to modify the routing for this service, but a review will likely be done within the	
scope of Phase 2 LRT network review. In the advent of detours related to construction on-	
site, please coordinate with OC Transpo for detours. No further comments on TIA.	

TRANSPORTATION COMMENTS (May 14, 2019)	PARSONS RESPONSE
Transportation Engineering	
As per the Westgate Secondary Plan, the developer is required to:	Noted, proponent to be informed.
Construct a cycle track along the entire north side of 1309 Carling Avenue	
frontage in phase two (2) of the development of the Westgate Lands to the	
satisfaction of the General Manager of Planning, Infrastructure and	
Economic Development Department.	
Construct a cycle track along the west side of Merivale Road between	
Carling Avenue and Highway 417 underpass in the final phase of the	
development of the Westgate Lands to the satisfaction of the General	
Manager of Planning, Infrastructure and Economic Development	
Department.	
Traffic Signal Operations	
The previous comments below have not been adequately addressed in the analysis:	
The cumulative effect of site generated traffic from proposed developments in	This comment has been included in Section 17.3
the area will impact operations at the Carling Avenue/Westgate E signalized	of the TIA based on discussions with Traffic
intersection and along Carling Avenue Eastbound. With planned Transit Priority	Signals (Leng Ha) 17 May 2019
measures in place, queues extending beyond the existing storage lane will block	
one eastbound through lane, leaving a single lane for general traffic. This will	
severely impact operations along Carling Avenue EB and may result in	
increased rear end collisions and general traffic usage of the bus lane.	
A detailed review of expected EBL queues at the Carling Avenue/Westgate SC	Mitigative measures have been included in both
E intersection relative to the existing available storage is required. Reference	Sections 17.1 and 17.3 of the TIA. Follow-up
the Carling Transit Priority Corridor functional design, which includes an	discussion with Traffic Services (Phil Edens) 23
eastbound bus lane through the intersection of Carling Avenue and Westgate	May 2019 regarding historical NCC influence at
SC W. EBL queues at Carling Avenue/Westgate SC E spilling out of existing	Carling/Merivale intersection.
storage will block one of the two remaining eastbound general traffic lanes.	
Mitigating measures should be discussed in the report.	
Carling Avenue and Westgate SC E:	
It is difficult to expect reductions in EBL volumes at Carling Avenue and	The comment on page 26 of the TIA has been
Westgate SC E. The TIA report comments on page 26 contradict comments on	clarified within the report. Transit mode shares
page 14 regarding mode shares.	are expected to increase with the construction of
	the Carling Transit Priority Measures over time.
	However these changes in transit mode shares
	are expected to be realized beyond the horizon
	years of this development.
The analysis presented in the updated TIA does not consider or discuss, in the	Consideration to the WBT movement has been
2025 total projected conditions, WB through traffic conditions in the pm (v/c =	included in the 2025 Total Projected Conditions
1.06, LOS F). In terms of signal timing, additional WB through time would be	within the TIA.
required (taken away from the EBL turn movements) to address poor WB	
operations affecting the corridor and in particular the signal at Carling Avenue	
and Merivale Road. This will degrade EBL performance, increase queues and	
result in the issues identified in the first TIA circulation comments.	
Consultant should clarify the "10%" reduction stated on page 26. Does this refer to queue	This has been clarified within the report. The
length? It should be stated as a required percentage reduction in volumes.	"10%" refers to a reduction in volumes.

Traffic Engineering	
10. Eastbound left turn volumes at Carling Avenue and Westgate E are underestimated as	
mentioned in the previous circulation. Even if U-turns volumes are removed, the site	Figure depicting 1354 Carling Site Generated
generated left turn volumes (from 1354 Carling Avenue) shown in Figure 11 (allocated to	Trips updated to reflect existing turn prohibitions
Carling Avenue and Westgate W and Carling Avenue and Merivale Road) should be	and correct turning movements projected in the
allocated to Carling Avenue and Westgate E. This results in an eastbound left volume	CTS Study. (Figure numbers changed so this
increase of 76 AM (47 PM). Queues will extend beyond existing storage and into the	image is no longer Figure 11).
adjacent signal at Carling Avenue and Westgate W.	
11. The proposed mitigation measure of banning U-turns would likely force the movement	This comment has been revised.
to occur onsite and not reduce the volumes using the eastbound left turn lane.	
12. The cumulative effect of site generated traffic from proposed developments in the area will impact operations at Carling Avenue and Westgate E and along Carling Avenue Eastbound. With planned Transit Priority measures in place, queues extending beyond the existing storage lane will block one eastbound through lane, leaving a single lane for general traffic. This will severely impact operations along Carling Avenue EB and may result in increased rear end collisions and general traffic usage of the bus lane.	Synchro and queueing analysis results have been revised to address this issue.
13. There is an error in Table 17, PM – WBR v/c=1.05 for Carling Avenue and Westgate E.	Revised.
14. For projected scenarios, if it is assumed transit priority measures are in place on	Carling Transit Priority Measures included in
Carling Avenue, Synchro files and analysis should be revised to reflect the 2-lane general	background 2025 and total future 2025 horizon
traffic configuration.	years.

TRANSPORTATION COMMENTS (January 24, 2019)	PARSONS RESPONSE
General	
1. Carling Avenue is designated as an Arterial road within the City's Official Plan with a	
ROW protection of 44.5 metres. The ROW limits are to be shown on all the drawings and	Noted Architect to be advised
the offset distance (22.25 metres) is to be dimensioned from the existing centerline of	Noted. Architect to be advised.
pavement.	
2. A 5.0 metres x 5.0 metres sight triangle would be required at the intersection of Carling	Noted. Architect to be advised.
Avenue and Merivale Road and is to be dimensioned from the new ROW protection limits.	
Transit Services	
TIA Section 3.3	
3. In addition to the figure showing the area transit network, a diagram illustrating the	Included as Figure 4
locations of nearby bus stops should also be included.	
TIA Section 16	
4. Where did the forecasted 'new' two-way transit trips reported in Section 16.1 come	Section 16.1 was not updated for the Step 5
from? These do not match the figures reported in Section 9.1 (Table 10: Net Total Site	submission. It has been revised for this current
Person-Trip Generation).	submission.
5. Table 10 reports 60 (AM) and 86 (PM) new transit trips per hour. Peak period service is	
planned to operate eleven trips per hour across three different routes. This could	
translate to six or seven additional customers per bus, with some trips at popular times	Acknowledged in TIA Section 16.1
attracting even more. For routes that are already well used in peak periods, such as	rection reduced in this section roll
Routes 80 and 85, this may be enough new demand to warrant an increased level of	
service.	
6. For future reference, while the real full capacity of a bus may be higher, OC Transpo	Noted
currently employs the following Council-approved capacity standards:	Noted.
7. During peak periods, during the busiest hour and point along the route, frequency of	
service is planned so that there are, on average, 45 customers on board standard 40-foot	Noted
buses, 70 customers on board articulated buses, and 90 customers on board double-	itotea.
decker buses.	
Site Plan	
8. In conjunction with the implementation of the Carling Avenue Transit Priority Measures	
project, targeted for completion by the end of 2019, the existing bus stop for Carling	
westbound at Merivale Road may be relocated to the west side of the intersection,	Noted. Architect to be advised.
adjacent to this development. OC Transpo may require the owner to construct a concrete	
bus shelter pad in the City right-of-way.	
9. In the northeast portion of the site, OC Transpo requests that the existing concrete	
sidewalk at the southwest corner of the Merivale Road / Shopping Centre roadway	Noted Architect to be advised
intersection be extended westward to provide a continuous sidewalk connection between	wored. Architeer to be duvised.
Merivale Road and the OC Transpo stop.	

The updated TIA report implies that the congestion issues should be resolved as part of	Noted.
the Carling Transit Priority project. However, this was raised as part of the Transit Priority	
Project and the response from Transit Planning is below for your reference.	
Carling Avenue and Westgate East Entrance	
Traffic Engineering concern:	
8. Recent development circulations show expected eastbound left turn volumes in the	
range of approximately 237-365 veh/hr during peaks with 100-150 m queues beyond	
existing storage. The proposed design should be reviewed in relation to the development	
of Westgate Mall. With a curbside bus lane, Carling Avenue will effectively be reduced to	
1 eastbound through lane.	
Transit Planning response:	
9. Any road modifications approved through the Development Review process can be	
incorporated into the bus lane design, if the timeframes are suitable. The bus lane project	
itself does not include any physical modifications, but modifications by others can be	
incorporated if known in time.	
10. Please include Signals Design (Peter Grajcar) and Traffic Signal Operations (Leng Ha) in	
any further design discussions related to bike facilities through the 4 signals in the area	
(one signal was either missed or tie-in to existing not considered in the proposed designs).	
Traffic Signal Design	
Traffic Signal Design and Implementation Unit provided comments on March 13, 2019 to D	evelopment Review Branch.
The following summary is provided:	Noted, proponent to be informed.
Existing underground utilities at the corner quadrants of this intersection are rather	
saturated.	
Isignal pole locations must be AODA compliant.	
$\ensuremath{\mathbbmath$\mathbbms$}$ The submitted design will require modifications (TWSI placement and surface treatment	
changes) to meet City design requirements.	

Appendix B Traffic Data



Total

CARLING AVE

0 0

1759 ļ†

╈

2

***** R

0 N

1757

Ottawa

2017-Mar-17

Page 1 of 4

2017-Mar-17

Page 2 of 4



Start Time: 07:00

Ottawa

Total

CARLING AVE

2017-Mar-17

Comments

\$**1** -

*

0 0

1612 ļ†

╈

0

0 0

1612 1612

Page 3 of 4

2017-Mar-17

Page 4 of 4

		-	urn	ing I	Νον	eme	nt C	uno	t - Fu	II Str	hpr	Sum	mar	۲ ۳	spor	÷		
					KIR	KWC		AV	ENG	₫ CA	RLII	NG /	٩VE					
Survey Da	te:	Vednes	sday,	May 0 [,]	4, 201	9			Total O	bserv	ed U-1	urns					AAD	r Fact
							2	Vorthbol	0 :pur		South	:punoc	0				<u>.</u> 90	
							-	Eastbou	0 :pu		Westt	:puno	0					
								1	ull Stu	dy								
			KIRK	WOOD	AVE	z						CAF	SLING	3 AVE				
I	2	Jorthbol	pun		S	outhbo	punc		I	ш	astbol	pur		_	Vestbo	pund		
Period	Ц	ST	RT	NB TOT	Ц	ST	RT	SB TOT	STR TOT		ST	RT	TOT EB	5	ST	RT	WB TOT	STR TOT
07:00 08:00	244	254	0	498	0	278	254	532	1030	0	0	0	0	374	744	156	1274	1274
00:60 00:80	288	288	0	576	0	403	397	800	1376	2	0	0	2	343	1038	231	1612	1614
09:00 10:00	232	368	0	009	0	292	298	590	1190	0	0	0	0	317	984	210	1511	1511
11:30 12:30	223	431	0	654	0	363	307	670	1324	0	0	0	0	268	1108	290	1666	1666
12:30 13:30	226	406	0	632	0	391	320	711	1343	0	0	0	0	308	1034	286	1628	1628
15:00 16:00	247	440	0	687	0	421	373	794	1481	0	0	0	0	204	1993	290	2487	2487
16:00 17:00	228	491	0	719	0	408	394	802	1521	0	0	0	0	189	2286	326	2801	2801
17:00 18:00	216	508	0	724	0	491	391	882	1606		0	0	-	234	2008	329	2571	2572
Sub Total	1904	3186	0	5090	0	3047	2734	5781	10871	3	0	0	3	2237	11195	2118	15550	15553
U Turns				0				0	0				0				0	0
Total	1904	3186	0	5090	0	3047	2734	5781	10871	3	0	0	3	2237	11195	2118	15550	15553
EQ 12Hr	2647	4429	0	7075	0	4235	3800	8036	15111	4	0	0	4	3109	15561	2944	21614	21618
Note: These v	alues ar	e calcula	ated by	multiply	ing the	totals by	v the ap	propria	ie expansi	on facto	2		-	39				
AVG 12Hr	2382	3986	0	6368	0	3812	3420	7232	13600	4	0	0	4	2798	14005	2650	19453	19457
Note: These v	olumes	are calcu	lated b	y multip	lying th	e Equiv.	alent 12	2 hr. tota	als by the ,	AADT fa	ctor.		<u>.</u>	9				
AVG 24Hr	3120	5221	0	8342	0	4993	4481	9474	17816	5	0	0	5	3666	18346	3471	25483	25488
Note: These v	olumes	are calcu	lated b	y multip	lying the	e Avera	ge Dail	y 12 hr.	totals by 1	12 to 24	expansi	on facto	-	31				

Transportation Services - Traffic Services

Turning Movement Count - Full Study Diagram

Ottawa



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

Page 1 of 1

2017-Mar-17

Page 1 of 1

Con Con	(Ē	rans	Iod	rtati	uo	Ser	vice	' S	Tra	ffic	Ser	vice	ŝ	N.O.	35	895									
MMM	n	Tur	ning	Mo	vem	ent	Cou	nt - '	15 M	linut	e Su	mm	ary I	Repc	ŗ			- W			Transp	ortation	Service	s - Traffic	Services	
			Y	IRK	MOC	ac	AVE	N Ø) CA	RLI	4 0 V	1VE						0	ttawa	Turni	na Move	ment Cou	nt - Cvcli	st Volume	Report	Work Order
Survey Date:	Ŵ	ednes	day, N	1ay 0₄	1, 2016	6		Tot	al Obs	served	I U-Tu	rns									D					35895
							Eastb	:pound:	0 0	~ ~	Vestbou	:pung	0 -								KIR	WOOD AVI	E N @ CAR	LING AVE		
	КК	KWO		л Л					,	CAR	'UNG	AVE	, ,					Count E	Date: Wei	dnesday, Ma	y 04, 2016				Start Time:	02:00
Ź	orthbound	q		South	punoq			_	Eastbou	pu		Ŵ	estboun	q						KIRKWC	DOD AVE N			CARLING AVE		
Time Period LT	ST	RT	TOT L	ч.	зт R	, ⊤ ⊤	ST TO	ц Ц	ST	RT	∎ TOT	LT	ST	RT	тот 101	OT R	Grand Total	Time Period	d Northb	ound Sou	Ithbound	Street Total	Eastbound	Westbound	- Street Total	Grand Total
07:00 07:15 54	50	0	104	9	52 4	6 0	2 19(0 9	0	0	0	67	142	29	238 2	238	434	02:00 08:00	0 2		0	2	0	1	1	3
07:15 07:30 64	5	0	118 (. 0	76 6.	4 14	10 25	0 8	0	0	0	85	188	33	306	306	564	08:00 00:00	0 00	_	2	2	0	۲	-	в
07:30 07:45 59	69	0	128 (0	38 6	5 13	33 26	•	0	0	•	89	170	33	292	292	553	09:00 10:0	0	-	з	3	0	۲	-	4
07:45 08:00 67	81	0	148	300	32 8	5 16	310	5 0	0	0	0	133	244	61	438 4	138	753	11:30 12:3	00		0,	е с	0 0	. ,	. .	4 (
08:00 08:15 72	20	0	142 (0	26 10	39 2 3	15 37	7 0	0	0	0	80	180	41	301	301	678	12:30 13:3	0,00		- ~	71 55	o c	- v	- 4	n †
08:15 08:30 63	69	0	132 (300	¥	3 17	7 30	9	0	0	7	88	295	61	444	146	755	16:00 17:00	5 Q		5 0		0 0	9 01	9 0	م :
08:30 08:45 81	65	0	146	0	30 11	19 24	-6E 61	9	0	0	•	72	273	62	407	107	802	17:00 18:00	0		-	5	0	-	-	9
08:45 09:00 72	2	0	156 (9	33	6 13	3 9 29	5	0	0	0	103	290	67	460	160	755	Total	14	4	12	26	0	13	13	39
09:00 09:15 64	89	0	153 (. 0	7. 7.	2	12 30	0 0	0	0	0	73	259	61	393	393	693	Comme	ent:							
09:15 09:30 54	81	0	135 (9 0	38 6	7 13	35 271	0 0	0	0	0	92	226	56	374 0	374	644									
09:30 09:45 66	108	0	174 (7. 7.	2	14 31	8	0	0	•	79	258	55	392	392	710									
09:45 10:00 48	06	0	138 (77 8	7 1E	34 30.	0	0	0	0	73	241	38	352	352	654									
11:30 11:45 62	109	0	171 (° 0	33 7	7 16	30 33	•	0	0	•	65	275	56	396	396	727									
11:45 12:00 63	120	0	183 (~ 0	36 7.	0 1E	36 33:	0 6	0	0	0	59	301	72	432 4	432	771									
12:00 12:15 51	97	0	148 (° 0	32 7.	9 16	31 30	0 6	0	0	0	85	285	06	460 4	460	769									
12:15 12:30 47	105	0	152 (0	12 8	1 15	33.34	5	0	0	•	59	247	72	378 ;	378	723									
12:30 12:45 63	106	0	169 (0	05 7.	9 16	34 35.	0 2	0	0	•	66	246	69	381 ;	381	734									
12:45 13:00 49	66	0	148 (° 0	32 7	6 16	38 31	9	0	0	•	86	250	76	412	412	728									
13:00 13:15 60	113	0	173 (0	8 60	7 15	96 36	06	0	0	0	70	284	68	422	422	791									
13:15 13:30 54	88	0	142	~ 0	35 7	8	33 30.	5 0	0	0	0	86	254	73	413 4	413	718									
15:00 15:15 66	113	0	179 (0	10 1(72 2 1	12 39	1 0	0	0	•	59	429	88	576	576	967									
15:15 15:30 77	109	0	186	0	6 00	6 15	96 38.	2	0	0	0	58	494	68	620 (620	1002									
15:30 15:45 49	108	0	157 (0	28 11	10 25	38 39	5 0	0	0	0	44	523	5	621 (621	1016									
15:45 16:00 55	110	0	165 (~ 0	33 6.	5 14	18 31.	3 0	0	0	0	43	547	80	670 (670	983									
16:00 16:15 53	112	0	165 (0	05 11	11 21	16 38	- 0	0	0	•	55	571	69	695 (595	1076									
16:15 16:30 68	121	0	189 (<i>;</i> 0	9 8	7 16	36 37.	5 0	0	0	•	48	558	91	697 (697	1072									
16:30 16:45 42	104	0	146 (<i>;</i> 0	38 8	8 15	36 33.	2	0	0	0	42	585	5	721	721	1053									
16:45 17:00 65	154	0	219	0	06 1()8 2 1	14 43	0 5	0	0	0	44	572	72	688 (588	1121									
17:00 17:15 50	134	0	184 (0	06 1(2 C	90 39	0	0	0	-	39	540	82	661 (662	1052									
17:15 17:30 55	121	0	176 (0	30 9.	0	20 39	0 9	0	0	0	51	590	89	730	730	1126									

Page 1 of 1 Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary. 2017-Mar-17

Page 1 of 1

Comment:

17:45 18:00 54 117 0

139 112

171 0

17:00 17:15 50 134 17:15 17:30 55 121 17:30 17:45 57 136

~

> > 2017-Mar-17

Note: U-Turns are included in Totals.

W.O. 3589!	in	Otta	Ma	Transport	ation S	ervices -	Iraffic Sen	rices	Work Order 35895
			Tu	rning Mover	nent Col	unt - Pedest	rian Volume	Report	
				KIR	KWOOD /	VE N @ CAR	LING AVE		
		Count Date	e: Wednesday,	May 04, 2016				Start Time:	02:00
		Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
		07:00 07:15	0	0	0	.	0	÷	-
CTD	Para J	07:15 07:30	-	-	2	5	-	9	8
101	Total	07:30 07:45	0	2	2	4	2	9	8
96	101	07:45 08:00	1	12	13	7	1	8	21
60	151	02:00 08:00	2	15	17	17	4	21	38
71	128	08:00 08:15	-	11	12	2	3	10	22
94	148	08:15 08:30	0 0	10	6 1	4 .	0 0	4 (14
82	130	08:30 08:45 09:00	л —	o 1	- 12	4 00	0 0	9 10	13
	111	08:00 09:00	4	37	41	23	7	30	71
:	t	09:00 09:15	0	10	10	4	۰-	2	15
99	110	09:15 09:30	0	4	4	£	+	4	8
52	82	09:30 09:45	0	16	16	80	0	8	24
30	54	09:45 10:00	1	8	6	6	3	12	21
8	5	09:00 10:00	1	38	39	24	5	29	68
557	897	11:30 11:45	-	œ	6	4	-	5	14
		11:45 12:00	م	6	14	ı ع	9	; -	25
•	0	12:00 12:15	0 0	ю •	ю т		N	ۍ م	
557	897	0221 61:21	0	4	4	7	0	7	• م
		11:30 12:30	9	24	30	14	ъ ·	23	53
summary.		12:30 12:45		s a	9 0		- (00 0	14
		12:45 13:00	- 0	χ	л (1 0	τ ο τ	9	15
		13:00 13:15	⊃ ,	5 0	ъ с	- (× į	11
		12:30 13:30	- 0	o 5	2	2 6	۲đ	20	5
		15:00 15:00	0	- -	1 , a	1	D LL	10	10
		15:15 15:30	o	о ц		ით	o c	5 01	17
		15:30 15:45	-	80	6	6	4	13	22
		15:45 16:00	-	7	8	12	ę	15	23
		15:00 16:00	3	27	30	38	13	51	81
		16:00 16:15	0	2	7	4	2	9	8
		16:15 16:30	с [.]	12	15	1	4	15	30
		16:30 16:45	en l	∞ :	;	9	7	œ -	19
		16:45 17:00	0	11	11	5	1	9	17
		16:00 17:00	9	33	39	26	6	35	74
		17:00 17:15	. .	4	15	8	en 1	5	26
		17:15 17:30	0	∞ !	œ	б	0	თ	17
		17:30 17:45	~ ~	10	12	4	9,0	50	32
		17:40 10:00	⊃ °	0 85	•	4 35	с С	1	2 00
		11/100	n 8	30	41	50	7 5	41	88
		1 OTal	28	243	L/Z	204	68	212	543

Turning Movement Count - Heavy Vehicle Report

Transportation Services - Traffic Services

Ottawa

KIRKWOOD AVE N @ CARLING AVE

Wednesday May 04 2016 Survey Date:

	א המוני				ay, w	r S	, FOI 0													
			KIRK	MOO	D AVE	z						СA	RLIN(G AVE						
		Northb	puno			Southb	puno				Eastbo.	pun		5	Vestbou	pur	1			
Time F	Period	Ц	ST	RT	TOT	Ц	ST	RT	s TOT	STR TOT	ΓŢ	ST	RT	TOT	Г	ST	RT	тот	STR TOT	Grand Total
02:00	08:00	6	19	0	28	0	6	6	18	46	0	0	0	0	16	57	12	85	85	131
08:00	00:60	10	17	0	27	0	21	6	30	57	-	0	0	-	1	49	10	20	71	128
00:60	10:00	4	17	0	21	0	23	10	33	54	0	0	0	0	13	68	13	94	94	148
11:30	12:30	5	12	0	23	0	7	4	25	48	0	0	0	0	16	52	4	82	82	130
12:30	13:30	80	5	0	13	0	13	7	24	37	0	0	0	0	16	53	80	4	77	114
15:00	16:00	9	17	0	23	0	12	6	21	44	0	0	0	0	80	43	15	99	99	110
16:00	17:00	7	7	0	14	0	12	4	16	30	0	0	0	0	9	35	7	52	52	82
17:00	18:00	5	9	0	5	0	10	e	13	24	-	0	0	-	-	24	4	59	30	54
. qns	Fotal	60	100	0	160	0	111	69	180	340	2	0	0	2	87	381	87	555	557	897
U-Turn	s (Heav	vy Veh	nicles)		0				0	0				0				0	0	0
Tot	a	60	100	0	0	0	111	69	180	340	2	0	0	2	87	381	87	555	557	897
Heavy ∖	'ehicles	includ	e Buse	s, Sing.	e-Unit 1	Frucks	and Arti	culated	1 Truck	s. Furth	er, they	/ ARE ii	ncluded	l in the l	Furning	Mover.	nent Co	ount Su	ummary.	

2017-Mar-17

Comment:

Page 1 of 1

							Ottav	DA	Transpo	rtation Se	rvices - T	raffic Servi	ices	Work Order 35895
le la	Transpo	rtation \$	Services - T	raffic Serv	ices	Work Order		Turr	ing Moven	nent Count	- 15 Min U-	Turn Total R	Report	
Uttawa	-					35895			KIRKV	VOOD AVE	N @ CARL	ING AVE		
	Turning Move	ement Co	ount - Pedest	rian Volume	Report		Survey Dat	e: Wec	dnesday, May 04	l, 2016				
	K	RKWOOD	AVE N @ CAR	LING AVE			Time F	beriod	Northbound	Southbound	Eastbound	Westbound	Total	
Count Date: Wed	nesday, May 04, 2016				Start Time:	00:20	00-20	07-15					c	
Time Period (E or W (proach SB Approach Crossing) (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total	07:15	07:30	0	0	0	0	0	
07:00 07:15	0	0	- ۱	0		÷ ,	07:30	07:45	0	0	0	0	0	
07:30 07:45 (1 2 1	0 0	0 4	- 0	9 9	×	07:45	08:00	0	0	0	0	0	
07:45 08:00	1 12 2 15	13	7	4	8	21 38	08:00	08:15	0	0	0	0	0	
08:00 08:15	1 - 1	5	2	0	9	53 8	08:15	08:30	0	0	0	0	0	
08:15 08:30 08:30 08:45	0 10 2 5	10 2	44	0 0	4 9	14	08:30	08:45	0	0	0	0	0	
08:45 09:00	11	12	8 %	7 5	10	22	08:45	00:60	0	0	0	0	0	
09:00 09:15 (10 10 10 10 10 10 10 10 10 10 10 10 10 1	10	8 4	~ +	5 30	15	00:60	09:15	0	0	0	0	0	
09:15 09:30 09:45 0	0 4 4 16	4 16	юœ	- 0	4 8	8 24	09:15	09:30	0	0	0	0	0	
09:45 10:00	. 8	6	6	3	12	21	06:30	09:45	0	0	0	0	0	
09:00 10:00	1 38	<u>წ</u> ი	24	- Q	29 5	68 14	09:45	10:00	0	0	0	0	0	
11:45 12:00	2 2 2	4 6	، ۲	90	5 -	25 8	11:30	11:45	0	0	0	0	0	
12:15 12:30 (0 4	04	5 0	4 0	0 0		11:45	12:00	0	0	0	0	0	
11:30 12:30	6 24 1 5	30 9	14 7	0	23 8	53	12:00	12:15	0	0	0	0	0	
12:45 13:00		. 6 .	. n I	. m .		15	12:15	12:30	0	0	0	0	0	
13:15 13:30	0 0	₽ Ę	10	- 4	a 4	-1/ 24	12:30	12:45	0	0	0	0	0	
12:30 13:30	3 31	34	27	6 u	36	70	12:45	13:00	0	0	0	0	0	
15:15 15:30	0 0	• •	00	o -	5 5	17	13:00	13:15	0	0	0	0	0	
15:30 15:45 15:45 16:00	1 8	6 C	9	4 v	13 15	នន	13:15	13:30	0	0	0	0	0	
15:00 16:00	3 27	30	38	13	51	81	15:00	15:15	0	0	0	0	0	
16:15 16:30	3 12	15	4 [л 4	ء 5	30 8	15:15	15:30	0	0	0	0	0	
16:30 16:45 16:45 17:00	3 8 1 2 8	55	ю к	- 10	8 Y	19 17	15:30	15:45	0	0	0	0	0	
16:00 17:00	6 33	39	26	· 6	35	74	15:45	16:00	0	0	0	0	0	
17:15 17:30 (1 14 8	15 8	ω თ	т 0	11 0	26 17	16:00	16:15	0	0	0	0	0	
17:30 17:45	2 0	12	4	6 0 0	50	32	16:15	16:30	0	0	0	0	0	
17:00 18:00	38 0	• 14	35	с 12	47	88	16:30	16:45	0	0	0	0	0	
Total 2	243	271	204	68	272	543	16:45	17:00	0	0	0	0	0	
Comment:							17:00	17:15	0	0	0	0	0	
							17:15	17:30	0	0	0	0	0	
							17:30	17:45	0	0	0	0	0	
2017-Mar-17						Page 1 of 1	17:45	18:00	0	0	0	0	0	

2017-Mar-17

Page 1 of 1

0

0

0

0

0

Total

ļ



Survey Date: Wednesday, May 04, 2016

Ottawa

Start Time: 07:00

0

0

Cars

CARLING AVE

0

Heavy Vehicles

Total

ŋ 1 1 ۴

0 0

0

♥ ∘

182 175 180

187 0

2194 ļ†

63 ŝ

> 1820 187

2194

2017-Mar-08

₹ 626

≮\$‡

Comments

607 19

- a.o

\$**1** -

Page 1 of 4

Page 2 of 4



MD Period Peak Hour:

ŋ 1

0 0

0

♥ ∘

306

0

654 347 19 328

Survey Date: Wednesday, May 04, 2016

Ottawa

Start Time: 07:00

295 Ξ

0

Cars

0

Heavy Vehicles

Total

-

٦

CARLING AVE

L

ç

۴

1

1000 272

1614

332 940 263

9 60 ი

342 0

ļ† 1614 0 0 0

0 0

591 28

- هي¢

\$1 ∾

\$

1145 ţ

€] 6]9

≪‡≋

Comments

Page 3 of 4

Otto	DWD			Тr	ansp	oorté	atio	n Se	<u>srvic</u>	ces	Ĕ	affic	Se	irvic	es		3 Mor	k Orde 5894	r
		-	Turn	ing	Mov	emei	ut C	ount	Ц Ц	S II	tudy	Sur	nma	ry R	epor	÷			
					CA	RLIN	ΒA	VE @	Я К	RKV	000	D A	VE S	~					
Survey Da	ite:	Wedn	esday,	May (04, 20 [,]	16		-	Total (Obser	ved U	-Turn					AAD	T Fact	ŗ
							ΖL	lorthbour	: pu	_	Sout	punoqu	сч с 				<u>.</u> 90		
								castbour	:: :::::::::::::::::::::::::::::::::::	_	wes	stroound.	0						
								Ē	ull St	udy									
			KIRK	WOOI	D AVE	S						Ũ	ARLIN	G AVE					
I		Northb	puno			Southba	pun	ĺ			Eastb	puno		[Vestbc	pung			
Period	5	ST	RT	NB TOT	Ы	ST	RT	SB TOT	STR TOT	Ц	ST	RT	EB TOT	5	ST	RT	VB TOT	STR TOT	Grand Tota
07:00 08:00	0	296	279	575	250	414	0	664	1239	202	1435	181	1818	0	0	0	0	1818	3057
00:60 00:80	0	358	338	969	333	407	0	740	1436	214	1767	186	2167	0	0	0	0	2167	3603
09:00 10:00	0	281	241	522	274	336	0	610	1132	288	1086	190	1564	0	0	0	0	1564	2696
11:30 12:30	0	288	234	522	292	330	0	622	1144	350	1018	274	1642	0	0	0	0	1642	2786
12:30 13:30	0	270	210	480	310	393	0	703	1183	354	L66	223	1574	0	0	0	0	1574	2757
15:00 16:00	0	332	296	628	325	325	0	650	1278	350	1102	264	1716	0	0	0	0	1716	2994
16:00 17:00	0	350	338	688	265	338	0	603	1291	307	1045	359	1711	0	0	0	0	1711	3002
17:00 18:00	0	294	243	537	317	411	0	728	1265	414	1076	332	1822	0	0	0	0	1822	3087
Sub Total	0	2469	2179	4648	2366	2954	0	5320	9968	2479	9526	2009	14014	0	0	0	0	14014	23982
U Turns				0				2	2				0				0	0	2
Total	0	2469	2179	4648	2366	2954	0	5322	0266	2479	9526	2009	14014	0	0	0	0	14014	23984
EQ 12Hr Note: These v	0 alues a	3432 Ire calcu	3029 Ilated by	6461 · multiply	3289 ving the	4106 totals by	0 the ap	7398 oropriate	13859 : expans	3446 sion fac	13241 tor.	2793	19479	0 1.39	0	0	0	19479	33338
AVG 12Hr Note: These w	0 olumes	3089 are cal	2726 culated t	5815 by multi	2960 plying th	3695 te Equiva	0 Ilent 12	6658 hr. total:	12473 s by the	3101 AADT	11917 factor.	2513	17532	° 06.	0	0	0	17532	30005
AVG 24Hr	0	4046	3571	7617	3877	4841	0	8722	16339	4063	15611	3292	22966	0	0	0	0	22966	39305
Note: These v	olumes	s are ca	culated	by multi	plying th	ne Avera	ge Daily	/ 12 hr. t	otals by	12 to 2	4 expan	ision fac	tor.	1.31					



Page 1 of 1

2017-Mar-08

Page 1 of 1



Transportation Services - Traffic Services Ottawa

Turning Movement Count - Full Study Diagram

CARLING AVE @ KIRKWOOD AVE S

Survey Date: Wednesday, May 04, 2016

Miovision 35894 Device: :#OM

	- W	()ttawa			Count Date: Wednesd	×	Time Period Northbound	07:00 08:00 1	08:00 09:00 0	09:00 10:00 0	11:30 12:30 2	15:00 16:00 2	16:00 17:00 0	17:00 18:00 0	10tal 0	Comment:																								Nieko ananika ananika ana	Note: I nese volumes consists o
5894							Grand Total	566	725	832	934	941	861	941	861	705	680	688	623	669	669	703	686	206	683	703	665	793	748	763	069	765	750	715	772	823	793	763	708	23984	
36							STR TOT	328	457	493	540	563	528	563	513	415	410	385	354	430	422	410	380	402	392	398	382	453	430	428	405	426	435	401	449	527	467	439	389	14014	
v.o.	Ę						×₽	0	•	0	•	0	•	0	•	0	•	•	•	•	0	•	•	0	•	0	•	0	•	•	•	•	0	•	•	•	0	•	•	•	
Ś	sepc						RT .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ice	₹ 2					ponoq	ST	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
erv	nma	s	s	0 0 # #	Ĩ.	Wes	Ц	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
c S	Sun	٩VE	-Turn	thound	NG AN		щ	328	157	61	540	563	528	563	513	115	10	385	354	130	122	10	380	102	392	868	382	153	130	128	501	126	135	101	149	527	L 91	661	88	14014	
affi	ute		red U	Sour	ARLI		RT T	31	48	46 4	56	37 5	37 5	57	55	45 4	54	37	25	54	71	78	7	52 4	59	55	57	59 4	63	99	76 4	92	88	10	7 69	93	90	62	71	2009	
Ē	Min	NOC	hserv		o	puno	ST	252	346	104	133	186	143	158	380	304	294	256	232	274	255	255	234	256	245	246	250	292	282	288	240	258	266	541	580	328	111	254	23	9526	÷
es	. 15	RK/	otal O	0 0 		Eastt	5	45	33	43	51	40	48	48	82	36	32	32	88	02	96	1	75 2	8	88	97 2	75 2	02	35	74	39	20	19	20	8	90	06	23	95 2	2479	nemen
Zic	- Tur	® KI	Ĕ	tbound			щ	38	68	39	94	178	33	178	84	06	10	03	69	69	11	633	908	40	16	02	83	140	18	35	82	62	15	4	23	96	56	24	19	9970	ŏ
Sel	S	/E @		Norl			s To	130	149	182	503	211	154	207	169	158	150	155	147	144	149	161	169	175 3	181	178	169	176	168	166	140	148	158	133	164	132	500	187	509	5322	
ion	lent	3 AV	9				RT T		0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	
rtat	ven	-IN	4, 201			punoq	ST	82	93	7	28	18	83	10	96	06	86	80	80	80	76	86	88	97	07	91	86	87	83	81	74	81	95	76	86	88	90	12	25	954	
bo	Мо	ARI	1ay 0₄		VE S	South	E.	8	20	7	75 1	33	2	1 1	22	38	2	15	37	2	12	15	2	82	74	87	2	89	35	35	36	37	33	22	82	2	4	75 1	2	366 2	
ans	jing	ပ	day, N		OD A		z 10	. 80	119	157	191	167	621	12	621	132	120	. 48	122	125	128	32	137	. 129	10	127	4	164	150	69	145	191	157	18		164	126	37	9	348 2	s.
Ē	Turi		sanba		кwо	_	RT	20	. 19	<u>*</u>	88	08	83	88	. 28			69	. 69	61		89	22	. 23	22		46	08	09	82	. 42	107	2	. 62	69	<u>*</u>	48	. 22	<u>2</u>	79 4	in Tota
			We		KIR	hbound	ST	58	62	73	03	87	96	83	92	68	71	79	63	64	75	5	85	76	58	68	68	84	06	87	71	1 8	87	89	06	80	78	80	56	69 21	luded
CITH	IWU		te:			Nort	Ц	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	are inc
H	JII		ey Da				iriod	17:15	02:30	17:45	00:80	38:15	08:30	18:45	00:60	15	9:30	9:45	00:01	1:45	2:00	12:15	2:30	2:45	3:00	13:15	3:30	5:15	5:30	5:45	6:00	6:15	6:30	6:45	17:00	17:15	17:30	7:45	8:00		Turns a
1 Contraction	1		Surv				Time Pe	07:00 (07:15 0	07:30 (07:45 (08:00	08:15 0	08:30 (08:45 0	00:60	09:15 0	00:30	09:45	11:30	11:45	12:00	12:15	12:30	12:45 1	13:00	13:15 1	15:00	15:15 1	15:30	15:45	16:00	16:15 1	16:30	16:45	17:00	17:15 1	17:30	17:45 1	TOTAL:	Note: U-

Transportati	na Movement
-	Turnir
	JIIawa

Work Order Transportation Services - Traffic Services urning Movement Count - Cyclist Volume Report

35894

		CA	RLING AVE	B KIRKWO	OD AVE S		
Count Dat	e: Wednesda	y, May 04, 2016				Start Time:	02:00
	Ϋ́	RKWOOD AVE	S		CARLING AVE		
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
17:00 08:00	-	ъ	4	0	0	0	4
00:60 00:80	0	7	7	2	0	7	4
9:00 10:00	0	-	٠	0	0	0	-
1:30 12:30	2	-	ю	2	0	7	5
2:30 13:30	-	0	٠	-	0	-	2
5:00 16:00	2	4	9	-	0	۰	7
6:00 17:00	0	7	7	0	0	0	2
7:00 18:00	0	0	0	9	-	7	7
Fotal	9	13	19	12	-	13	32

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary. 2017-Mar-08 Pac

Page 1 of 1

2017-Mar-08

Page 1 of 1

	Tu	rning Moven	nent Co	unt - Pedesti	ian Volume	Report	
		CAF	RLING AV	e @ Kirkwo(DD AVE S		
Count Da	te: Wednesday,	, May 04, 2016				Start Time:	00:20
Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Tota
07:00 07:15	3	0	°	2	0	2	5
07:15 07:30	8	0	e	ę	0	e	9
07:30 07:45	4	2	9	9	0	9	12
07:45 08:00	3	0	e	6	0	6	12
07:00 08:00	13	2	15	20	0	20	35
08:00 08:15	2 2	1	8	10	0	10	18
08:15 08:30	2	0	2	4	0	4	9
08:30 08:45	-	0	-	6	0	6	10
08:45 09:00	2	0	7	5	0	5	12
08:00 09:00	17	Ļ	18	28	0	28	46
09:00 09:15	2	0	2	5	0	5	7
09:15 09:30	4	2	9	ю	-	4	10
09:30 09:45	7	0	7	14	0	14	21
09:45 10:00	2	2	4	5	0	5	6
09:00 10:00	15	4	19	27	Ļ	28	47
11:30 11:45	3	0		9	0	9	6
11:45 12:00	9	2	8	9	-	7	15
12:00 12:15	4	-	5	4	0	4	6
12:15 12:30	2	0	2	2	0	2	4
11:30 12:30	15	e	18	18	1	19	37
12:30 12:45	10	0	10	8	0	8	18
12:45 13:00	2	2	4	5	0	5	6
13:00 13:15	4	2	9	8	0	8	14
13:15 13:30	3	4	7	11	0	£	18
12:30 13:30	19	80	27	32	0	32	59
15:00 15:15	3	+	4	15	0	15	19
15:15 15:30	5	2	7	14	.	15	22
15:30 15:45	12	ę	15	12	2	14	29
15:45 16:00	2	4	9	12	-	13	19
15:00 16:00	22	10	32	53	4	57	89
16:00 16:15	4	2	9	7	0	7	13
16:15 16:30	4	0	4	18	0	18	22
16:30 16:45	7	0	7	7	0	7	14
16:45 17:00	9	0	9	8	0	8	14
16:00 17:00	21	2	23	40	0	40	63
17:00 17:15	3	0	3	5	0	5	8
17:15 17:30	2	0	2	14	0	14	16
17:30 17:45	8	-	4	16	0	16	20
17:45 18:00	4	0	4	7	-	8	12
17:00 18:00	12	÷	13	42	•	43	56

W.O. 35894

2017-Mar-08

Page 1 of 1

Turning Movement Count - Heavy Vehicle Report

Transportation Services - Traffic Services

Ottawa

CARLING AVE @ KIRKWOOD AVE S

Survey	/ Date		Wec	dnesd	ay, M	ay 04	ł, 2016	<i>(</i> 0												
			KIRK	00M	D AVE	ŝ						S	RLIN	G AVE						
	ľ	Northb	puno			Southb	puno	ı		l	Eastbo	pund		[Vestbo	pun	ı			
Time F	eriod	Ц	ST	RT	TOT N	Ц	ST	RT	s TOT	STR TOT	LT	ST	RT	∎ToT	Г	ST	RT	тот	STR TOT	Grand Total
02:00	08:00	0	18	4	32	£	14	0	25	57	10	36	4	50	0	0	0	0	50	107
08:00	00:60	0	22	5	33	16	4	0	30	63	7	73	7	87	0	0	0	•	87	150
00:60	10:00	0	80	16	24	18	18	0	36	60	7	43	13	67	0	0	0	•	67	127
11:30	12:30	0	6	12	21	13	17	0	30	51	12	51	12	75	0	0	0	•	75	126
12:30	13:30	0	9	4	20	6	20	0	29	49	7	51	7	65	0	0	0	•	65	114
15:00	16:00	0	15	4	29	6	13	0	22	51	10	49	1	20	0	0	0	•	70	121
16:00	17:00	0	10	6	19	4	15	0	19	38	-	4	16	58	0	0	0	•	58	96
17:00	18:00	0	4	7	5	e	4	0	10	21	9	25	4	38	0	0	0	•	38	59
Sub 1	otal	0	92	67	189	83	118	0	201	390	64	369	11	510	0	0	0	•	510	006
U-Turn	s (Hear	y Veł	icles)		0				0	0				0				0	0	0
Tot	a	0	92	67	0	83	118	0	201	390	5	369	17	510	0	0	0	0	510	006
Heavy V	ehicles	includ	e Buse	s, Singl	e-Unit ⁻	Trucks	and Ar	ticulate	d Truck	s. Furth	er, the	y ARE i	ncluded	d in the	Turninç	g Mover	ment Co	ount Su	immary.	



			1	I	I	I	ľ	I	I	ľ			ľ	ľ	ľ	ľ				ľ	ľ	ľ	1	I		1		I			ľ	I	ľ	1	
Report		Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Turn Total I		Westbound U-Turn Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
- 15 Min U-		Eastbound U-Turn Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
nent Count	, 2016	Southbound U-Turn Total	0	0	0	0	0	0	0	٢	0	0	0	0	0	٢	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
ning Moven	dinesday, May 04	Northbound U-Turn Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turr		eriod	07:15	07:30	07:45	08:00	08:15	08:30	08:45	00:60	09:15	09:30	09:45	10:00	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	lal
	Survey Date	Time P	02:00	07:15	07:30	07:45	08:00	08:15	08:30	08:45	00:60	09:15	08:30	09:45	11:30	11:45	12:00	12:15	12:30	12:45	13:00	13:15	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	To

Work Order 35894

Transportation Services - Traffic Services

Ottawa

Page 1 of 1

2017-Mar-08

Page 1 of 4



4428

198 24

4626 671

2304

647

o⁵o ₽

€

173

135 ******

Comments :

8211

257

8468

2

0 0

2 ŝ

13772 13772

Cars

CARLING AVE

Heavy Vehicles

Total

Start Time: 07:00

Peak Hour 16:00 17:00

Ottawa



Page 4 of 4

2017-Mar-08

2017-Mar-08

Page 1 of 1

1			Trai	dsu	orta	ltior	ן Se	irvic	es.	۲Ľ,	affic	ິຮິ	∋rvi(ces		Ň	ork On	der		THE STREET	CATH		Tra	dsu	orta	atior	I Sel	Zic	- Sə	. Tra	affic	Ser	vice	S	N.O.	361	124
JUIDWC						Ċ		, i	č		c		ſ		١		36124			MIN	MM	F	urni	ng N	love	men	t Col	unt-	15	linu	te S	nmn	ary	Repo	ť		
	-	nrn	n gn	NON	eme	5	IUNO	ב ב י	N	inay	sur	mmä	¹	Kepc	Ľ									0	ARI	UNG	AVE	8	MER	IVA	Ш	ð					
				Ũ	ARL	DNG	AVE	8	MER	AVI V	Ë	ð							Sur	vey Dat	te:	Thur	sday, /	Augus	t 04, 2	016			otal Ob	serve	T-U b	urns					
Survey Date:	Thursda	зу, Ац	gust 04	4, 201	9		-	Total C	Dser	ved U.	-Turns	S				AAI	DT Fa	ctor		•)			Nor	thbound	-		Southb	:puno	0				
						ž١	orthbour	ind:		Sout	punoqu	0				90						M	RIVAL	ERD			Eas	stbound:	7	CA	Westbr RLING	ound:	32				
						ш			2	wes	stbound	32									North	punoq		ŭ	outhbou	pu			Eastbo	pune		5	(estboun	q			
		ME	RIVALE	L RD			Ĺ	lo In	nay		ð	ARLIN	JG AV	ш					Time	Period	5	ie F	z [5	ST	RT	s s TOT	Кр	s L	L R	ш <u>о</u> 1	L L	ST	RT	N TOT	но. Но	Grand Total
	Northbou	pun		Ň	outhbou	pun		,		Eastbo	punc			West	punoc				00:20	07:15	16		82 8	9	49	56	111	189	0	9 70	116	5 2	28	9	86 2	8	391
Period LT	ST	RT	NB	5	ST	RT	SB TOT	STR		ST	RT	EB	5	ST	RT	WB	STI	R Grand T Total	07:15	07:30	26	6	86	4	55	48	107	205	11	1 9	126	6 15	62	e	80	90	411
07:00 08:00 87	148	203	438	22	208	212	442	880	-	544	43	588	92	305	20	417	1005	5 1885	07:30	07:45	53	2 2 2 2 2 2	117	8	53	46	107	224	1	51 15	167	7 23	91	9	120 2	87	511
08:00 09:00 148	188	233	569	26	214	208	448	1017	-	069	48	739	138	489	32	629	1395	8 2415	07:45	08:00	5 33	22	145	4	51	62	117	262	0	39 10	112	9 33	8	2	134 3	13	575
09:00 10:00 101	131	159	391	38	211	250	499	890	0	531	88	619	112	476	36	624	1243	3 2133	08:00	08:15	5. 15 15	5	124		22	29	111	241	0 1	88 ;		6 1 6	102		140 3	49	590
11:30 12:30 148	202	171	521	56	234	227	517	1038	ŝ	483	80	566	143	604	42	789	1355	5 2393	08:15 08:30	08:30 08:45	3 42	2 0 2 0	9 164	ь с + о	53	51 48	113	217	0 7	2 1 2 1	181 0	1 26 50	132	б с	145 3 184 3	80 <u>2</u> 6	603 627
12:30 13:30 148	184	158	490	63	189	191	443	933	0	539	91	630	154	578	57	789	1415	9 2352	08:45	00:60	42	ici o	139	6	57	47	113	252	- 1	8	15	32	146	13	191 3	4	596
15:00 16:00 107	200	174	481	57	280	218	555	1036	0	525	115	640	227	1105	43	1375	2015	5 3051	00:60	09:15	17	1 22	3 97	ŋ	53	59	121	218	0	12	2 161	1 30	117	9	155 3	16	534
16:00 17:00 123	194	180	497	51	264	188	503	1000	0	774	100	874	312	1294	40	1646	252(0 3520	09:15	06:30	36	5	9 103	2 7	60	2	131	234	0	36 24	4 161	1 32	126	10	172 3	33	567
17:00 18:00 113	160	196	469	46	237	167	450	919	0	540	106	646	273	679	32	1284	1930	0 2849	09:30	09:45	21	8	97	5	46	60	117	214	0	11 20	161	1 24	119	12	157 3	18	532
Sub Total 975	1407	1474	3856	359	1837	1661	3857	7713	5	4626	671	5302	1451	5830	302	7583	12885	5 20598	09:45	10:00	27	3	94	5	52	67	130	224	0 10	15 32	2 137	7 26	114	80	149 2	86	510
U Turns			-				0	-				2				32	34	35	11:30	11:45	38	33	2 125	21	67	62	150	275	2	11 25	128	8 36	145	10	191 3	19	594
Total 975	1407	1474	3857	359	1837	1661	3857	7714	5	4626	671	5304	1451	5830	302	7615	12915	9 20633	11:45	12:00	40	16 14	135	12	55	53	120	255	0	20	143	3 3	143	12	194 3	37	592
EQ 12Hr 1355	1956	2049	5361	499	2553 2	2309	5361	10722	7	6430	933	7373	2017	8104	420	10585	17956	8 28680	12:00	12:15	3	14	3 132	8	62	61	131	263	0	17 17	7 134	4 31	169	13	213 3	47	610
Note: These values ¿	tre calcula	ated by	multiplyir	ng the t	otals by	the app	ropriate	expans	ion fact	or.			1.39						12:15	12:30	36 4	4	129	9 15	50	51	116	245	1	18	3 16	1 37	147	7	191 3	52	597
AVG 12Hr 1220	1760	1844	48.25	449	2298	2078	4825	9650	9	5787	839	6635	1815	7293	378	9526	16161	1 25811	12:30	12:45	8	6	130	15	43	58	116	246	1	10 26	3 16	6 4	147	80	200 3	99	612
Note: These volume:	are calcu	ulated b	y multipl	ying the	s Equiva.	lent 12	hr. total:	s by the	AADT †	actor.			<u>.</u>						12:45	13:00	40	1	120	18	45	37	100	220	0	39 18	8 157	7 42	150	16	209 3	99	586
AVG 24Hr 1598	2306	2416	6321	588	3010 2	2722	6321	12642	8	7581	1100	8692	2378	9554	495	12480	21172	2 33814	13:00	13:15	33	8	3 106	10	47	48	105	214	0 15	50 27	171 7	7 33	147	4	194 3	7	585
Note: These volume:	s are calcu	ulated b	y multipl	ying thu	e Averag	je Daily	12 hr. ti	otals by	12 to 2 [,]	4 expan	ision fac	ctor.	1.31						13:15	13:30	41	9	131	20	54	48	12	553	0	10	130	35	134	19	190 3	2	573
Comments:																			15:00	15:15	27	4	140	2 2	76	65	146	586	0	7 22	133	9	222	4	291 4	8	716
Note: U-Turns pro	vided for	appro.	ach tota	als. Re	fer to 'U	I-Turn'	Report	for spe	scific br	eakdo	MN								15:15 15:30	15:30 15:45	42 7	5 3	14.99	25	63 80	22	122	221	0 0	3 33	142	2 62 2 20	276	6 5	349 5 359 5	19	740 804
																			15:45	16:00	23	4	3 100	20	61	46	127	227	0 15	58 3C	185	8 64	313	7	386 5	74	801
																			16:00	16:15	35	4	3 133	8 18	68	99	152	285	0 27	0 16	3286	6 75	321	7	403 6	89	974
																			16:15	16:30	25	4	106	11	67	30	108	217	0 20	33 30	233	3 82	341	10	433 6	99	883
																			16:30	16:45	25	.4	3 121	12	71	4	127	248	0 15	50 25	175	5 74	279	6	363 5	38	786
																			16:45	17:00	38	8	135	10	58	48	116	251	0 15	51 25	9 18(0 81	353	14	448 6	28	879
																			17:00	17:15	31	22	133	3 19	69	49	137	270	0	17 28	8 176	5 78	314	1	404 5	80	850
																			17:15	17:30	21	Ω O	115	1	58	49	118	233	0 15	57 27	7 184	4 73	312	6	395 5	62	812
																			17:30	17:45	88	3.	7 113	6 8	61	30	100	213	11	4 27	141	1 62	174	7	244 3	85	598
																			17:45	18:00	23	22	301	2 2	49	39	95	203	0	22 24	4 146	9 60	179	5	245 3	91	594
																			тота	L: 97	5 14(07 147	4 3857	7 359	1837	1661	3857	7714	5	626 6	371 53	304 14	51 583	0 302	7615	12919	20633
																			Note: L	J-Turns a	are incl	uded in	Totals.					ő	mment								

Page 1 of 1

2017-Mar-08

Page 1 of 1

S	s
2	
5	2
+	3
1	
. (
IL	ġ.
-	

Work Order **Transportation Services - Traffic Services Turning Movement Count - Cyclist Volume Report**

		0	CARLING AV	E @ MERIV	ALE RD		
Count Dat	e: Thursday,	August 04, 2016				Start Time:	02:00
I		MERIVALE RD			CARLING AVE		
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 08:00	7	5	12	5	٢	9	18
00:60 00:80	ъ	9	4	0	ъ 2	ŝ	16
09:00 10:00	2	ю	2	2	2	4	6
11:30 12:30	0	-	-	0	2	2	ъ
12:30 13:30	7	-	e	5	0	ŝ	8
15:00 16:00	8	£	13	-	ы	4	17
16:00 17:00	S	ę	8	۲	4	ŝ	13
17:00 18:00	12	6	21	-	7	80	29
Total	41	33	74	15	24	39	113

Comment:

5
2
1
T
\sim
(
-

36124

Transportation Services - Traffic Services

W.O. 36124

Turning Movement Count - Heavy Vehicle Report

CARLING AVE @ MERIVALE RD

ø
201
8
August
Thursday,
Date:
Š

rvey D	ate:		Thur	sday	, Augu	ıst 04	l, 2016	6												
			ME	RIVA	LE RD	~						3	ARLIN	G AVE						
1	ž	orthbo	pund		55	Southb	puno			l	Eastbo	puno		[Vestbo	pun				
me Peric	R	5	ST	RT	z to	5	ST	RT	s TOT	STR TOT	L	ST	RT	⊒ 10	Ц	ST	RT	×10	STR TOT	Grand Total
:00 08:	00	5	÷-	7	10	-	0	2	3	13	0	21	5	26	80	31	2	41	67	80
:60 00:	8	2	.	5	17	0	0	ы	e	20	0	36		37	13	28	-	42	62	66
:00 10:	8	5	7	ო	10	-	2	5	8	18	0	35	4	39	9	33	-	40	62	97
:30 12:	30	7	5	ø	20	-	5	7	13	33	0	26	4	30	6	26	2	37	67	100
30 13:	30	e	9	9	15	-	5	4	10	25	0	29	б	32	8	17	0	26	58	83
:00 16:	8	7	7	ę	7	0	4	ы	7	14	0	16	ę	19	5	24	-	30	49	63
:00 17:	8	4	-	80	13	0	-	7	e	16	0	22	7	24	7	18	0	25	49	65
:00 18:	8	-	-	9	œ	0	-	e	9	14	0	13	7	15	5	53	0	27	42	56
ub Tota	-	29	19	52	100	9	18	29	53	153	0	198	24	222	61	199	7	268	490	643
Lurns (H	leavy	Vehi	icles)		0				0	0				0				1	1	1
Total		29	19	52	0	9	18	29	53	153	0	198	24	222	61	199	7	269	491	644
vy Vehic	cles in	Iclude	Buses	, Singl	e-Unit 1	Frucks	and Art	ticulated	d Truck	(s. Furth	ner, the	ey ARE	include	d in the	Turnin	g Mover	nent C	ount St	mmary.	

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary. 2017-Mar-08

Page 1 of 1

							Char	UN	Transpo	rtation Se	rvices - T	raffic Servi	ices	Work Order 36124
	Transpor	tation S	Services -	Traffic Ser	vices	Work Order		Turn	ning Moven	nent Count	- 15 Min U-	Turn Total F	Report	
Uttawa	-					36124			CAF	RUNG AVE	@ MERIVA	LE RD		
	Turning Mover	nent Co	unt - Pede	strian Volume	e Report		Survey Dat	e: Thur	sday, August 0-	4, 2016				
	U	ARLING	AVE @ MER	IVALE RD			Time F	Period	Northbound	Southbound	Eastbound	Westbound	Total	
Count Date: Thursday	∕, August 04, 2016				Start Time:	02:00	00.20	07.15	U-Iurn Iotal		U-Turn Total	U-Turn Total	-	
Time Period (E or W Cross	ch SB Approach aing) (E or W Crossing)	Total	EB Approact (N or S Crossin	g) (N or S Crossing)	Total	Grand Total	07:15	07:30	0	0	0	. 0	• 0	1
07:00 07:15 3	u م	ω u	с ×	0 -	، ئ	13	07:30	07:45	0	0	0	0	0	
07:30 07:45 5	0 0	ρœ	+ σ	t ~	04	12	07:45	08:00	0	0	0	2	2	
07:45 08:00 9 07:00 08:00 18	4	13 35	8 8	6	14	27 66	08:00	08:15	0	0	0	0	0	
08:00 08:15 6	e e	3 o	2 თ	2 01	, ю	14	08:15	08:30	0	0	0	٢	-	
08:15 08:30 8 08:30 08:45 10	3	13 13	- ω	8 0	6 г	24 16	08:30	08:45	0	0	0	0	0	I
08:45 09:00 3	30	9	89	7	15	21	08:45	00:00	0	0	0	0	0	
09:00 09:15 1	10	₹	₽ ~	0	25 04	13	00:60	09:15	0	0	0	2	2	
09:15 09:30 3 09:30 09:45 4	3	9 11	- 2	0	t 6	7 20	09:15	08:30	0	0	~	4	£	
09:45 10:00 4	9	10	4	5	6	19	06:30	09:45	0	0	0	2	2	1
09:00 10:00 12 11:30 11:45 4	26 11	35	9 4	4	2 <mark>1</mark> 8	23	09:45	10:00	0	0	0	+	-	
11:45 12:00 3	£ ;	4	7	4 0	5	25	11:30	11:45	0	0	0	0	0	
12:00 12:15 1 12:15 12:30 1	91 4	15	5 0	0 4	6 9	21	11:45	12:00	0	0	0	0	0	
11:30 12:30 9 12:30 12:45 7	55 8	64 15	22	12 R	34	98 80	12:00	12:15	0	0	0	0	0	
12:45 13:00 1	2	2 ∞	04	o -	t o	13	12:15	12:30	0	0	0	0	0	1
13:00 13:15 5 13:15 13:30 3	2 2	17 5	7	ο -	10 6	27	12:30	12:45	0	0	0	4	-	
12:30 13:30 16	29	45	25	10	35	80	12:45	13:00	0	0	0	£	-	1
15:00 15:15 9 15:15 15:30 11	13	16 24	4 (ო ო	13	23 37	13:00	13:15	0	0	0	0	0	I
15:30 15:45 2 15:45 16:00 2	12	4 4	7	يە مى	12	26 33	13:15	13:30	0	0	0	2	2	
15:00 16:00 24	45	69	31	19	20	119	15:00	15:15	0	0	0	4	4	
16:00 16:15 3 16:15 16:30 3	17 5	8 20	10	2	4 5	34	15:15	15:30	0	0	0	-	-	
16:30 16:45 6 18:45 17:00 4	4 %	50	<u>ب</u>	ω ς	13	33 18	15:30	15:45	0	0	0	ю	с	
16:00 17:00 16	42	28	28	- 19	47	105	15:45	16:00	0	0	0	2	2	ľ
17:15 17:30 5	7	7 7	2	0 17	13	14 25	16:00	16:15	-	0	0	0	-	
17:30 17:45 5	9 9	5 ;	4 (4 (æ ;	19	16:15	16:30	0	0	0	0	0	ľ
17:00 18:00 13	32	45	9 25	ع 15	40	2/	16:30	16:45	0	0	0	٢	-	
Total 135	262	397	173	117	290	687	16:45	17:00	0	0	0	0	0	1
Comment:							17:00	17:15	0	0	۲	1	2	ľ
							17:15	17:30	0	0	0	Ł	-	
							17:30	17:45	0	0	0	1	1	
2017-Mar-08						Page 1 of 1	17:45	18:00	0	0	0	1	1	
							Tc	otal	1	0	2	32	35	

2017-Mar-08

I

Page 1 of 1

	0 1	rk Urder	3/4/6				d Total	-	0 +	. 0	-	0	e •	2																
		0 N			. 07:00		Gran																							
	Services	Report	-	ATE SC	Start Time		Street Total	÷	0 -	• •	0	0	ю т	- 9																
	- Traffic	st Volume		ST/WESTG		CARLING AVE	Westbound	.		0	0	0	c∩ ≁	م -																
	Services	unt - Cyclis	•	ARCHIBALI			Eastbound	0	0 -	0	0	0	0 0	o r																
	portation	rement Col		E @ 73 E OF	018	TGATE SC W	Street Total	0		• •	-	0	0 0	o -																
	Trans	urning Mov)	ARLING AVI	ν, January 31, 2	BALD ST/WES	Southbound	0	0 0	0	-	0	0 0	o																
		THA TI		S	e: Wednesda)	3 E OF ARCHI	Northbound	0	0 0	0	0	0	0 0	0																
					count Dat	7	ne Period	:00 08:00	8:00 09:00 9-00 10:00	1:30 12:30	2:30 13:30	5:00 16:00	3:00 17:00 7:00 18:00	otal		Comment:														
	D				0		Ē	01	0 0	-	-	-	÷ ÷	- -	1															
	0				0		Ē	07	0 0		-	-	÷ ;	- 1-	1															
476	0				0		Grand Total	322 07	404	439	472 1	452 1	483	541	471	490	411	434	440	406	461	380	459	438	449	408	417	610	549	618
37476					0		STR Grand TOT Total	321 322 07	401 404 0	437 439 1	468 472 1	449 452 1	475 483	531 541	467 471	479 490	398 411	421 434	415 440	392 406	434 461	359 380	439 459	421 438	430 449	393 408	396 417	584 610	540 549	608 618
W.O. 37476	oort (sc			0		W STR Grand TOT TOT Total	144 321 322 07	0 164 401 404 0	190 437 439 1	210 468 472 1	209 449 452	226 475 483	274 531 541 -	247 467 471	265 479 490	204 398 411	219 421 434	208 415 440	245 392 406	237 434 461	211 359 380	235 439 459	242 421 438	228 430 449	228 393 408	234 396 417	411 584 610	386 540 549	440 608 618
Ces w.o. 37476	/ Report	ATE SC			0	nud	W STR Grand RI TOT TOT Total	4 0 144 321 322 07	2 2 164 401 404 0	3 7 190 437 439 1	6 4 210 468 472 1	7 2 209 449 452	3 3 226 475 483	5 9 274 531 541 - 1	4 3 247 467 471 -	1 4 265 479 490	9 5 204 398 411	4 4 219 421 434	1 7 208 415 440	1 4 245 392 406	4 3 237 434 461	0 1 211 359 380	2 3 235 439 459	1 1 242 421 438	7 1 228 430 449	7 1 228 393 408	3 1 234 396 417	9 2 411 584 610	6 0 386 540 549	9 1 440 608 618
srvices w.o. 37476	mary Report	STGATE SC		2 0	9	Westbound	Turner to the transmitted to the transmitted to the total total to the total total to the total total to the total to the	07 144 0 144 321 322 07	0) 162 2 164 401 404 0) 183 7 190 437 439 1) 206 4 210 468 472 ¹) 207 2 209 449 452 ¹) 223 3 226 475 483) 265 9 274 531 541	D 244 3 247 467 471) 261 4 265 479 490) 199 5 204 398 411) 214 4 219 421 434) 201 7 208 415 440) 241 4 245 392 406) 234 3 237 434 461	0 210 1 211 359 380) 232 3 235 439 459) 241 1 242 421 438) 227 1 228 430 449) 227 1 228 393 408) 233 1 234 396 417) 409 2 411 584 610) 386 0 386 540 549) 439 1 440 608 618
c Services w.o. 37476	Summary Report	MESTGATE SC	Turns	itbound: 0 itbound: 2	VG AVE C	Westbound	E W STR Grand OT LT ST RT TOT TOT Total	77 0 144 0 144 321 322 07	0 3 37 0 162 2 164 401 404 0	47 0 183 7 190 437 439 1	:58 0 206 4 210 468 472 ¹	40 0 207 2 209 449 452 ¹	.49 0 223 3 226 475 483 1	:57 0 265 9 274 531 541		:14 0 261 4 265 479 490	94 0 199 5 204 398 411	:02 0 214 4 219 421 434	.07 0 201 7 208 415 440	47 0 241 4 245 392 406	97 0 234 3 237 434 461	48 0 210 1 211 359 380	.04 0 232 3 235 439 459	79 0 241 1 242 421 438	.02 0 227 1 228 430 449	65 0 227 1 228 393 408	62 0 233 1 234 396 417	73 0 409 2 411 584 610	54 0 386 0 386 540 549	68 0 439 1 440 608 618
raffic Services _{w.o.} 37476	ute Summary Report	D ST/WESTGATE SC	ved U-Turns	Sournoound: 0 Westbound: 2	ARLING AVE	Westbound	E W STR Grand RT TOT LT ST RT TOT TOTAI	0 177 0 144 0 144 321 322 07	0 237 0 162 2 164 401 404 0	0 247 0 183 7 190 437 439 1	0 258 0 206 4 210 468 472 ¹	0 240 0 207 2 209 449 452	0 249 0 223 3 226 475 483	0 257 0 265 9 274 531 541	0 220 0 244 3 247 467 471	0 214 0 261 4 265 479 490	0 194 0 199 5 204 398 411	0 202 0 214 4 219 421 434	0 207 0 201 7 208 415 440	0 147 0 241 4 245 392 406	0 197 0 234 3 237 434 461	0 148 0 210 1 211 359 380	0 204 0 232 3 235 439 459	0 179 0 241 1 242 421 438	0 202 0 227 1 228 430 449	0 165 0 227 1 228 393 408	0 162 0 233 1 234 396 417	0 173 0 409 2 411 584 610	0 154 0 386 0 386 540 549	0 168 0 439 1 440 608 618
- Traffic Services w.o. 37476	Minute Summary Report	3ALD ST/WESTGATE SC	Observed U-Turns	4 Westbound: 2	CARLING AVE	tbound Westbound	E W STR Grand ST RT TOT LT ST RT TOT TOT Total	177 0 177 0 144 0 144 321 322 07	237 0 237 0 162 2 164 401 404 0	247 0 247 0 183 7 190 437 439 1	256 0 258 0 206 4 210 468 472 ¹	238 0 240 0 207 2 209 449 452 ¹	249 0 249 0 223 3 226 475 483 1	256 0 257 0 265 9 274 531 541	215 0 220 0 244 3 247 467 471 -	213 0 214 0 261 4 265 479 490	193 0 194 0 199 5 204 398 411	202 0 202 0 214 4 219 421 434	207 0 207 0 201 7 208 415 440	147 0 147 0 241 4 245 392 406	194 0 197 0 234 3 237 434 461	148 0 148 0 210 1 211 359 380	203 0 204 0 232 3 235 439 459	176 0 179 0 241 1 242 421 438	201 0 202 0 227 1 228 430 449	165 0 165 0 227 1 228 393 408	160 0 162 0 233 1 234 396 417	172 0 173 0 409 2 411 584 610	154 0 154 0 386 0 386 540 549	167 0 168 0 439 1 440 608 618
ces - Traffic Services w.o. 37476	- 15 Minute Summary Report	CHIBALD ST/WESTGATE SC	Total Observed U-Turns	nd: 0 Sournsourd: 0 nd: 14 Westbound: 2	CARLING AVE	Eastbound Westbound	LT ST RT TOT LT ST RT TOT TOT TOTAL	0 177 0 177 0 144 0 144 321 322 07	0 237 0 237 0 162 2 164 401 404 0	0 247 0 247 0 183 7 190 437 439	1 256 0 258 0 206 4 210 468 472 ¹	1 238 0 240 0 207 2 209 449 452	0 249 0 249 0 223 3 226 475 483	1 256 0 257 0 265 9 274 531 541	2 215 0 220 0 244 3 247 467 471 -	0 213 0 214 0 261 4 265 479 490	0 193 0 194 0 199 5 204 398 411	0 202 0 202 0 214 4 219 421 434	0 207 0 207 0 201 7 208 415 440	0 147 0 147 0 241 4 245 392 406	2 194 0 197 0 234 3 237 434 461	0 148 0 148 0 210 1 211 359 380	0 203 0 204 0 232 3 235 439 459	1 176 0 179 0 241 1 242 421 438	1 201 0 202 0 227 1 228 430 449	0 165 0 165 0 227 1 228 393 408	1 160 0 162 0 233 1 234 396 417	1 172 0 173 0 409 2 411 584 610	0 154 0 154 0 386 0 386 540 549	0 167 0 168 0 439 1 440 608 618
ervices - Traffic Services w.o. 37476	ount - 15 Minute Summary Report	ARCHIBALD ST/WESTGATE SC	Total Observed U-Turns	ormounte: 0 Sourceound: 0 astround: 14 Westbound: 2	CARLING AVE	Eastbound Westbound	STR E W STR Grand TOT LT ST RT TOT TOT TOTal	1 0 177 0 177 0 144 0 144 321 322	3 0 237 0 237 0 162 2 164 401 404 0 0	2 0 247 0 247 0 183 7 190 437 439	4 1 256 0 258 0 206 4 210 468 472 ¹	3 1 238 0 240 0 207 2 209 449 452	8 0 249 0 249 0 223 3 226 475 483	10 1 256 0 257 0 265 9 274 531 541	4 2 215 0 220 0 244 3 247 467 471	11 0 213 0 214 0 261 4 265 479 490	13 0 193 0 194 0 199 5 204 398 411	13 0 202 0 202 0 214 4 219 421 434	25 0 207 0 207 0 201 7 208 415 440	14 0 147 0 147 0 241 4 245 392 406	27 2 194 0 197 0 234 3 237 434 461	21 0 148 0 148 0 210 1 211 359 380	20 0 203 0 204 0 232 3 235 439 459	17 1 176 0 179 0 241 1 242 421 438	19 1 201 0 202 0 227 1 228 430 449	15 0 165 0 165 0 227 1 228 393 408	21 1 160 0 162 0 233 1 234 396 417	26 1 172 0 173 0 409 2 411 584 610	9 0 154 0 154 0 386 0 386 540 549	10 0 167 0 168 0 439 1 440 608 618
n Services - Traffic Services _{W.O.} 37476	nt Count - 15 Minute Summary Report	E OF ARCHIBALD ST/WESTGATE SC	Total Observed U-Turns	Reprintation - 2000 - 2000 - 0 Eastbound: 14 Westbound: 2	CARLING AVE	Eastbound Westbound	S STR E W STR Grand TOT TOT TOT TOT TOT TOT TOT TOT UT ST RI TOT TOT TOT TOT TOT TOT TOT TOT TOT TO	1 1 0 177 0 177 0 144 0 144 321 322	3 3 0 237 0 2 37 0 162 2 164 401 404 0	2 2 0 247 0 247 0 183 7 190 437 439	4 4 1 256 0 258 0 206 4 210 468 472	3 3 1 238 0 240 0 207 2 209 449 452	8 8 0 249 0 223 3 226 475 483	10 10 1 256 0 257 0 265 9 274 531 541	4 4 2 215 0 220 0 244 3 247 467 471	11 11 0 213 0 214 0 261 4 265 479 490	13 13 0 193 0 194 0 199 5 204 398 411	13 13 0 202 0 202 0 214 4 219 421 434	25 25 0 207 0 207 0 201 7 208 415 440	14 14 0 147 0 147 0 241 4 245 392 406	27 27 2 194 0 197 0 234 3 237 434 461	21 21 0 148 0 148 0 210 1 211 359 380	20 20 0 203 0 204 0 232 3 235 439 459	17 17 1 176 0 179 0 241 1 242 421 438	19 19 1 201 0 202 0 227 1 228 430 449	15 15 0 165 0 165 0 227 1 228 393 408	21 21 1 160 0 162 0 233 1 234 396 417	26 26 1 172 0 173 0 409 2 411 584 610	9 9 0 154 0 154 0 386 0 386 540 549	10 10 0 167 0 168 0 439 1 440 608 618
ation Services - Traffic Services w.o. 37476	ment Count - 15 Minute Summary Report	73 E OF ARCHIBALD ST/WESTGATE SC	2018 Total Observed U-Turns	Normaound: 0 Sourceound: 0 Eastbound: 14 Westbound: 2	CARLING AVE	ind Eastbound Westbound	S STR E W STR Grand Trin RI TOT LI SI RI TOT LI SI RI TOT TOT TOTAI	1 1 1 0 177 0 144 0 144 321 322 07	2 3 3 0 237 0 237 0 162 2 164 401 404 0	1 2 2 0 247 0 247 0 183 7 190 437 439 1	3 4 4 1 256 0 258 0 206 4 210 468 472 ¹	2 3 3 1 238 0 240 0 207 2 209 449 452	7 8 8 0 249 0 249 0 223 3 226 475 483	7 10 10 1 256 0 257 0 265 9 274 531 541	1 4 4 2 215 0 220 0 244 3 247 467 471	8 11 11 0 213 0 214 0 261 4 265 479 490	10 13 13 0 193 0 194 0 199 5 204 398 411	11 13 13 0 202 0 202 0 214 4 219 421 434	19 25 25 0 207 0 207 0 201 7 208 415 440	10 14 14 0 147 0 147 0 241 4 245 392 406	20 27 27 2 194 0 197 0 234 3 237 434 461	16 21 21 0 148 0 148 0 210 1 211 359 380	15 20 20 0 203 0 204 0 232 3 235 439 459	12 17 17 1 176 0 179 0 241 1 242 421 438	11 19 19 1 201 0 202 0 227 1 228 430 449	13 15 15 0 165 0 165 0 227 1 228 393 408	19 21 21 1 160 0 162 0 233 1 234 396 417	17 26 26 1 172 0 173 0 409 2 411 584 610	8 9 9 0 154 0 154 0 386 0 386 540 549	8 10 10 0 167 0 168 0 439 1 440 608 618
ortation Services - Traffic Services w.o. 37476	Aovement Count - 15 Minute Summary Report	E @ 73 E OF ARCHIBALD ST/WESTGATE SC	ary 31, 2018 Total Observed U-Turns	Eastbound: 0 Soundound: 0 Eastbound: 14 Westbound: 2	ALD CARLING AVE C	outhbound Eastbound Westbound	SIRT TOT TOT LT SI RI TOT TOT TOTAL	0 1 1 1 0 177 0 177 0 144 0 144 321 322	0 2 3 3 0 237 0 162 2 164 401 404 0 0	0 1 2 2 0 247 0 247 0 183 7 190 437 439	0 3 4 4 1 256 0 258 0 206 4 210 468 472 ¹	0 2 3 3 1 238 0 240 0 207 2 209 449 452 ¹	0 7 8 8 0 249 0 249 0 223 3 226 475 483	0 7 10 10 1 256 0 257 0 265 9 274 531 541 7	0 1 4 4 2 215 0 220 0 244 3 247 467 471 -	0 8 11 11 0 213 0 214 0 261 4 265 479 490	0 10 13 13 0 193 0 194 0 199 5 204 398 411	0 11 13 13 0 202 0 202 0 214 4 219 421 434	0 19 25 25 0 207 0 207 0 201 7 208 415 440	0 10 14 14 0 147 0 147 0 241 4 245 392 406	0 20 27 27 2 194 0 197 0 234 3 237 434 461	0 16 21 21 0 148 0 148 0 210 1 211 359 380	0 15 20 20 0 203 0 204 0 232 3 235 439 459	0 12 17 17 1 17 6 0 179 0 241 1 242 421 438	0 11 19 19 1 201 0 202 0 227 1 228 430 449	0 13 15 15 0 165 0 165 0 227 1 228 393 408	0 19 21 21 1 160 0 162 0 233 1 234 396 417	0 17 26 26 1 172 0 173 0 409 2 411 584 610	0 8 9 9 0 154 0 154 0 386 0 386 540 549	0 8 10 10 0 167 0 168 0 439 1 440 608 618
insportation Services - Traffic Services w.o. 37476	ing Movement Count - 15 Minute Summary Report	AVE @ 73 E OF ARCHIBALD ST/WESTGATE SC	January 31, 2018 Total Observed U-Turns	Rearringound: 0 Souringound: 0 Eastbound: 14 Westbound: 2	CHIBALD CARLING AVE CARLING AVE C	Southbound Eastbound Westbound	STR E W STR Grand T LT ST RT TOT TOT TOTAI	0 0 1 1 1 0 177 0 177 0 144 0 144 321 322	1 0 2 3 3 0 237 0 237 0 162 2 164 401 404 0	1 0 1 2 2 0 247 0 247 0 183 7 190 437 439 1	1 0 3 4 4 1 256 0 258 0 206 4 210 468 472 ¹	1 0 2 3 3 1 238 0 240 0 207 2 209 449 452	1 0 7 8 8 0 249 0 249 0 223 3 226 475 483	3 0 7 10 10 1 256 0 257 0 265 9 274 531 541 7	3 0 1 4 4 2 215 0 220 0 244 3 247 467 471	3 0 8 11 11 0 213 0 214 0 261 4 265 479 490	3 0 10 13 13 0 193 0 194 0 199 5 204 398 411	2 0 11 13 13 0 202 0 202 0 214 4 219 421 434	6 0 19 25 25 0 207 0 201 7 208 415 440	4 0 10 14 14 0 147 0 147 0 241 4 245 392 406	7 0 20 27 27 2 194 0 197 0 234 3 237 434 461	5 0 16 21 21 0 148 0 1 48 0 210 1 211 359 380	5 0 15 20 20 0 203 0 204 0 232 3 235 439 459	5 0 12 17 17 1 176 0 179 0 241 1 242 421 438	8 0 11 19 19 1 201 0 202 0 227 1 228 430 449	2 0 13 15 15 0 165 0 165 0 227 1 228 393 408	2 0 19 21 21 1 160 0 162 0 233 1 234 396 417	9 0 17 26 26 1 172 0 173 0 409 2 411 584 610	1 0 8 9 9 0 154 0 154 0 386 0 386 540 549	2 0 8 10 10 0 167 0 168 0 439 1 440 608 618
Transportation Services - Traffic Services w.o. 37476	urning Movement Count - 15 Minute Summary Report	ING AVE @ 73 E OF ARCHIBALD ST/WESTGATE SC	esday, January 31, 2018 Total Observed U-Turns	Eastbound: 0 Southoound: 0 Eastbound: 14 Westbound: 2	DF ARCHIBALD CARLING AVE CARLING AVE COMM	Southbound Eastbound Westbound	N STR Crand E W STR Crand Tur TOT LT ST RT TOT LT ST RT TOT TOT TOTAL	0 0 0 1 1 1 0 177 0 177 0 144 0 144 321 322 07	0 1 0 2 3 3 0 237 0 162 2 164 401 404 0	• 0 1 0 1 2 2 0 247 0 247 0 183 7 190 437 439	· 0 1 0 3 4 4 1 256 0 258 0 206 4 210 468 472 1	· 0 1 0 2 3 3 1 238 0 240 0 207 2 209 449 452 ¹	• 0 1 0 7 8 8 0 249 0 249 0 223 3 226 475 483	0 3 0 7 10 10 1 256 0 257 0 265 9 274 531 541 7	- 0 3 0 1 4 4 2 215 0 220 0 244 3 247 467 471	0 3 0 8 11 11 0 213 0 214 0 261 4 265 479 490	0 3 0 10 13 13 0 193 0 194 0 199 5 204 398 411	0 2 0 11 13 13 0 202 0 202 0 214 4 219 421 434	0 6 0 19 25 25 0 207 0 201 7 208 415 440	0 4 0 10 14 14 0 147 0 147 0 241 4 2 45 392 406	0 7 0 20 27 27 2 194 0 197 0 234 3 237 434 461	0 5 0 16 21 21 0 148 0 148 0 210 1 211 359 380	0 5 0 15 20 20 0 203 0 204 0 232 3 235 439 459	0 5 0 12 17 17 1 17 6 0 179 0 241 1 242 421 438	0 8 0 11 19 19 1 201 0 202 0 227 1 228 430 449	0 2 0 13 15 15 0 165 0 165 0 227 1 228 393 408	0 2 0 19 21 21 1 160 0 162 0 233 1 234 396 417	0 9 0 17 26 26 1 172 0 173 0 409 2 411 584 610	0 1 0 8 9 9 0 154 0 154 0 386 0 386 540 549	0 2 0 8 10 10 0 167 0 168 0 439 1 440 608 618
Transportation Services - Traffic Services w.o. 37476	Turning Movement Count - 15 Minute Summary Report	ARLING AVE @ 73 E OF ARCHIBALD ST/WESTGATE SC	Wednesday, January 31, 2018 Total Observed U-Turns	Navribound: 0 Souribound: 0 Eastbound: 14 Westbound: 2	73 E OF ARCHIBALD CARLING AVE CARLING AVE	survestigate Sourvestigate Sourv	N STR Grand E W STR Grand T R TOT LT ST RT TOT TOT TOTAL	0 0 0 0 0 1 1 1 0 177 0 144 0 144 321 322 07	0 0 1 0 2 3 3 0 237 0 237 0 162 2 164 401 404 0 0) 0 0 1 0 1 2 2 0 247 0 183 7 190 437 439 1) 0 0 1 0 3 4 4 1 256 0 258 0 206 4 210 468 472 ¹) 0 0 1 0 2 3 3 1 238 0 240 0 207 2 209 449 452 ¹) 0 0 1 0 7 8 8 0 249 0 249 0 223 3 226 475 483) 0 0 3 0 7 10 10 1 256 0 257 0 265 9 274 531 541 $\overline{1}$) 0 0 3 0 1 4 4 2 215 0 220 0 244 3 247 467 471 -) 0 0 3 0 8 11 11 0 213 0 214 0 261 4 265 479 490) 0 0 3 0 10 13 13 0 193 0 194 0 199 5 204 398 411) 0 0 2 0 11 13 13 0 202 0 20 2 0 214 4 219 421 434) 0 0 6 0 19 25 25 0 207 0 207 0 201 7 208 415 440) 0 0 4 0 10 14 14 0 147 0 147 0 241 4 245 392 406) 0 0 7 0 20 27 27 2 194 0 197 0 234 3 237 434 461) 0 0 5 0 16 21 21 0 148 0 148 0 210 1 211 359 380) 0 0 5 0 15 20 20 0 203 0 204 0 232 3 235 439 459) 0 0 5 0 12 17 17 1 176 0 179 0 241 1 242 421 438) 0 0 8 0 11 19 19 1 201 0 202 0 227 1 228 430 449) 0 0 2 0 13 15 15 0 165 0 165 0 227 1 228 393 408) 0 0 2 0 19 21 21 1 160 0 162 0 233 1 234 396 417) 0 0 9 0 17 26 26 1 172 0 173 0 409 2 411 584 610) 0 0 1 0 8 9 9 0 154 0 154 0 386 0 386 540 549) 0 0 2 0 8 10 10 0 167 0 168 0 439 1 440 608 618
Transportation Services - Traffic Services w.o. 37476	Turning Movement Count - 15 Minute Summary Report	CARLING AVE @ 73 E OF ARCHIBALD ST/WESTGATE SC	e: Wednesday, January 31, 2018 Total Observed U-Turns	Eastbound: 0 Sourceound: 0 Eastbound: 14 Westbound: 2	73 E OF ARCHIBALD CARLING AVE	S IT WEST CALE SO W Northbound Eastbound Westbound	N STR Canad E W STR Grand Tu 	0 0 0 0 0 0 1 1 1 0 177 0 144 0 144 321 322 0 0	0 0 0 0 1 0 2 3 3 0 237 0 2 37 0 162 2 164 401 404 0 0	0 0 0 0 1 0 1 2 2 0 247 0 247 0 183 7 190 437 439	0 0 0 0 1 0 3 4 4 1 256 0 258 0 206 4 210 468 472 1	0 0 0 0 1 0 2 3 3 1 238 0 240 0 207 2 209 449 452 ¹	0 0 0 0 1 0 7 8 8 0 249 0 223 3 226 475 483 1	0 0 0 0 3 0 7 10 10 1 256 0 257 0 265 9 274 531 541 7	0 0 0 0 3 0 1 4 4 2 215 0 220 0 244 3 247 467 471 -	0 0 0 0 3 0 8 11 11 0 213 0 214 0 261 4 266 479 490	0 0 0 0 3 0 10 13 13 0 193 0 194 0 199 5 204 398 411	0 0 0 0 2 0 11 13 13 0 202 0 20 2 0 214 4 219 421 434	0 0 0 0 6 0 19 25 25 0 207 0 201 7 208 415 440	0 0 0 0 4 0 10 14 14 0 147 0 1 47 0 241 4 245 392 406	0 0 0 0 7 0 20 27 27 2 194 0 197 0 234 3 237 434 461	0 0 0 0 5 0 16 21 21 0 148 0 14 8 0 210 1 211 359 380	0 0 0 0 5 0 15 20 20 0 203 0 204 0 232 3 235 439 459	0 0 0 0 5 0 12 17 1 7 1 176 0 179 0 241 1 242 421 438	0 0 0 0 8 0 11 19 19 1 201 0 202 0 227 1 228 430 449	0 0 0 0 2 0 13 15 15 0 165 0 165 0 227 1 228 393 408	0 0 0 0 2 0 19 21 21 1 160 0 162 0 233 1 234 396 417	0 0 0 0 9 0 17 26 26 1 172 0 173 0 409 2 411 584 610	0 0 0 0 1 0 8 9 9 0 154 0 154 0 386 0 386 540 549	0 0 0 0 2 0 8 10 10 0 167 0 168 0 439 1 440 608 618
Transportation Services - Traffic Services w.o. 37476	Autwid Turning Movement Count - 15 Minute Summary Report	CARLING AVE @ 73 E OF ARCHIBALD ST/WESTGATE SC	sy Date: Wednesday, January 31, 2018 Total Observed U-Turns	Eastbound: 0 Sourtbound: 0 Eastbound: 14 Westbound: 2	73 E OF ARCHIBALD CARLING AVE CARLING AVE	31/WE310A1E3C W Northbound Eastbound Westbound	hod LT ST RT TOT LT ST RT TOT TOT LT ST RT TOT TOT TOT LT ST RT TOT TOT TOT LT ST RT TOT TOT TOT TOTAL	7:15 0 0 0 0 0 1 1 1 0 177 0 144 0 144 321 322 0 0	0 7:30 0 0 0 1 0 2 3 3 0 237 0 23 7 0 162 2 164 401 404 0	7.45 0 0 0 1 0 1 2 2 0 247 0 183 7 190 437 439	8:00 0 0 0 0 1 0 3 4 4 1 256 0 258 0 206 4 210 468 472 1	8:15 0 0 0 1 0 2 3 3 1 238 0 240 0 207 2 209 449 452 ¹	8:30 0 0 0 1 0 7 8 8 0 249 0 249 0 223 3 226 475 483	8:45 0 0 0 0 3 0 7 10 10 1 256 0 257 0 265 9 274 531 541	9:00 0 0 0 0 3 0 1 4 4 2 215 0 220 0 244 3 247 467 471 -	9:15 0 0 0 0 3 0 8 11 11 0 213 0 214 0 261 4 265 479 490	9:30 0 0 0 3 0 10 13 13 0 193 0 194 0 199 5 204 398 411	8:45 0 0 0 0 2 0 11 13 13 0 202 0 202 0 214 4 219 421 434	0:00 0 0 0 0 6 0 19 25 25 0 207 0 2 07 7 2 08 415 440	1:45 0 0 0 0 4 0 10 14 14 0 147 0 147 0 241 4 245 392 406	2:00 0 0 0 7 0 20 27 27 2 194 0 197 0 234 3 237 434 461	2:15 0 0 0 0 5 0 16 21 21 0 148 0 148 0 210 1 211 359 380	2:30 0 0 0 5 0 15 20 20 0 203 0 204 0 232 3 235 439 459	2.45 0 0 0 0 5 0 12 17 17 1 176 0 179 0 241 1 242 421 438	3:00 0 0 0 0 8 0 11 19 19 1 201 0 202 0 227 1 228 430 449	3:15 0 0 0 0 2 0 13 15 15 0 165 0 165 0 227 1 228 393 408	3:30 0 0 0 0 2 0 19 21 21 1 160 0 162 0 233 1 234 396 417	5:15 0 0 0 0 9 0 17 26 26 1 172 0 173 0 409 2 411 584 610	5:30 0 0 0 1 0 8 9 9 0 154 0 154 0 386 0 386 540 549	5.45 0 0 0 0 2 0 8 10 10 0 157 0 168 0 439 1 440 608 618

Page 1 of 1 Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary. 2016-Mar-28

				n		9 M	0 ve	men	נ	nut	- 10		Inte	unc		L N N	epo			Í
			CAF	SLI S	5	٩VE	0	73 E	Ч	AR(E	BALI	N O	TME	ST	GAT	ш	ပ္တ		
Sur	vey D	ate:	We	dnes	day, J	anuar	y 31,	2018	12		otal	Obser	vedl	J-Turn:	s i					
									žш	astboun	ë ë	6 4	8 ₹	estbound	0 01 					
			73 ST/	E OF	ARCI	HIBAL E SC	≤ף					0	ARL	ING AV	ų					
		ž	orthboui	P		SoL	uthbour	p			Eas	stbound			We	stbound				
Time F	Period	LT	ST	RT	n ToT	LT	ST	RT	s TOT	STR TOT	Ц	ST	RT	∎ TOT	Ц	ST	R	νToT	STR TOT	Grand Total
00:20	07:15	0	0	0	0	0	0	۲	-	۲	0	177	0	177	0	144	0	144	321	322
07:15	07:30	0	0	0	•	-	0	2	e	e	0	237	0	237	0	162	2	164	401	404
07:30	07:45	0	0	0	•	-	0	-	7	7	0	247	0	247	0	183	7	190	437	439
07:45	08:00	0	0	0	0	-	0	e	4	4	-	256	0	258	0	206	4	210	468	472
08:00	08:15	0	0	0	•	-	0	2	e	e	-	238	0	240	0	207	2	209	449	452
08:15	08:30	0	0	0	0	-	0	7	80	8	0	249	0	249	0	223	e	226	475	483
08:30	08:45	0	0	0	0	ю	0	7	10	10	-	256	0	257	0	265	6	274	531	541
08:45	00:60	0	0	0	0	ю	0	-	4	4	7	215	0	220	0	244	e	247	467	471
00:60	09:15	0	0	0	0	ю	0	80	1	7	0	213	0	214	0	261	4	265	479	490
09:15	06:30	0	0	0	0	ю	0	10	13	13	0	193	0	194	0	199	2	204	398	411
06:30	09:45	0	0	0	0	7	0	11	13	13	0	202	0	202	0	214	4	219	421	434
09:45	10:00	0	0	0	0	9	0	19	25	25	0	207	0	207	0	201	2	208	415	440
11:30	11:45	0	0	0	0	4	0	10	14	14	0	147	0	147	0	241	4	245	392	406
11:45	12:00	0	0	0	•	7	0	20	27	27	N	194	0	197	0	234	e	237	434	461
12:00	12:15	0	0	0	•	2	0	16	21	21	0	148	0	148	0	210	-	211	359	380
12:15	12:30	0	0	0	•	2	0	15	20	20	0	203	0	204	0	232	e	235	439	459
12:30	12:45	0	0	0	•	2	0	12	17	17	-	176	0	179	0	241	-	242	421	438
12:45	13:00	0	0	0	•	80	0	1	19	19	-	201	0	202	0	227	-	228	430	449
13:00	13:15	0	0	0	•	0	0	13	15	15	0	165	0	165	0	227	-	228	393	408
13:15	13:30	0	0	0	•	0	0	19	21	21	-	160	0	162	0	233	-	234	396	417
15:00	15:15	0	0	0	•	6	0	17	26	26	-	172	0	173	0	409	2	411	584	610
15:15	15:30	0	0	0	•	-	0	8	6	6	0	154	0	154	0	386	0	386	540	549
15:30	15:45	0	0	0	•	2	0	8	10	9	0	167	0	168	0	439	-	440	608	618
15:45	16:00	0	0	0	•	9	0	12	18	18	0	165	0	165	0	367	2	369	534	552
16:00	16:15	0	0	0	0	1	0	17	28	28	0	223	0	223	0	426	0	427	650	678
16:15	16:30	0	0	0	0	7	0	5	12	12	-	230	0	231	0	372	-	373	604	616
16:30	16:45	0	0	0	0	4	0	7	;	7	0	253	0	253	0	363	e	366	619	630
16:45	17:00	0	0	0	0	6	0	6	18	18	2	263	0	265	0	342	0	342	607	625
17:00	17:15	0	0	0	•	7	0	5	18	18	0	267	0	267	0	375	2	377	644	662
17:15	17:30	0	0	0	•	2	0	12	14	4	-	255	0	257	0	336	-	337	594	608
17:30	17:45	0	0	0	0	2	0	5	10	10	0	231	0	231	0	323	-	324	555	565
17:45	18:00	0	0	0	•	5	0	5	5	9	0	209	0	209	0	336	-	337	546	556
TOTAL		0	0	0	•	131	0	304	435	435	15	6673	0	6702	0	8828	79	890	9 15611	16046
Note: U 2018-Má	l-Turns ar-28	are ir	Jolude	d in To	otals.					U	Commo	ent:							Pa	t of 1

<mark>W.O</mark>. 37476

Transportation Services - Traffic Services

Ottawa

Transportation Services - Traffic Services

Ottawa

2018-Mar-28

Comments

Page 1 of 1

2018-Mar-2

Total

0

0

0

0

+ 0

₩ 0

≪t∘

• **†**

Heavy Vehicles

Turning Movement Count - Pedestrian Volume Report Artning Movement Count - Pedestrian Volume Report CARLING XE @ 73 E OF ARCHIBALD STIVMESTGATE SC Count Date: Wednesday, January 31, 2018 Start Time: 07:00 Count Date: Wednesday, January 31, 2018 Table Movement Table Movement The Pariod Movement Table Movement The Pariod Movement Table Movement The Pariod Movement Table Movement Table Movement Table Movement Table Movement Table Movement Table Movement Table Movement Table Movement Table Movement And table Table Movev Consange Table Movement </th <th>Otto</th> <th>DWA</th> <th>Transport</th> <th>ation S</th> <th>ervices - Tr</th> <th>attic Serv</th> <th>vices</th> <th>37476</th>	Otto	DWA	Transport	ation S	ervices - Tr	attic Serv	vices	37476
CARLING AVE @ 73 E OF ARCHIBALD STIWESTGATE SC Count Date: Wednesday, January 31, 2018 Start Time: 07:00 Total Total StrWESTGATE SC Count Date: Wednesday, January 31, 2018 Start Time: 07:00 Total Total Total Consenty Indication Start Schwart Fault Schwart Fault Schwart Sch		Tu	rning Movem	ent Cou	unt - Pedestri	an Volume	Report	
Count Date: Weathmary 31, 2018 Start Time: Orion: The Period (EoV Crossing) (Eo V Crossing) Ten (An Altrenet)			CARLING AVE	@ 73 E C	F ARCHIBALD	ST/WESTG/	ATE SC	
$ \ $	Count Dat	te: Wednesday,	, January 31, 2018				Start Time:	02:00
	Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing) (I	WB Approach V or S Crossing)	Total	Grand Total
(7) (7) <td>07:00 07:15</td> <td>0</td> <td>4</td> <td>4</td> <td>1</td> <td>3</td> <td>4</td> <td>80</td>	07:00 07:15	0	4	4	1	3	4	80
777300 777300 774300 774300 774300 77400	07:15 07:30	0	4	4	-	5	9	10
()////////////////////////////////////	07:30 07:45	0	2	7	2	2	4	9
ØFTOD 0 13 13 13 13 13 14 15 6 6 15 15 16<	07:45 08:00	0	ę	e	2	11	13	16
000000000000000000000000000000000000	07:00 08:00	0	13	13	9	21	27	40
08:15 08:0 0 4 1 5 6 10 12 10 08:00 0 6 6 6 6 6 7	08:00 08:15	0	-	÷	1	11	12	13
0830 0845 0 4 2 10 12 16 16 0830 08010 0 15 16 15 15 15 15 16 0830 08010 0 15 15 16 12 26 08010 0 1 1 1 0 2 4 2 17 08010 0 1<	08:15 08:30	0	4	4	-	5	9	10
0845 0900 0 6 6 12 13 14 13 14 13 14 13 14 13 14 13 14 13 14	08:30 08:45	0	4	4	2	10	12	16
0600 0 15 16 10 32 42 57 50 06300 0 1 1 1 0 3 1 24 51 17 06300 0 7 7 7 3 7 10 17 17 06300 0 7 7 7 1 40 51 7 1 01300 0 23 23 11 40 51 7 1 41 7 1 1130 1145 10 13 13 4 7 1 14 7 1 1145 1230 0 13 13 4 7 1	08:45 09:00	0	9	9	9	9	12	18
0600 06:1 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 1 1 0 1 1 1 0 1 </td <td>08:00 09:00</td> <td>0</td> <td>15</td> <td>15</td> <td>10</td> <td>32</td> <td>42</td> <td>57</td>	08:00 09:00	0	15	15	10	32	42	57
0615 0633 0 1 1 1 0 5 5 5 5 5 5 6 6 0030 0004 0 7 7 7 7 5 19 24 31 1130 1145 0 14 14 7 14 21 34 11430 1230 0 14 14 7 14 21 34 1230 1230 0 14 14 7 14 21 34 1230 1230 0 3 3 3 3 3 3 3 1230 1330 0 3 3 3 3 3 3 3 3 3 3 1330 1330 0 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 <td< td=""><td>09:00 09:15</td><td>0</td><td>8</td><td>8</td><td>°</td><td>6</td><td>12</td><td>20</td></td<>	09:00 09:15	0	8	8	°	6	12	20
00000 0 7 7 7 3 7 10 17 00000 0 2 2 3 1 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 1 7 1 7 7 1 7 7 1 7 7 1 7 7 1 7 <td< td=""><td>09:15 09:30</td><td>0</td><td>-</td><td>-</td><td>0</td><td>5</td><td>5</td><td>9</td></td<>	09:15 09:30	0	-	-	0	5	5	9
00045 100 7 7 5 19 24 31 1130 1145 0 1	09:30 09:45	0	7	7	e	7	10	17
	09:45 10:00	0	7	7	5	19	24	31
(1130) (1145) $(0$ $(4$ $(7$ (14) (12) (13) (13) (14) (14) (14) (14) (14) (12) (13)	09:00 10:00	0	23	23	11	40	51	74
1145 1200 0 11 11 1 21 22 1200 1230 0 7 7 7 7 2	11:30 11:45	0	4	4	3	7	10	14
	11:45 12:00	0	11	11	7	14	21	32
I215 I220 0 7 7 2 11 13 20 1130 1230 0 3	12:00 12:15	0	13	13	4	7	11	24
(1.130 (1.230 (2.6 (36) (36) (36) (30) (31)	12:15 12:30	0	7	7	2	11	13	20
1230 1246 0 9 9 7 16 26 1245 0 11 11 3 2 9 11 14 26 1245 1300 0 31 3 2 9 11 14 22 13:15 13:30 0 31 31 18 32 50 81 24 13:15 13:0 0 31 31 18 32 50 81 24 15:0 15:0 0 3 2 2 9 1 24 15:0 15:0 0 3 2 2 8 1 24 15:0 15:0 0 2 2 2 7 4 2 15:0 15:0 10 2 2 2 7 4 2 2 15:0 16:0 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 </td <td>11:30 12:30</td> <td>0</td> <td>35</td> <td>35</td> <td>16</td> <td>39</td> <td>55</td> <td>06</td>	11:30 12:30	0	35	35	16	39	55	06
	12:30 12:45	0	6	6	6	7	16	25
(310) (315) $(0$ (3) <th< td=""><td>12:45 13:00</td><td>0</td><td>11</td><td>1</td><td>3</td><td>9</td><td>6</td><td>20</td></th<>	12:45 13:00	0	11	1	3	9	6	20
13:16 13:0 0 8 4 10 14 22 $7:30$ 13:0 0 31 31 18 32 60 81 23 $7:30$ 15:15 0 8 8 2 6 8 66 8 66 $15:15$ 0 8 8 2 6 8 66 7 14 23 $15:05$ 0 2 7 0 1 1 16 14 23 $15:05$ 0 2 7 0 1 1 1 1 $15:05$ 0 2 7 4 33 37 14 24 $15:05$ 0 2 2 2 7 9 14 24 $15:05$ 0 1 1 1 1 14 24 $15:05$ 0 1 1 1 1 24 $15:05$ 0 1 1 1 1 1 $15:05$ 0 1 1 1 1 1 $15:05$ 0 1 1 1 1 1 $15:05$ 0	13:00 13:15	0	e	е	2	6	11	14
	13:15 13:30	0	8	8	4	10	14	23
(550 (5515 0 8 2 6 8 16 (553 0 (0 515 0 7 1 1 1 1 1 1 15 (530 (545 0 0 7 7 10) 0 7 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 2 1 <td>12:30 13:30</td> <td>0</td> <td>31</td> <td>31</td> <td>18</td> <td>32</td> <td>50</td> <td>81</td>	12:30 13:30	0	31	31	18	32	50	81
	15:00 15:15	0	8	8	2	9	8	16
(530 (545 0 7 7 0 8 16 <th< td=""><td>15:15 15:30</td><td>0</td><td>4</td><td>4</td><td>-</td><td>9</td><td>7</td><td>1</td></th<>	15:15 15:30	0	4	4	-	9	7	1
	15:30 15:45	0	7	7	0	8	8	15
15.00 16.00 0 27 27 4 33 37 64 16.30 16:15 0 2 2 2 7 9 11 16:16 10 2 2 2 2 7 9 11 16:30 16:45 10 1 1 1 9 10 21 16:30 16:45 1 7 7 3 10 13 20 16:30 17:30 7 7 7 3 10 13 20 16:30 17:30 7 7 7 3 10 13 20 16:30 17:30 7 7 7 12 21 21 17:16 17:30 17:45 10 3 6 9 12 18 17:45 10 3 3 3 3 6 9 12 18 17:45	15:45 16:00	0	8	8	-	13	14	22
(6:00 (6:15 0 2 2 7 9 11 (6:15 0 1 1 1 1 1 9 10 21 (6:15 0 7 7 7 4 8 12 19 10 21 (6:10 0 7 7 3 10 13 20 20 (6:45 17:00 0 27 27 10 34 44 71 (6:00 7 27 10 34 44 71 20 (17:00 0 27 27 10 34 44 71 (17:00 0 27 27 10 34 12 20 (17:00 0 2 3 3 5 1 2 1 (17:00 0 3 3 3 3 6 1 1 (17:00 0 3	15:00 16:00	0	27	27	4	33	37	64
(6:15 (6:30 0 11 11 1 9 10 21 (6:30 0 7 7 7 4 8 12 29 (6:30 0 7 7 7 3 10 13 20 (6:45 0 7 7 3 10 13 20 (6:45) 0 27 27 10 34 44 71 (6:00 12 27 10 34 44 71 (7:10 17:30 10 2 7 12 21 (7:10 17:45 10 3 4 12 16 (7:30 17:45 10 3 3 3 6 9 12 (7:45 10 0 10 10 10 14 (7:45 10 2 2 1 1 1 (7:46 10 2	16:00 16:15	0	2	2	2	7	6	11
(6.30 (6.45 (0 7 7 4 8 12 19 (6.45 10 0 7 7 7 3 10 13 20 (6.45 10 0 27 10 34 14 71 (7.00 0 27 10 34 14 71 (7.15 17.30 17.16 17.30 10 34 12 18 (7.15 17.30 0 9 5 7 12 18 (7.15 17.30 0 6 6 4 8 12 18 (7.15 17.30 10 3 3 3 6 9 12 (7.45 10.0 0 2 3 3 6 9 12 18 (7.45 10.0 10 10 10 10 12 12 (7.45 10.0 10 2 2 <td>16:15 16:30</td> <td>0</td> <td>11</td> <td>1</td> <td>-</td> <td>6</td> <td>10</td> <td>21</td>	16:15 16:30	0	11	1	-	6	10	21
(6.45 17.00 0 7 7 3 10 13 20 (6500 7 27 10 34 44 71 (7500 0 2 2 10 34 44 71 (7500 0 9 9 5 7 12 21 (7501 17:30 17:45 0 6 4 7 12 21 (77:51 17:30 17:45 0 6 4 12 13 (77:51 17:45 0 3 3 5 3 12 (77:45 100 2 2 12 13 43 16 (77:45 100 2 2 13 13 13 13 (77:45 100 2 2 13 13 13 12 (70:0 10 2 2 13 13 13 16 (71:0 <td>16:30 16:45</td> <td>0</td> <td>7</td> <td>7</td> <td>4</td> <td>80</td> <td>12</td> <td>19</td>	16:30 16:45	0	7	7	4	80	12	19
(6500 17:00 0 27 27 10 34 44 71 7500 17:05 0 9 9 5 7 12 21 17:16 17:30 0 9 9 5 7 12 21 17:15 17:30 0 9 9 5 7 12 13 17:30 17:45 0 3 3 3 6 9 12 13 17:30 17:45 0 3 3 3 6 9 12 13 17:30 17:45 0 2 12 13 6 9 12 13 17:45 18:00 0 2 2 12 31 43 65 17:00 18:00 0 193 87 282 349 542	16:45 17:00	0	7	7	ę	10	13	20
17:00 17:15 17:00 17:15 17:00 12 21 17:15 17:00 0 6 4 8 12 18 17:16 17:00 0 6 4 8 12 18 17:16 17:00 0 3 3 3 6 9 12 17:30 17:30 10 10 10 10 14 17:30 18:00 0 22 22 12 31 43 65 17:00 10 193 87 262 349 542	16:00 17:00	0	27	27	10	34	44	71
17:15 17:30 10 6 6 4 8 12 18 17:30 17:45 0 3 3 3 6 9 12 17:45 0 3 3 3 3 6 9 12 17:45 0 4 4 0 10 10 10 17:00 800 0 22 22 12 31 43 17:00 10 193 87 262 349 542	17:00 17:15	0	6	6	5	7	12	21
7,330 17,45 0 3 3 3 6 9 12 1735 1800 0 4 4 0 10 10 14 1770 1800 0 22 22 12 31 43 65 Total 0 193 1 93 87 282 349 542	17:15 17:30	0	9	9	4	8	12	18
17.45 18.00 0 4 4 4 0 10 10 14 14 17.00 18.00 0 22 22 12 12 31 43 65 Total 0 193 193 87 262 349 542	17:30 17:45	0	ę	e	ę	9	6	12
17:00 18:00 0 22 22 12 31 43 65 Total 0 193 193 87 262 349 542	17:45 18:00	0	4	4	0	10	10	14
Total 0 193 193 87 262 349 542	17:00 18:00	0	22	22	12	31	43	65
	Total	0	193	193	87	262	349	542

Work Order 37476 **Transportation Services - Traffic Services**

-	Turni	
Ottawa		Ċ

Transportation Services - Traffic Services

Work Order 37476 ing Movement Count - Full Study Summary Report

			i))		5											
Survey Date	20 K	ednes 118	iday, J	Januar	ry 31,			F	otal O	bsen	/ed U-T	urns					AAD	T Facto	r
							zш	orthboun	d: 0 1: 14		Southt Westb	:pund:	0 0				1.00		
								Fu	II Stu	₽									
	73 E O	F ARC	CHIBA	LD ST	LWES	TGAT	E SC /	2				Q	RLING	3 AVE					
	ž	orthbou	pur		Š	outhbo	pun		I		Eastbou	pur			Westbo	punc	Ĩ		
Period	5	ST	RT	TOT NB	5	ST	RT	SB TOT	STR TOT	5	ST	RT	EB TOT	5	ST	RT	TOT WB	STR TOT	Grand Total
07:00 08:00	0	0	0	0	3	0	7	10	10	-	617	0	918	0	695	13	708	1626	1636
00:60 00:80	0	0	0	0	80	0	17	25	25	4	958	0	962	0	939	11	956	1918	1943
09:00 10:00	0	0	0	0	14	0	48	62	62	0	815	0	815	0	875	20	895	1710	1772
11:30 12:30	0	0	0	0	21	0	61	82	82	2	692	0	694	0	617	11	928	1622	1704
12:30 13:30	0	0	0	0	17	0	55	72	72	ŝ	702	0	705	0	928	4	932	1637	1709
15:00 16:00	0	0	0	0	18	0	45	63	63	-	658	0	659	0	1601	2	1606	2265	2328
16:00 17:00	0	0	0	0	31	0	38	69	69	ŝ	696	0	972	0	1503	4	1507	2479	2548
17:00 18:00	0	0	0	0	19	0	33	52	52	1	962	0	963	0	1370	5	1375	2338	2390
Sub Total	0	0	0	0	131	0	304	435	435	15	6673	0	6688	0	8828	79	8907	15595	16030
U Turns				0				0	0				14				2	16	16
Total	0	0	0	0	131	0	304	435	435	15	6673	0	6702	0	8828	79	8909	15611	16046
EQ 12Hr	0	0	0	0	182	0	423	605	605	21	9275	0	9316	0	12271	110	12384	21700	22305
Note: These vai	ues are	calcula	ted by r	multiply	ing the t	otals by	the app	propriate	expansi	on facto	or.		-	.39					
AVG 12Hr	0	0	0	0	182	0	423	605	605	21	9275	0	9316	0	12271	110	12384	21700	22305
Note: These voi	umes aı	re calcu	lated by	y multip	lying the	e Equiva	alent 12	hr. totals	by the #	VADT f	actor.		1	00.					
AVG 24Hr	0	0	0	0	239	0	554	792	792	27	12151	0	12204	0	16075	144	16222	28426	29218
Note: These voi	umes aı	re calcu	lated by	y multip	lying the	e Averaç	ge Daily	12 hr. to	tals by 1	2 to 24	expansio	on fact	۲.	.31					

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

2018-Mar-28

Page 1 of 1



ļ† 1960 Page 1 of 4

2018-Mar-28

Page 2 of 4



lt 1731

2018-Mar-28

Page 3 of 4

2018-Mar-28

Page 4 of 4



11

335 🗲

♣ 5

\$

ш

2017-Mar-17

Page 1 of 1

2018-Mar-28

Page 1 of 4



Page 2 of 4

2017-Mar-17

2017-Mar-17

Page 3 of 4





2017-Mar-17

Page 4 of 4

$ \begin{array}{ $	Matrix Currant Full Study Summy Root Matrix Currant Full Study Summy Root Matrix Currant Summy Root Currant Summy Root Matrix Matrix Currant Summy Root Currant Summy Root Currant Summy Root Matrix Matrix <	Transportation Services - Traffic Services work Order	Transportation Services - Traffic Services wo. 34721
	Alt IND AVE @ WESTICATE SCE Antifactory Antifa	Movement Count - Full Study Summary Report	Turning Movement Count - 15 Minute Summary Report
121 Table of the part of t	15.1 Tatolicy 30000 1 30000 1 30000 1 30000 1 30000 1 30000 1 30000 1 30000 1 300000 300000 300000 300000 300000 300000	CARLING AVE @ WESTGATE SC E	Survey Date: Wednesday June 17, 2015 Total Observed U-Turns
Induction Induction <t< th=""><th>Initial Initial <t< th=""><th>*17, 2015 Total Observed U-Turms AADT Factor Northbound: 0 Southbound: 0 .90 Eastbound: 469 Westbound: 4</th><th>WESTGATE SC E CARLING AVE</th></t<></th></t<>	Initial Initial <t< th=""><th>*17, 2015 Total Observed U-Turms AADT Factor Northbound: 0 Southbound: 0 .90 Eastbound: 469 Westbound: 4</th><th>WESTGATE SC E CARLING AVE</th></t<>	*17, 2015 Total Observed U-Turms AADT Factor Northbound: 0 Southbound: 0 .90 Eastbound: 469 Westbound: 4	WESTGATE SC E CARLING AVE
To characterize set the set of the set	The contract of the cont	Full Study	Northbound Southbound Eastbound Westbound .
The contrant of the cont	The contribute of the co	TE SC E CARLING AVE	Time Period LT ST RT TOT LT ST RT TOT TOT TOT TOT TOT TOT TOT TOT TOT
1 1	1 2 1 2 1 2 1 2 1	Southbound Eastbound Westbound	07:00 07:15 2 0 1 3 5 0 3 8 11 12 163 1 182 1 102 7 110 292 303
2 0 1	0 1 0	LT ST RT SB STR LT ST RT EB LT ST RT WB STR Grand TOT TOT TOT TOTAL	07.15 07:30 5 0 1 6 4 0 5 9 15 14 197 3 237 1 117 5 123 360 375
1 1	0 0	22 0 15 37 53 82 821 7 910 5 533 29 567 1477 1530	07:30 07:45 3 1 0 4 4 0 2 6 10 23 224 2 266 3 140 10 153 419 429
0 1	1 1 2 1 3	27 0 38 65 95 141 915 12 1068 2 784 52 838 1906 2001	07.45 08:00 2 0 1 3 9 0 5 14 17 33 237 1 287 0 174 7 181 468 485
1 1	1 1 2 2 2 2 3 1 3 4	62 1 72 135 163 235 663 9 907 9 764 93 866 1773 1936	08:00 08:15 8 0 4 12 5 0 12 17 29 29 220 2 262 1 183 7 191 453 462
0 1 0	0 1 0 1 0 1 0 1 0	78 1 129 208 222 225 539 15 779 3 814 123 940 1719 1941	UBCTD UBC3U 6 Z T 9 8 U TT 19 Z8 36 Z3/ T Z9U U T04 TT 195 455 513 DBC3U DBC45 3 U 3 6 Z U 9 16 22 30 224 Z 263 1 186 13 2013 456 508
10 10 11 10	1 1	80 3 99 182 199 204 603 4 811 4 707 97 808 1619 1818	08:45 09:00 2 0 1 3 7 0 6 13 16 46 234 2 302 0 228 21 249 551 567
0 1 0 1 0 1 0 2 0	0 1 0	77 1 109 187 211 172 667 15 854 7 1266 95 1368 2222 2433	09:00 09:15 5 0 0 5 16 0 9 25 30 47 197 3 264 1 211 22 234 498 528
9 1	0 1 0	99 4 94 197 216 142 671 8 821 1 1681 125 1807 2628 2844	09:15 09:30 3 1 5 9 21 1 17 39 48 61 165 0 246 4 170 23 197 443 491
1 1	0 1 0 10 0	79 2 97 178 204 122 618 14 754 5 1443 94 1542 2296 2500	09:30 09:45 1 0 5 6 10 0 20 30 36 64 162 2 239 0 179 23 202 441 477
0 0 40 10 40 10 40 10 <td>0 0</td> <td>524 12 653 1189 1363 1323 5497 84 6904 36 7992 708 8736 15640 17003</td> <td>09:45 10:00 6 0 2 8 15 0 26 41 49 63 139 4 223 4 204 25 233 456 505</td>	0 0	524 12 653 1189 1363 1323 5497 84 6904 36 7992 708 8736 15640 17003	09:45 10:00 6 0 2 8 15 0 26 41 49 63 139 4 223 4 204 25 233 456 505
10 110 100 101 100 101	1 1	0 0 469 4 473 473	11:30 11:45 3 0 2 5 20 0 31 51 56 58 132 1 200 2 206 26 234 434 490
12 10 10 10 10 10 10 10 10 10 10 10 10 10	2 1 000 100	524 12 653 1189 1363 1323 5497 84 7373 36 7992 708 8740 16113 17476	11:45 12:00 1 0 3 4 26 0 31 57 61 57 130 5 207 1 193 29 223 430 491
International principal expansion factor. 1.39 1.139 1.130 1.13	The ductably the appropriate expansion flact. 133 131 <li131< li=""> 131 131 <li1< td=""><td>728 17 908 1653 1895 1839 7641 117 10248 50 11109 984 12149 22397 24292</td><td>12:00 12:15 0 0 0 10 1 27 38 38 64 135 7 218 0 209 39 249 467 505</td></li1<></li131<>	728 17 908 1653 1895 1839 7641 117 10248 50 11109 984 12149 22397 24292	12:00 12:15 0 0 0 10 1 27 38 38 64 135 7 218 0 209 39 249 467 505
0.00 1.01 1.02 0.01 2.04 0.01 2.01 2.01 2.01 2.01 2.01 2.01 <th< td=""><td>30 10<</td><td>ng the totals by the appropriate expansion factor. 1.39</td><td>12-15 12-30 2 2 1 5 22 0 40 62 67 46 142 2 208 0 206 29 236 444 511</td></th<>	30 10<	ng the totals by the appropriate expansion factor. 1.39	12-15 12-30 2 2 1 5 22 0 40 62 67 46 142 2 208 0 206 29 236 444 511
market for the contained of the co	The remain many many many many many many many man	656 15 817 1487 1705 1655 6877 105 9224 45 9998 886 10934 20158 21863	12:30 12:45 2 1 2 5 17 1 32 50 55 45 169 1 237 1 166 26 193 430 485 12:45 13:00 2 5 0 5 15 2 20 27 42 57 138 3 244 1 160 25 456 400 442
Big D 100 1433 2640 23640 2640 2364 2460 246	30 1000 194 234 214 100 142 2446 244 24 <	ying me Equivalent i z m. totals by the AAUT ractor	
1500 151 50 6 1 6 1 2 2 2 2 1 2 1 2 1 2 2 1 2 </td <td>1 1</td> <td>859 20 1070 1949 2234 2168 9009 138 12083 59 13077 1160 14323 26406 28640 tying the Average Daily 12 hr. totals by 12 to 24 expansion factor. 1.31</td> <td></td>	1 1	859 20 1070 1949 2234 2168 9009 138 12083 59 13077 1160 14323 26406 28640 tying the Average Daily 12 hr. totals by 12 to 24 expansion factor. 1.31	
B: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1:	Propertion Properine Properin Properin Properin		15:00 15:15 3 0 3 6 19 0 31 50 56 4 2 160 7 222 0 261 24 285 507 563
15.30 15.45 6 2 6 1 2 4 1 2 4 1 4 1 3 2 3 6 6 6 6 1 2 4 1 4 2 4 1 4 1 3 2 3 6 6 1 2 2 2 3 6 6 1 2 4 1 4 1 1 2 2 3 6 1 2 3 4 1 3 2 3 4 1 <th1< td=""><td>15.30 [5.45 4 00 2 0 4 0 5 1 2 4 0 5 4 1 5 4 0 7 5 4 1 5 4 1 5 1 2 5 2 2 3 4 5 5 2 2 3 4 5 5 1 5 1 2 5 2 2 3 4 5 5 1 5 1 2 5 2 2 3 4 5 5 1 5 1 2 2 3 2 2 3 4 5 5 1 5 1 2 2 3 2 2 3 2 2 3 1 5 1 2 2 2 3 2 2 3 2 2 2 2 2 2 2 2 2 2 2 2</td><td>als. Refer to 'U-Turn' Report for specific breakdown.</td><td>15.15 15:30 2 0 4 6 14 0 30 44 50 46 178 1 233 4 316 19 339 572 622</td></th1<>	15.30 [5.45 4 00 2 0 4 0 5 1 2 4 0 5 4 1 5 4 0 7 5 4 1 5 4 1 5 1 2 5 2 2 3 4 5 5 2 2 3 4 5 5 1 5 1 2 5 2 2 3 4 5 5 1 5 1 2 5 2 2 3 4 5 5 1 5 1 2 2 3 2 2 3 4 5 5 1 5 1 2 2 3 2 2 3 2 2 3 1 5 1 2 2 2 3 2 2 3 2 2 2 2 2 2 2 2 2 2 2 2	als. Refer to 'U-Turn' Report for specific breakdown.	15.15 15:30 2 0 4 6 14 0 30 44 50 46 178 1 233 4 316 19 339 572 622
15.45 16.00 1	15.45 16.00 16.15 16 16 16 16 1 16 16 16 1 16 1 16 1		15:30 15:45 4 0 2 6 25 1 23 49 55 44 154 4 215 1 325 22 348 563 618
16:00 16:15 3 2 3 8 2 4 154 2 2 2 4 154 2 2 4 154 2 2 4 154 1	16:00 16:15 3 2 10 2 4 10 2 4 10 10 10 10 10 10 10 10 10 10 10 10 10		15.45 16:00 2 0 4 6 19 0 25 44 50 40 175 3 235 2 364 30 396 631 681
	16:15 16:30 16:45 2 1 2 4 26 3 1 174 0 216 1 4 29 1		16:00 16:15 3 2 3 8 22 0 25 47 55 44 154 2 212 1 376 30 407 619 674
16.30 16.45 7.700 1 1 2 4 1 1 1 2 4 1 1 2 4 1 <	16:30 16:45 2 1 1 2 4 31 16 1 2 4 31 16 1 4 33 47 633 77 633 73 16:45 17:00 17:15 1 1 1 2 4 16 1 1 1 2 4 1 1 40 63 77 63 73 17:00 17:15 17:16 1 1 1 2 2 1 1 2 2 1 2 2 1 2		16:15 16:30 2 0 2 4 29 0 23 52 56 31 174 0 216 0 451 32 483 699 75 5
16.45 17.00 17.15 5 1 1 3 24 3 24 51 54 16 16 22 2 23 16 5 232 1 24 0 61 52 726 63 73 73 73 73 73 73 7	16.45 17.00 17.15 1 1 3 24 56 161 5 22 0 410 50 400 672 726 726 17.00 17.15 17.15 17.30 2 2 1 50 30 318 2 202 1 401 620 610 620 610 620 610 620 610 620 610 620 610 620 610 620 610 620 610 620 610 620 610		16:30 16:45 2 1 1 4 24 1 22 47 51 31 162 1 206 0 444 33 477 683 734
17.00 17.16 <td< td=""><td>17.00 17.15 5 1 0 6 22 0 31 53 185 2 28 1 370 29 61 629 681 17.15 17.15 17.30 2 2 1 48 33 138 3 186 1 406 29 617 665 17.30 17.45 17.45 3 1 4 48 33 138 1 466 23 429 617 665 617 665 17.45 1800 4 0 3 48 56 148 6 12 3 203 2 301 17 565 549 579 550 579 579 17.45 1800 4 0 3 1 4 4 4 51 1 1 308 501 1 20 51 34 589 591 501 1 5 34 589 501 1 1 20 1 20 1 1 1<td></td><td>16:45 17:00 1 1 1 3 24 3 24 51 54 36 181 5 232 0 410 30 440 672 726</td></td></td<>	17.00 17.15 5 1 0 6 22 0 31 53 185 2 28 1 370 29 61 629 681 17.15 17.15 17.30 2 2 1 48 33 138 3 186 1 406 29 617 665 17.30 17.45 17.45 3 1 4 48 33 138 1 466 23 429 617 665 617 665 17.45 1800 4 0 3 48 56 148 6 12 3 203 2 301 17 565 549 579 550 579 579 17.45 1800 4 0 3 1 4 4 4 51 1 1 308 501 1 20 51 34 589 591 501 1 5 34 589 501 1 1 20 1 20 1 1 1 <td></td> <td>16:45 17:00 1 1 1 3 24 3 24 51 54 36 181 5 232 0 410 30 440 672 726</td>		16:45 17:00 1 1 1 3 24 3 24 51 54 36 181 5 232 0 410 30 440 672 726
17:16 17:16 17:30 2 2 1 6 48 33 138 3 188 1 405 23 429 617 665 17:30 17:45 17:45 3 1 4 8 19 1 18 38 46 23 23 23 617 665 17:45 18:00 4 0 3 7 19 1 24 44 51 30 25 324 528 579	17.15 17.30 2 1 5 18 3 188 1 405 23 429 617 665 17.30 17.45 3 1 4 8 19 1 18 2 300 17 300 533 639 631 665 632 632 632 633 639 633 639 633 639 633 639 6		17:00 17:15 5 1 0 6 22 0 31 53 59 33 185 2 228 1 370 29 401 629 688
17:30 17:45 3 1 4 8 19 1 18 38 46 26 152 3 203 2 360 17 380 563 629 17:45 18:00 4 0 3 7 19 1 24 44 51 30 143 6 194 1 308 25 334 528 579	17.30 17.45 3 1 4 8 19 1 18 38 46 26 152 3 203 2 360 17 380 563 629 17.45 18:00 4 0 3 7 19 1 24 44 51 30 143 6 194 1 308 25 334 528 579 TOTAL: 92 17 65 174 524 12 653 189 1363 1323 5497 84 7373 36 7982 708 8740 16113 1747 6		17:15 17:30 2 2 1 5 19 0 24 43 48 33 138 3 188 1 405 23 429 617 665
17.45 18.00 4 0 3 7 19 1 24 44 51 30 143 6 194 1 308 25 334 528 579	17.45 18:00 4 0 3 7 19 1 24 44 51 30 143 6 194 1 308 25 334 528 579 TOTAL: 92 17 65 174 524 12 653 1189 1363 1323 5497 84 7373 36 7992 708 8740 16113 17476		17:30 17:45 3 1 4 8 19 1 18 38 46 26 152 3 203 2 360 17 380 583 629
	TOTAL: 92 17 65 174 524 12 653 1189 1363 1323 5497 84 7.373 36 7982 708 8740 16113 17476		17.45 18:00 4 0 3 7 19 1 24 44 51 30 143 6 194 1 308 25 334 528 579

Page 1 of 1

2017-Mar-17

G
2
0
Ŧ
0
1
-

Transportation Services - Traffic Services Turning Movement Count - Cyclist Volume Report

CARLING AVE @ WESTGATE SC E

Count Date	e: Wednesda	y, June 17, 2019	10			Start Time:	02:00	
	3	(ESTGATE SC E			CARLING AVE			
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total	
07:00 08:00	0	0	0	7	с	10	10	
00:00 00:00	0	-	-	6	ø	17	18	
09:00 10:00	0	0	0	9	2	1	7	
11:30 12:30	0	-	-	ы	10	13	14	
12:30 13:30	0	4	4	Ð	9	1	15	
15:00 16:00	0	-	-	ы	4	7	8	
16:00 17:00	0	0	0	4	2	6	6	
17:00 18:00	-	2	ę	8	12	20	23	
Total		σ	10	45	53	98	108	

Comment:

2	
2	
G	
#	
0	
S.	

Work Order 34721

Transportation Services - Traffic Services

<mark>W.O</mark>. 34721

Turning Movement Count - Heavy Vehicle Report

CARLING AVE @ WESTGATE SC E

e 17, 20
/, June
Wednesday
Date:
vey

			STR Grand TOT Total	71 71	113 115	122 124	91 98	88 95	99 101	73 74	50 50	707 728	0 0	707 728	
			₹0 10	41	63	68	53	44	47	38	24	378	0	378	
		I	RT	0	0	7	5	4	с	0	-	15		15	
		pune	ST	40	63	99	48	39	4	38	23	361		361	
	ш	Westbo	5	-	0	0	0	-	0	0	0	3		2	
	g AVI		∎ To	30	50	54	38	44	52	35	26	329	0	329	
	RLIN		RT	0	0	0	0	0	0	0	0	0		0	
	A C	pun	ST	27	46	47	30	39	45	32	21	287		287	
		Eastbo	5	з	4	7	ø	5	7	e	5	42		42	
			STR TOT	0	7	7	2	2	7	-	•	21	0	21	
			° TOT	0	7	7	7	7	7	-	0	21	0	21	
5		I	RT	0	7	-	2	ę	0	0	0	80		8	
, 201		puno	ST	0	0	0	0	0	0	0	0	0		0	
ne 17	ш	Southb	5	0	0	-	5	4	7	-	0	13		13	
ay, Ju	E SC		z to	0	•	•	•	•	•	•	•	•	0	0	
inesd.	TGA		RT	0	0	0	0	0	0	0	0	0		0	
Wec	WES	puno	ST	0	0	0	0	0	0	0	0	0	licles)	0	
ä		Northb	5	0	0	0	0	0	0	0	0	0	vy Veh	0	
/ Date			Period	08:00	00:60	10:00	12:30	13:30	16:00	17:00	18:00	Total	s (Heav	al	
Surve			Time F	00:20	08:00	00:60	11:30	12:30	15:00	16:00	17:00	Sub 1	U-Turn:	Tot	

Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARE NOT included in the Turning Movement Count Summary. 2017-Mar-17

Page 1 of 1

	Survey Date:	Time Perio	00.20	07:15 (07:30	07:45		00:00	08:15 (08:30	08:45	0t.000	00:60	09:15	08:30		09:45	11:30	11.76		12:00	12:15	12:30		12:45	13:00	13:15	4 0 0	0.01	15:15	15:30		15:45	16:00	16.15	2	16:30	51.01
Work Orde 34721			02:00	Grand Total	е (9 ~	. 6	25	15	2	9	52	13	5 G	i 4	42	13	15	33	8	18	28	13	07 02	13	21	5	2 F	17	53	ន	20	81	30 28	3 13	18	103	1
rices	Report		Start Time:	Total	. .	o u	5 6	13	5 0	9 1-	. 9	24	æ ·	с и		21	9	6	14	46	7	14	LG L	34	2	9	10	- 2	5 01	13	10	8	40	90	5 5	5	48	
raffic Serv	ian Volume	TE SC E		WB Approach N or S Crossing)	0、	4 4	· -	6	с ,	ο Ω	5	13	9	04	2	15	2	5	0 7	21	7	8	- 5	- 8	2 w	4	ω r	24	∞	0 00	. ئ	4	25 î	4	- 7	С	18	
ervices - T	nt - Pedestr	E @ WESTGA		EB Approach (N or S Crossing) (. .		- -	4	5 5	r 0	14	11	5	. .	- 0	9	4	4	4 1	- 19	0	9	ю •	t 6	2 2	2	0	4 €	: ~	- 22	J.	4	15	<u>5</u> «	ით	œ	30	
ation Se	ent Coul	RLING AVI		Total	2	- 2		12	10	4 6	4	28	5	4 10		21	7	9	; 4	42	4	14	ω Ļ	48	9 00	15	י 7	30	3 ∞	. 6	5	12	41	4 2	9 9	-	55	
Transport	ning Movem	CAF	June 17, 2015	SB Approach (E or W Crossing)	÷ ,	- 2	1 21	9	، £	rœ	. ന	19	4	04	5	10	4	- 1	о г	17	10	7	, ت	± %	3 4	6	ō •	4 %	9	5 4	7	4	21	α (2 ∞	б	27	
DA	Tur		Wednesday,	NB Approach E or W Crossing)	- 0	0 0	2	9	، ت	- 2	ı .	6	. .	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	a a	11	e	5	œα	25	.	7	ю т	- 6	2	9	5 5	0 ¢	2	Ω I	5	20	20 î	χα	οœ	4	28	
Ottav			Count Date:	Time Period _{(E}	07:00 07:15	07:30 07:45	07:45 08:00	07:00 08:00	08:00 08:15	08:30 08:45	08:45 09:00	00:00 00:00	09:00 09:15	09:15 09:30 Na-30 09:45	09:45 10:00	09:00 10:00	11:30 11:45	11:45 12:00	12:00 12:15 12:15 12:20	11:30 12:30	12:30 12:45	12:45 13:00	13:00 13:15	12:30 13:30	15:00 15:15	15:15 15:30	15:30 15:45	15:45 16:00 16:00	16:00 16:15	16:15 16:30	16:30 16:45	16:45 17:00	16:00 17:00	17:00 17:15 17:30	17:30 17:45	17:45 18:00	17:00 18:00	

Transportation Services - Traffic Services

Work Order 34721

Ottawi	C	Transpo	rtation Se	rvices - T	raffic Serv	ices	Worl
	Turr	ning Moven	nent Count	- 15 Min U-	Turn Total F	Report	
		CARL	ING AVE	® WESTGA	TE SC E		
Survey Date:	Wed	Inesday, June 17	7, 2015				
Time Pe	riod	Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total	
02:00	07:15	0	0	9	0	9	I
07:15	07:30	0	0	23	0	23	I
07:30	07:45	0	0	17	0	17	I
07:45	08:00	0	0	16	0	16	I
08:00	08:15	0	0	11	0	11	I
08:15	08:30	0	0	16	0	16	I
08:30	08:45	0	0	22	0	22	I
08:45	00:60	0	0	20	0	20	I
00:60	09:15	0	0	17	0	17	I
09:15	09:30	0	0	20	0	20	I
06:30	09:45	0	0	11	0	11	I
09:45	10:00	0	0	17	0	17	I
11:30	11:45	0	0	6	0	6	I
11:45	12:00	0	0	15	0	15	I
12:00	12:15	0	0	12	-	13	I
12:15	12:30	0	0	18	٢	19	I
12:30	12:45	0	0	22	0	22	1
12:45	13:00	0	0	16	0	16	I
13:00	13:15	0	0	11	0	11	I
13:15	13:30	0	0	15	0	15	1
15:00	15:15	0	0	13	0	13	
15:15	15:30	0	0	8	0	8	I
15:30	15:45	0	0	13	0	13	1
15:45	16:00	0	0	17	0	17	1
16:00	16:15	0	0	12	0	12	
16:15	16:30	0	0	11	0	11	1
16:30	16:45	0	0	12	0	12	I
16:45	17:00	0	0	10	0	10	1
17:00	17:15	0	0	8	1	6	
17:15	17:30	0	0	14	0	14	
17:30	17:45	0	0	22	1	23	1
17:45	18:00	0	0	15	0	15	1
Tota	-	0	0	469	4	473	1

2017-Mar-17

I

Page 1 of 1

2017-Mar-17

Page 1 of 1


2015-Jul-06

Page 1 of 1





2015-Jul-06

Page 1 of 1

Ott	DMZ	~				Put	olic	٨٥	rks	Ë.	affic	Š	ervio	ses				Work 27	Order 568
			Π	rninç	Mc	vem	ent	Cou	- ti	Full	Stuc	ly S	nmn	Jary	Rep	ort			
		-	Ш.	RIVA	Ë	RD @	112	z	ы К	ARL	SN S	A	Ň	EST(GAT	E SC			
Survey Da	ate:	26-Jul-	10						To	tal Ob	serve	d U-TL	Irns				AAD'	T Facto	r
								North	:punoc	0		Southbo	:punc	0		-	00		
								Eastb	ound:	0		Westbo	:pun	0					
									E.	Study									
			MEF	RIVALE	RD		1			1121	N OF C	CARUN	IG AVE	WES	TGATE	SC			
	z	orthbour	P		Sou	thbound	-			Eastl	punoq			We	stbound	5			
Period		ST	RT	NB TOT		ST	RT	SB TOT	STR TOT	П	ST	RT	10 10	5	ST	RT	TO WB	STR TOT	Grand Total
7.00 8:00	41	117	0	158	0	473	58	531	689	16	0	14	30	0	0	0	•	30	719
8:00 9:00	89	156	0	224	0	420	49	469	693	40	0	33	73	0	0	0	0	73	766
9:00 10:00	73	113	0	186	0	334	74	408	594	54	0	45	66	0	0	0	0	66	693
11:30 12:30	86	149	0	235	0	384	75	459	694	98	0	84	182	0	0	0	0	182	876
12:30 13:30	81	135	0	216	0	294	105	399	615	93	0	98	191	0	0	0	0	191	806
15:00 16:00	LL.	172	0	249	0	401	96	497	746	72	0	95	167	0	0	0	0	167	913
16:00 17:00	70	183	0	253	0	452	80	532	785	95	0	92	187	0	0	0	0	187	972
17:00 18:00	55	180	0	235	0	370	54	424	629	76	0	06	166	0	0	0	0	166	825
Total	551	1205	0	1756	0	3128	591	3719	5475	544	0	551	1095	0	0	0	0	1095	6570
Equ 12Ht	765	1674	0	2439	0	4347	821	5168	7607	756	0	765	1521	0	0	0	0	1521	9128
Note: These	values a	re calcula	ated by	/ multipl	ying th	e totals ł	oy the al	propria	ate exp.	ansion fi	actor.			÷	39				
Avg 12Hr	765	1674	0	2439	0	4347	821	5168	7607	756	0	765	1521	0	0	0	0	1521	9128
Note: These	volumes	s are calcı	ulated	by multi	plying	the Equi	valent 1	2 hr. to	stals by	the AAI	DT facte	or.		÷	8				
Avg 24Hr	1002	2192	0	3195	0	5694	1075	6770	9965	066	0	1002	1992	0	0	0	0	1992	11957
Note: These	volumes	s are calcı	ulated	by multi	plying	the Aver	age Da	ily 12 h	r. total:	s by 12 t	o 24 ex	pansion	factor.	÷	31				
Commer	Its:																		
Note: U-Tur	ns are it	ncluded in	n Tota	s.															
2015-Jul-06	~																	-	bage 1 of

						_	duc	lic /	Vor	ks.	Tra	ffic	Se	- <u>vi</u>	es		
		W		L L	rnin	Б Ц	over	nent	S C	unt.	- 15	Minu	Ite S	Sumi	mar	N R	di la
Sur	rvev Da	te:	ž		26-			1	z	5 ∟	Total	Obse	rved I				u l
									2 I	orthbou	ipu		ŵ.	outhbou	÷p	~	
				MERI	VALE	RD			ш	astbour	112 N	OF C/	ARLIN	G AVE	NES1	GATI	SC
		Ŷ	uthbour	p	;	So	uthboun	Ð			Eas	stbound			Ŵ	astbour	p
Time	Period	Ы	ST	RT	T OT	L	ST	RT	s TOT	TOT	L	ST	RT	TOT	LT	ST	R
7:00	7:15	6	18	0	27	0	106	4	113	140	ю	0	0	5	0	0	0
7:15	7:30	10	29	0	39	0	121	1	132	171	4	0	0	9	0	0	0
7:30	7:45	1	31	0	42	0	116	20	136	178	9	0	4	13	0	0	0
7:45	8:00	11	39	0	50	0	130	20	150	200	e	0	ю	9	0	0	0
8:00	8:15	12	35	0	47	0	108	13	121	168	8	0	8	16	0	0	0
8:15	8:30	13	47	0	60	0	108	14	122	182	10	0	9	16	0	0	0
8:30	8:45	16	39	0	55	0	104	1	115	170	2	0	12	17	0	0	0
8:45	9:00	27	35	0	62	0	100	11	11	173	17	0	2	24	0	0	0
00:6	9:15	18	27	0	45	0	74	14	88	133	4	0	6	16	0	0	0
9:15	9:30	16	98	0	52	0	91	19	110	162	19	0	80	27	0	0	0
9:30	9:45	13	24	0	37	0	84	22	106	143	1	0	13	24	0	0	0
9:45	10:00	26	26	0	52	0	85	19	104	156	17	0	15	32	0	0	0
11:30	11:45	18	41	0	59	0	106	21	127	186	24	0	18	42	0	0	0
11:45	12:00	28	42	0	73	0	97	19	116	189	22	0	24	46	0	0	0
12:00	12:15	16	29	0	45	0	94	19	113	158	25	0	19	4	0	0	0
12:15	12:30	24	8	0	58	0	87	16	103	161	27	0	23	50	0	0	0
12:30	12:45	29	32	0	61	0	87	34	121	182	4	0	30	4	0	0	0
12:45	13:00	16	3	0	50	0	80	13	93	143	31	0	26	21	0	0	0
13:00	13:15	17	37	0	54	0	68	27	95	149	21	0	18	39	0	0	0
13:15	13:30	19	32	0	51	0	59	31	06	141	27	0	24	51	0	0	0
15:00	15:15	24	40	0	64	0	89	16	105	169	18	0	26	4	0	0	0
15:15	15:30	19	41	0	60	0	119	35	154	214	26	0	20	46	0	0	0
15:30	15:45	19	42	0	61	0	88	28	116	177	17	0	23	4	0	0	0
15:45	16:00	15	49	0	64	0	105	17	122	186	1	0	26	37	0	0	0
16:00	16:15	12	4	0	56	0	101	ŝ	106	162	26	0	24	50	0	0	0
16:15	16:30	18	50	0	68	0	140	27	167	235	19	0	31	50	0	0	0
16:30	16:45	21	23	0	73	0	104	23	127	200	28	0	19	47	0	0	0
16:45	17:00	19	37	0	56	0	107	25	132	188	22	0	18	40	0	0	0
17:00	17:15	21	43	0	64	0	101	19	120	184	6	0	22	31	0	0	0
17:15	17:30	13	32	0	45	0	101	11	112	157	21	0	25	46	0	0	0
17:30	17:45	10	53	0	63	0	82	15	97	160	28	0	22	50	0	0	0
17:45	18:00	11	25	0	63	0	86	6	95	158	18	0	21	39	0	0	0

Page 1 of 1

TOTAL: 551 1205 0 17 Note: U-Turns are included in Totals. 2015-Jul-06

63

\$

W.O.

ပ t

W STR TOT TOT

ŝ

•

24 16

Turning Movement Count - Cyclist Volume Report MERIVALE RD @ 112 NOF CARLING AVE/WESTGATE SI MERIVALE RD @ 112 NOF CARLING AVE/WESTGATE SI Count Date: 26-Jul-10 St MERIVALE RD @ 112 NOF CARLING AVE/WESTGATE SI Time Period Northbound Sutent Total St MERIVALE RD 112 NOF CARLING AVE/WESTGATE SI Time Period Northbound Sutent Total URE Time Period Northbound Sutent Total Time Period Northbound Sutent Total Time Period Northbound Sutent Total Time Period Northbound Sutent Total Time Period Northbound Sutent Total Time Period Northbound Sutent Total 700 500 1 0 <t< th=""><th>Public Works - Traffic Services</th><th>olic Works - Traffic Services</th><th>orks - Traffic Services</th><th>s - Traffic Services W.O. 2768</th><th>affic Services W.O. 27568</th><th>: Services W.o. 27568</th><th>Vices W.O. 27568</th><th>S W.O. 27568</th><th>W.O. 27568</th><th>W.O. 27568</th><th>W.O. 27568</th><th>V.O. 27568</th><th></th><th></th></t<>	Public Works - Traffic Services	olic Works - Traffic Services	orks - Traffic Services	s - Traffic Services W.O. 2768	affic Services W.O. 27568	: Services W.o. 27568	Vices W.O. 27568	S W.O. 27568	W.O. 27568	W.O. 27568	W.O. 27568	V.O. 27568		
MERIVALE RD @ 112 N OF CARLING AVEWESTGATE SC Count Date: 26Jul-10 Start Til MERVALE RD 112 N OF CARLING AVEWESTGATE SC Merval Merval Start Til Anno 800 Northbound Start Total Start Til Time Period Northbound Start Total Start Total Time Period Northbound Start Total 12 N OF CARLING AVEWESTGATE SC Time Period Northbound Start Total Start Total Start Total 700 8:00 7 8 7 9 700 8:00 7 13 2 14 0 0 0 700 8:00 1 7 8 1 0 0 0 1 1 700 16:00 1 7 8 1 0 0 1 1 700 16:00 1 7 8 3 1 4 1 700 16:00 1 7 8	Turning Movement Count - Heavy Vehicle Report	ovement Count - Heavy Vehicle Report	nt Count - Heavy Vehicle Report	unt - Heavy Vehicle Report	Heavy Vehicle Report	vy Vehicle Report	hicle Report	Report	ort					
Count Date: 26-Jul-10Start Time: Start Time: Start Time MENVLE RITOP CARLING AVEWESTIGATE SCMENVLE RStart Time: Start Time: 	MERIVALE RD @ 112 N OF CARLING AVE/WESTGATE SC	@ 112 N OF CARLING AVE/WESTGATE SC	N OF CARLING AVE/WESTGATE SC	CARLING AVE/WESTGATE SC	LING AVE/WESTGATE SC	AVE/WESTGATE SC	:/WESTGATE SC	STGATE SC	VTE SC	22				
Inter Period Inter Period Inter Period Inter Period Inter Period Street Total Eastfound Street Total Street Total <th>26-Jul-10</th> <th></th>	26-Jul-10													
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	MERIVALE RD 112 N OF CARLING AVEWESTGATE SC	112 N OF CARLING AVEWESTGATE SC	112 N OF CARLING AVE/WESTGATE SC	112 N OF CARLING AVE/WESTGATE SC	N OF CARLING AVE/WESTGATE SC	ARLING AVE/WESTGATE SC	3 AVE/WESTGATE SC	VESTGATE SC	VTE SC					
700 800 6 14 0 0 0 14 800 900 7 13 20 1 0 1 21 800 1000 7 3 5 1 0 1 6 21 1120 1230 6 4 10 3 1 4 1 1120 1230 6 4 10 3 1 1 6 1 1500 16 3 9 2 3 3 6 3 1 1 1600 13 9 2 3 3 6 3 1 <td>Ind Southbound Eastbound Westbound</td> <td>und Eastbound Westbound</td> <td>Eastbound Westbound</td> <td>Eastbound Westbound</td> <td>Tastbound Westbound</td> <td>d Westbound</td> <td>Westbound</td> <td>Westbound</td> <td>pun</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Ind Southbound Eastbound Westbound	und Eastbound Westbound	Eastbound Westbound	Eastbound Westbound	Tastbound Westbound	d Westbound	Westbound	Westbound	pun					
800 800 7 13 20 1 0 1 0 1 21 900 10000 2 3 5 1 0 0 1 0 1 0 1 6 6 1 1 0 1 1 6 6 1 1 0 1 6 6 1 1 0 1 1 6 1	ST RT _N_LT ST RT S STR LT ST RT _E_LT ST RT _W STR Grand	ST RT S STR LT ST RT W STR Grand	S STR LT ST RT E LT ST RT W STR Grand	STR LT ST RT E LT ST RT W STR Grand	LT ST RT E LT ST RT W STR Grand	ST RT E LT ST RT W STR Grand	F E LT ST RT W STR Grand	LT ST RT W STR Grand	ST RT W STR Grand	RT W STR Grand	W STR Grand	TR Grand	rand	
900 1000 2 3 5 1 0 1 4 14 11:30 6 4 10 3 1 4 14 12:30 6 7 8 3 0 1 4 14 12:30 16 7 8 3 0 1 4 14 15:00 16 3 9 0 1 1 10 10 16:00 13 9 22 3 3 6 28 20 20 20 20 20 20 20 20 20 20 20 20 20 20 12 </td <td></td> <td>TOT TOT TOT TOT TOT TOT</td> <td>T0T T0T</td> <td>101 101 101 101 101 101</td> <td>101 101 101 101 101 101</td> <td>TOT 701 TOT 101</td> <td>101 0 101 101 10tal</td> <td>- TOT TOT Total</td> <td>2 101 101 Total</td> <td>101 101 10tal</td> <td>10T 10T Total</td> <td>TOT Total</td> <td>otal</td> <td></td>		TOT TOT TOT TOT TOT TOT	T0T T0T	101 101 101 101 101 101	101 101 101 101 101 101	TOT 701 TOT 101	101 0 101 101 10tal	- TOT TOT Total	2 101 101 Total	101 101 10tal	10T 10T Total	TOT Total	otal	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		2 0 2 3 0 0 4 4 0 0 0 4 3	2 3 0 0 4 4 0 0 0 4 4 3	2 1 0 0 4 4 0 0 0 4 4 0 0 2 C	0 0 4 4 0 0 0 4 8		4 0 0 0 4 A	0 0 0 0 4 9	0 0 0 4 a	0 0 4 a	0 4 v	4 2	'n	
12:30 1 7 8 3 0 3 11 15:30 16:00 6 3 9 0 1 1 1 10 15:30 13 9 22 3 3 6 7 1 1 17:30 13 9 13 1 0 1 1 1 17:30 13 9 13 1 0 1 1 17:30 13 9 13 1 0 1 1 17:30 13 9 13 1 0 1 1 17:30 13 9 13 1 0 1 1 17:30 13 1 0 1 1 1 16:41	2 0 5 0 2 1 3 8 0 0 5 5 0 0 0 5 13	2 1 3 8 0 0 5 5 0 0 0 5 13	3 8 0 0 5 5 0 0 0 5 13	8 0 0 5 5 0 0 0 5 13	0 0 5 5 0 0 0 5 13	055000513	5 5 0 0 0 5 13	0 0 0 5 13	0 0 5 13	0 5 13	0 5 13	5 13	13	
15:00 16:00 6 3 9 0 1 1 10 16:00 13 9 22 3 3 6 28 16:00 18:00 13 9 18 1 0 6 28 17:00 18:00 9 18 1 0 1 19 17:04:01 52 54 106 12 5 17 12 Comment: 2 10 12 5 17 12 Note: These volumes consists of bicycles only (no mopeds or motocycles) and ARE NOT included in the Turing Movement Count Summary. 2015-40-06 2016-40-06 Page ¹	1 0 7 0 3 0 3 10 1 0 4 5 0 0 0 5 15	3 0 3 10 1 0 4 5 0 0 0 0 5 15	3 10 1 0 4 5 0 0 0 0 5 15	10 1 0 4 5 0 0 0 0 5 15	1 0 4 5 0 0 0 0 5 15	0 4 5 0 0 0 5 15	1 5 0 0 0 5 15	0 0 0 5 15	0 0 5 15	0 0 5 15	0 5 15	5 15	15	
(6:00 (7:00 (13) (9) (22) (3) (6) (6) (23) (7) (6) (7) (13) (14) (13) (14) (14) (14) (14) (14) (13) (14)	1 0 5 0 0 0 0 5 0 0 7 7 0 0 0 7 12	0 0 0 5 0 0 7 7 0 0 0 0 7 12	0 5 0 0 7 7 0 0 0 0 7 12	5 0 0 7 7 0 0 0 0 7 12	0 0 7 7 0 0 0 0 7 12	0 7 7 0 0 0 0 7 12	. 7 0 0 0 0 7 12	0 0 0 7 12	0 0 0 7 12	0 0 7 12	0 7 12	7 12	12	
17:00 18:00 9 9 18 1 0 1 19 Total 22 54 106 12 5 17 123 Comment: 6 not occycles) and ARENOT included in the Tuning Movement Count Summary. 2015-04-06 Page 1 Page 1	0 0 7 0 0 0 7 0 0 6 6 0 0 0 6 13	0 0 0 7 0 0 6 6 0 0 0 0 6 13	0 7 0 6 6 0 0 0 6 13	7 0 0 6 6 0 0 0 0 6 13	0 0 6 6 0 0 0 6 13	0 6 6 0 0 0 6 13	5 6 0 0 0 6 13	0 0 0 6 13	0 0 6 13	0 0 6 13	0 6 13	6 13	13	
Total 22 54 106 12 5 17 123 Comment: Comment: Note: These volumes consists of bicycles only (no mopeds or motorcycles) and ARENOT included in the Turning Movement Count Summary. Page 1 2015-Jul-06 2015-Jul-06 Page 1	1 0 5 0 1 0 1 6 0 0 2 2 0 0 0 0 2 8	1 0 1 6 0 0 2 2 0 0 0 0 2 8	1 6 0 0 2 2 0 0 0 0 2 8	6 0 0 2 2 0 0 0 0 2 8	0 0 2 2 0 0 0 0 2 8	0 2 2 0 0 0 0 2 8	2 0 0 0 2 8	0 0 0 2 8	0 0 0 2 8	0 0 2 8	0 2 8	2 8	8	
Comment: Note: These volumes consists of bicycles only (to mopeds or motorcycles) and ARENOT included in the Turning Movement Count Summary. 2015-Jul-06	2 0 8 0 2 0 2 10 0 0 2 2 0 0 0 0 2 12	2 0 2 10 0 0 2 2 0 0 0 0 2 12	2 10 0 0 2 2 0 0 0 0 2 12	10 0 0 2 2 0 0 0 0 2 12	0 0 2 2 0 0 0 0 2 12	0 2 2 0 0 0 0 2 12	2 0 0 0 2 12	0 0 0 2 12	0 0 0 2 12	0 0 2 12	0 2 12	2 12	12	
Note: These volumes consists of bicycles only (to mopeds or motorcycles) and ARENOT included in the Turning Movement Count Summary. 2015-Jul-06	2 0 4 0 1 1 2 6 0 0 3 3 0 0 0 0 3 9	1 1 2 6 0 0 3 3 0 0 0 0 3 9	2 6 0 0 3 3 0 0 0 0 3 9	6 0 0 3 3 0 0 0 0 3 9	0 0 3 3 0 0 0 0 3 9	0 3 3 0 0 0 3 9	3 0 0 0 3 9	0 0 0 3 9	0 0 3 9	0 0 3 9	0 3 9	3 9	6	
2015-Jul-06 Page 1	10 0 44 0 11 2 13 57 1 0 33 34 0 0 0 34 91	11 2 13 57 1 0 33 34 0 0 0 34 91	13 57 1 0 33 34 0 0 0 34 91	57 1 0 33 34 0 0 0 0 34 91	1 0 33 34 0 0 0 34 91	0 33 34 0 0 0 34 91	3 34 0 0 0 34 91	0 0 0 34 91	0 0 0 34 91	0 0 34 91	0 34 91	34 91	91	
	icles having one rear aske with four or more wheels, or having two or more rear axles. These vehicles include most O.C. Transpo, school	ith four or more wheels, or having two or more rear axles. These vehicles include most O.C. Transpo, school	ore wheels, or having two or more rear axles. These vehicles include most O.C. Transpo, school	els, or having two or more rear axles. These vehicles include most O.C. Transpo, school	ving two or more rear axles. These vehicles include most O.C. Transpo, school	or more rear axles. These vehicles include most O.C. Transpo, school	rear axles. These vehicles include most O.C. Transpo, school	s. These vehicles include most O.C. Transpo, school	vehicles include most O.C. Transpo, school	include most O.C. Transpo, school	most O.C. Transpo, school	C. Transpo, school	, school	

Public Works - Traffic Services

Printed on: 2015-Jul-06

Page 1 of 1



Public Works - Traffic Services

Work Order 27568

Turning Movement Count - Pedestrian Volume Report

			MERIVALE RD	0 @ 112 N	OF CARLING	AVE/WESTGA	TE SC	
Count	Date	:: 26-Jul-10					Start Time:	7:00
Time Pe	eriod	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
2:00	7:15	0	0	0	1	0	£	1
7:15 7	7:30	0	0	0	-	0	-	٢
7:30	7:45	-	0	-	0	0	0	۲
7:45 8	8:00	0	0	0	0	0	0	0
3 00:2	8:00	٢	0	1	2	0	2	3
8:00	8:15	0	0	0	0	0	0	0
8:15	8:30	-	2	3	0	0	0	3
8:30	8:45	0	-	-	3	0	3	4
8:45 5	00:6	0	0	0	0	0	0	0
8:00	00:6	+	3	4	3	0	3	7
3 00:6	9:15	0	е	e	e	0	3	9
9:15	9:30	-	-	2	0	0	0	2
9:30	9:45	0	2	2	0	0	0	2
9:45 1	00:01	0	0	0	2	0	2	2
9:00	00:01	-	9	7	5	0	5	12
11:30 1	1:45	0	F	٢	0	0	0	۴
11:45 1	12:00	0	0	0	0	0	0	0
12:00 1	12:15	0	2	2	0	0	0	2
12:15 1.	2:30	0	9	9	0	0	0	9
11:30 1	2:30	0	6	6	0	0	0	6
12:30 1	2:45	0	e	e	F	0	£	4
12:45 1	3:00	0	5	5	0	0	0	5
13:00 1	13:15	0	3	3	2	0	2	2
13:15 1	3:30	0	2	2	0	0	0	2
12:30 1	3:30	0	13	13	3	0	3	16
15:00 1	5:15	0	2	2	F	0	£	3
15:15 1	5:30	-	с	4	+	0	-	5
15:30 1	5:45	-	-	2	-	0	+	8
15:45 1	6:00	0	٢	٢	0	0	0	٢
15:00 1	6:00	2	7	6	3	0	3	12
16:00 1	6:15	2	2	4	1	0	t	5
16:15 1	6:30	0	3	3	0	2	2	5
16:30 1	I6:45	0	2	2	0	0	0	2
16:45 1	2:00	3	0	3	0	0	0	3
16:00 1	2:00	5	7	12	1	2	3	15
17:00 1	7:15	-	0	٢	0	0	0	٢
17:15 1	17:30	0	2	7	0	0	0	2
17:30 1	17:45	0	0	0	-	0	-	٠
17:45 1	8:00	0	0	0	0	0	0	0
17:00 1	8:00	-	2	3	1	0	1	4
Total		11	47	58	18	2	20	78
Com	nment:							
1 3100	201-1							Dozo 1 of
20102	on-Inf							n i aße i n

Appendix C City of Ottawa Collision Data

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	21	23	19	15	0	2	0	2	82	80%
Non-fatal injury	7	9	1	2	0	1	0	0	20	19%
Non reportable	1	0	0	0	0	0	0	0	1	1%
Total	29	32	20	17	0	3	0	2	103	100%
	#2 or 28%	#1 or 31%	#3 or 19%	#4 or 17%	#7 or 0%	#5 or 3%	#7 or 0%	#6 or 2%		-

CARLING AVE/MERIVALE RD

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	67	33,820	1825	1.09

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	14	15	12	12	0	0	0	0	53	79%
Non-fatal injury	4	7	1	1	0	0	0	0	13	19%
Non reportable	1	0	0	0	0	0	0	0	1	2%
Total	19	22	13	13	0	0	0	0	67	100%
	28%	33%	19%	19%	0%	0%	0%	0%		-

CARLING AVE/WESTGATE SC W

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	4	29,220	1825	0.08

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	2	1	0	0	0	0	0	4	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	2	1	0	0	0	0	0	4	100%
	25%	50%	25%	0%	0%	0%	0%	0%		-

CARLING AVE/WESTGATE SC E

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	16	28,650	1825	0.31

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	2	5	1	3	0	1	0	1	13	81%
Non-fatal injury	1	1	0	0	0	1	0	0	3	19%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	3	6	1	3	0	2	0	1	16	100%
-	19%	38%	6%	19%	0%	13%	0%	6%		

MERIVALE RD/WESTGATE SC

Vears	Total #	24 Hr AADT	Davs	Collisions/MEV
10015	Collisions	Veh Volume	Bays	oomstons/met
2012-2016	2	12,000	1825	0.09

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	0	0	0	0	0	0	0	1	50%
Non-fatal injury	0	1	0	0	0	0	0	0	1	50%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	1	0	0	0	0	0	0	2	100%
	50%	50%	0%	0%	0%	0%	0%	0%		-

CARLING AVE, MEATH ST to ARCHIBALD ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	1	12,210	1825	0.04

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	1	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	0	0	0	0	0	0	0	1	1	100%
	0%	0%	0%	0%	0%	0%	0%	100%		-

CARLING AVE, ARCHIBALD ST to WESTGATE SC W

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	1	12,210	1825	0.04

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	0%
Non-fatal injury	1	0	0	0	0	0	0	0	1	100%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	0	0	0	0	0	0	0	1	100%
	100%	0%	0%	0%	0%	0%	0%	0%		-

CARLING AVE, WESTGATE SC E to WESTGATE SC W

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	2	26,410	1825	0.04

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	0%
Non-fatal injury	1	0	0	1	0	0	0	0	2	100%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	0	0	1	0	0	0	0	2	100%
	50%	0%	0%	50%	0%	0%	0%	0%		-

CARLING AVE, HWY417 IC124 RAMP67 to HWY417 IC124 RAMP65

Years	Lotal # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	7	16,630	1825	0.23

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	1	5	0	0	0	0	0	7	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	1	5	0	0	0	0	0	7	100%
	14%	14%	71%	0%	0%	0%	0%	0%		-

MERIVALE RD, ISLAND PARK DR to WESTGATE SC

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV	
2012-2016	2	9,960	1825	0.11	

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	0	0	0	0	1	0	0	2	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	0	0	0	0	1	0	0	2	100%
	50%	0%	0%	0%	0%	50%	0%	0%		

CARLING AVE, HWY417 IC124 RAMP65 to WESTGATE SC W

Years	Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	1	28,790	1825	0.02

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	0	0	0	0	0	0	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	1	0	0	0	0	0	0	0	1	100%
	100%	0%	0%	0%	0%	0%	0%	0%		•



City Operations - Transportation Services Collision Details Report - Public Version

From: January 1, 2012 To: December 31, 2016

Location: CARLI	NG AVE @ 73	E OF ARCHIBALD	D ST/WESTGATE	SC						
Traffic Control: Tra	ffic signal					Total Collisions: 4				
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped	
2016-Oct-20, Thu,20:17	Rain	Turning movement	P.D. only	Wet	West	Making "U" turn	Passenger van	Other motor vehicle		
					East	Going ahead	Automobile, station wagon	Other motor vehicle		
2016-Nov-27, Sun,10:24	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle		
					West	Going ahead	Automobile, station wagon	Other motor vehicle		
2012 Jon 07 Man 12:05	Clear	Poor and		\M/ot	Foot	Coing chood	Automobilo	Other motor		
2013-Jan-07, Mon, 13.05	Clear	Rearend	P.D. Only	vvei	East	Going anead	station wagon	vehicle		
					East	Stopped	Automobile, station wagon	Other motor vehicle		
2012-Jun-19, Tue,16:52	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle		
					West	Going ahead	Pick-up truck	Other motor vehicle		

Location: CARLING AVE @ MERIVALE RD

Traffic Control: Traffic signal

Total Collisions: 67

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2014-Jan-15, Wed,07:31	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

2014-Feb-14, Fri,10:23	Clear	Turning movement	P.D. only	Loose snow	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Passenger van	Other motor vehicle
2014-Feb-13, Thu,09:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor
					East	Turning right	Automobile, station wagon	Other motor vehicle
2014-Apr-06, Sun,16:04	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Feb-28, Fri,16:57	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2014-May-14, Wed,16:15	Clear	Rear end	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle
					South	Turning right	Automobile, station wagon	Other motor vehicle
2014-Aug-05, Tue,15:39	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Passenger van	Other motor vehicle
2014-Oct-03, Fri,13:08	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning right	Truck - closed	Other motor vehicle

2014-Nov-20, Thu,17:31	Clear	Rear end	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Automobile, station wagon	Other motor vehicle
2014-Oct-08 Wed 10:51	Clear	Turning movement	P.D. only	Drv	Fast	Turning right	Automobile	Other motor
2011 00(00, 100, 100	oloui		1.5.0.1	Dij	Luot		station wagon	vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
						_		
2014-Aug-14, Thu,15:00	Rain	Turning movement	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle
2015-Apr-24, Fri,22:09	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Pick-up truck	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2015-Feb-20, Fri,13:24	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle
				_				
2015-Jan-05, Mon,14:09	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Mar-02, Mon,17:53	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
					_			
2015-Jul-19, Sun,17:10	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle

					West	Turning left	Automobile, station wagon	Other motor vehicle
2015-Feb-03, Tue,16:12	Snow	Angle	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Turning left	Automobile, station wagon	Other motor vehicle
2015-Apr-07, Tue,13:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Turning left	Passenger van	Other motor vehicle
2015-Apr-04, Sat,23:40	Clear	Angle	P.D. only	Dry	North	Going ahead	Police vehicle	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2015-May-27, Wed,16:41	Clear	Angle	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Feb-17, Tue,13:36	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Passenger van	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2016-Feb-16, Tue,07:45	Snow	Rear end	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Other motor vehicle
					North	Turning right	Pick-up truck	Other motor vehicle
2016-Oct-06, Thu,11:45	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Truck and trailer	Other motor vehicle

					East	Stopped	Automobile, station wagon	Other motor vehicle
2016-Sep-23, Fri,08:04	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Truck - closed	Other motor vehicle
2015-May-26, Tue,15:00	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jan-04, Mon,17:40	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2015-Dec-09, Wed,20:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jan-17, Sun,18:01	Clear	Turning movement	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-23, Tue,13:33	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Sep-08, Thu,23:07	Clear	Rear end	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					North	Turning left	Automobile, station wagon	Other motor vehicle

2016-Sep-09, Fri,13:35	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle
					South	l urning right	Automobile, station wagon	Other motor vehicle
2016-Jun-03, Fri,23:03	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Dec-08, Thu,09:41	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Nov-30, Wed,19:00	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Dec-06, Tue,13:40	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Dec-06, Tue,20:39	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Pick-up truck	Other motor vehicle
2013-Jan-02, Wed,17:06	Snow	Turning movement	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Turning left	Passenger van	Other motor vehicle

2013-Mar-04, Mon,09:14	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Making "U" turn	Ambulance	Other motor vehicle
2013-Jun-22, Sat,15:58	Rain	Rear end	Non-fatal injury	Wet	North	Turning right	Automobile,	Other motor
			, ,			0.0	station wagon	vehicle
					North	Turning right	Automobile, station wagon	Other motor vehicle
2013- Jun-24 Mon 13:53	Clear		Non-fatal injury	Dry	West	Turning left	Bicycle	Other motor
2013-301-24, 1001, 13.33	Oledi	running movement	Non-latal injury	ыу	W631	running leit	Dicycle	vehicle
					West	Going ahead	Automobile, station wagon	Cyclist
2013-Jul-09, Tue,06:44	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2013-Jul-10, Wed,17:15	Clear	Rear end	Non-reportable	Dry	North	Going ahead	Passenger van	Other motor vehicle
					North	Stopped	Pick-up truck	Other motor vehicle
2013-Aug-27, Tue,16:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
_					West	Going ahead	Automobile, station wagon	Other motor vehicle
				_				
2013-Oct-09, Wed,08:06	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					East	Stopped	Municipal transit bus	Other motor vehicle
	Clear	Deer and	Non fotol initiati		Foot	Coing shared	Automatila	Other meter
2013-Oct-09, Wed,17:28	Clear	Rear end	inon-tatal injury	DIY	East	Going anead	station wagon	vehicle

					East	Stopped	Pick-up truck	Other motor vehicle
2013-Dec-16, Mon,15:00	Clear	Sideswipe	P.D. only	Loose snow	North	Turning left	Unknown	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2013-Dec-12, Thu,13:10	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					West	Turning left	Automobile, station wagon	Other motor vehicle
2013-Dec-24, Tue,14:30	Clear	Turning movement	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2013-Dec-19, Thu,13:30	Clear	Turning movement	P.D. only	Slush	East	Making "U" turn	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Jan-05, Thu,13:44	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Jan-06, Fri,11:33	Clear	Sideswipe	P.D. only	Wet	West	Turning left	Municipal transit bus	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Feb-09, Thu,14:00	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	g Pick-up truck	Other motor vehicle
					South	Slowing or stopping	g Pick-up truck	Other motor vehicle

2012 Eab 20 Wad 11:20	Clear	Anglo		Day	Most	Coing chood	Automobile	Other meter
2012-Feb-29, Weu, 11.30	Clear	Angle	P.D. offiy	DIy	vvesi	Going aneau	station wagon	vehicle
					North	Turning left	Passenger van	Other motor vehicle
2012-Jan-27, Fri,17:20	Freezing Rain	Rear end	P.D. only	Slush	West	Slowing or stopping	Pick-up truck	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
		-		_				a
2012-Aug-02, Thu,16:45	Clear	I urning movement	P.D. only	Dry	East	l urning left	Pick-up truck	Vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
0040 4 00 144 107 45		- · ·		5		T :		<u>0</u>
2012-Aug-22, Wed,07:15	Clear	I urning movement	P.D. only	Dry	West	l urning left	Pick-up truck	Vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Aug-26, Sun,13:15	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Aug-17, Fri,08:45	Clear	Sideswipe	P.D. only	Wet	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Municipal transit bus	Other motor vehicle
2012-Jul-11, Wed,10:25	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle
					North	Slowing or stopping	Pick-up truck	Other motor vehicle
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle

					North	Slowing or stopping Automobile, station wagon		Other motor vehicle
2012-Jul-10, Tue,12:30	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2012-Sep-08, Sat,21:35	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Aug-10, Fri,16:19	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Oct-30, Tue,19:05	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle
					East	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Nov-21, Wed,17:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2012-Nov-30, Fri,17:47	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2012-Dec-21, Fri,23:32	Snow	Angle	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2012-Dec-30, Sun,15:54	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

Location: CARLING AVE @ WESTGATE SC E

Traffic	Contro	: Traffic	signal
---------	--------	-----------	--------

Total Collisions: 16

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2014-Jun-02, Mon,09:21	Clear	Rear end	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Turning left	Pick-up truck	Other motor vehicle	
2015-Feb-04, Wed,15:15	Snow	Angle	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Skidding/sliding	
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015 May 10 Tue 10:00	Clear	Angle	D.D. anh	Der	Couth	Turnin a visit	Automobile	Othermeter	
2015-May-12, Tue, 10:09	Clear	Angle	P.D. only	Dry	South	i urning right	station wagon	vehicle	
_					West	Stopped	Municipal transit bus	Other motor vehicle	
		A 1		5	- ·		D	0.1	
2015-Sep-24, Thu,16:40	Clear	Angle	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	
					South	Turning left	Automobile, station wagon	Other motor vehicle	
				_	_		_		
2015-May-20, Wed,10:08	Clear	Turning movement	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

2015-Jan-03, Sat,19:34	Snow	Sideswipe	P.D. only	Packed snow	South	Turning right	Municipal transit bus	Other motor vehicle
					South	Turning right	Pick-up truck	Other motor vehicle
2016-Jul-22, Fri,12:53	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Motorcycle	Skidding/sliding
2016-Oct-31, Mon,12:53	Clear	Other	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle
					West	Stopped	Pick-up truck	Other motor vehicle
2016-Sep-23, Fri,09:15	Clear	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Pick-up truck	Other motor vehicle
2016-Jul-05, Tue,12:34	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Stopped	Automobile, station wagon	Other motor vehicle
2013-Jan-11, Fri,12:12	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2013-May-22, Wed,21:37	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Cyclist
					West	Slowing or stopping	Bicycle	Other motor vehicle
2013-Aug-04, Sun,18:37	Clear	SMV other	P.D. only	Wet	West	Turning right	Truck and trailer	Pole (utility, power)

2013-Jun-25, Tue,16:30	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping Automobile, station wagon		Other motor vehicle
					East	Stopped	Pick-up truck	Other motor vehicle
2012 Aug 20 Tup 19/02	Clear	Turning movement		Dat	Faat	Turning loft	Automobilo	Other meter
2013-Aug-20, Tue, 16.02	Clear	ruming movement	P.D. only	DIY	Easi	ruming leit	station wagon	vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2012-Aug-28, Tue,08:16	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

Location: CARLING AVE btwn ARCHIBALD ST & 73 E OF ARCHIBALD ST/WESTGATE SC W

Traffic Control: No		Total Collisions: 1								
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	er Vehicle type	First Event	No. Ped	
2016-Feb-16, Tue,19:01	Snow	Rear end	Non-fatal injury	Loose snow	East	Going ahead	Pick-up truck	Other motor vehicle		
					East	Turning right	Automobile, station wagon	Other motor vehicle		

Location: CARLING AVE EB btwn MEATH ST & ARCHIBALD ST Total Collisions: 1 Traffic Control: No control Date/Day/Time Impact Type Classification Vehicle Manoeuver Vehicle type First Event Environment Surface Veh. Dir No. Ped Cond'n 2012-Jan-07, Sat, 19:59 Other P.D. only Dry East Going ahead Pick-up truck Other Clear Going ahead Pick-up truck Other motor East vehicle

Location: CARLING AVE EB btwn WESTGATE SC E & 73 E OF ARCHIBALD ST/WESTGATE SC W

Traffic Control: No control						Total Collisions: 2					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver Vehicle type	First Event	No. Ped			

2014-Oct-23, Thu,11:46	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Other motor vehicle
2012-Aug-06, Mon,08:30	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle
					North	Turning right	Automobile, station wagon	Cyclist

Location: CARLING AVE WB btwn HWY417 IC124 RAMP65 & 73 E OF ARCHIBALD ST/WESTGAT

Traffic Control: No o	control			Total Collisions: 1					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	· Vehicle type	First Event	No. Ped
2012-Nov-07, Wed,19:18	Clear	Rear end	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Pick-up truck	Other motor vehicle	

Location: CARLING AVE WB btwn HWY417 IC124 RAMP67 & HWY417 IC124 RAMP65

Traffic Control: No	control			Total Collisions: 7					
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	r Vehicle type	First Event	No. Ped
2014-Apr-28, Mon, 12:43	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Pick-up truck	Other motor vehicle	
2014-Sep-16, Tue,10:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	g Unknown	Other motor vehicle	
					West	Stopped	Passenger van	Other motor vehicle	
2016-Feb-01, Mon,08:50	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Truck - closed	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

2013-Apr-17, Wed,17:18	Clear	Sideswipe	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Municipal transit bus	Other motor vehicle
	Dain	Oldanuina		14/-1	14/	Ohana ina lanaa	Asstance bills	Other mater
2013-Jul-19, Fn,15:15	Rain	Sideswipe	P.D. only	vvet	vvest	Changing lanes	station wagon	vehicle
					West	Changing lanes	Automobile, station wagon	Other motor vehicle
2012-May-23, Wed,18:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
				_				
2012-Sep-11, Tue,17:06	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Truck and trailer	Other motor vehicle

Location: MERIVALE RD @ 112 N OF CARLING AVE/WESTGATE SC

Traffic Control: Tra	iffic signal				Total Collisions: 2				
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuve	r Vehicle type	First Event	No. Ped
2015-Sep-04, Fri,15:11	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	g Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2012-Aug-10, Fri,17:58	Clear	Turning movement	Non-fatal injury	Dry	West	Making "U" turn	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MERIVALE RD btwn ISLAND PARK DR & WESTGATE SC

Traffic Control: No control

Total Collisions: 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver Veh	nicle type	First Event	No. Ped
2016-Nov-20, Sun,21:25	Snow	Rear end	P.D. only	Loose sand or gravel	South	Slowing or stopping Pick	k-up truck	Other motor vehicle	
					South	Slowing or stopping Pick	k-up truck	Other motor vehicle	
2013-Jan-22, Tue, 19:00	Clear	SMV other	P.D. only	lce	South	Going ahead Auto stati	omobile, tion wagon	Skidding/sliding	

Appendix D SYNCHRO 2020 Background Traffic Analysis

Background 2020 AM 2: Merivale & Westgate SC

	۶	1	Ť	ţ	4		
Lane Group	EBL	NBL	NBT	SBT	SBR		
Lane Configurations	¥.	5	•	+	1		
Traffic Volume (vph)	27	47	160	479	67		
Future Volume (vph)	27	47	160	479	67		
Lane Group Flow (vph)	53	49	168	504	71		
Turn Type	Prot	Perm	NA	NA	Perm		
Protected Phases	4		2	6			
Permitted Phases		2			6		
Detector Phase	4	2	2	6	6		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		
Minimum Split (s)	23.5	23.8	23.8	35.8	35.8		
Total Split (s)	24.0	36.0	36.0	36.0	36.0		
Total Split (%)	40.0%	60.0%	60.0%	60.0%	60.0%		
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		
All-Red Time (s)	2.2	2.5	2.5	2.5	2.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.5	5.8	5.8	5.8	5.8		
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		
Act Effct Green (s)	10.0	47.2	47.2	47.2	47.2		
Actuated g/C Ratio	0.17	0.79	0.79	0.79	0.79		
v/c Ratio	0.18	0.07	0.12	0.36	0.06		
Control Delay	15.7	1.5	1.2	4.9	1.4		
Oueue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.7	1.5	1.2	4.9	1.4		
	B	Α	Α	Α	A		
Approach Delay	15.7	7.	1.3	4.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
Approach LOS	B		A	A			
Oueue Length 50th (m)	27	10	33	22.7	0.0		
Oueue Length 95th (m)	10.5	2.2	5.8	38.4	3.1		
Internal Link Dist (m)	40.8	2.2	88.4	58.0	0.1		
Turn Bay Length (m)	40.0	40.0	00.4	50.0	40.0		
Base Canacity (vnh)	518	657	1404	1404	1209		
Starvation Can Reductn	0	007	0	0	0		
Snillback Can Reductn	0	0	0	0	0		
Storage Can Reducto	0	0	0	0	0		
Reduced v/c Ratio	0 10	0.07	0 12	0.36	0 06		
	0.10	0.07	0.12	0.50	0.00		
Intersection Summary							
Cycle Length: 60							
Actuated Cycle Length: 60							
Offset: 8 (13%), Referenced to phase	2:NBTL an	d 6:SBT, St	art of Greer	ı			
Natural Cycle: 60		,					
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.36							
Intersection Signal Delay: 4.4				In	tersection L	DS: A	
Intersection Capacity Utilization 57.59	6			IC	U Level of S	Service B	
Analysis Period (min) 15	-			10			
Splits and Phases: 2: Merivale & W	estaate SC						
	- 5.9010 00						
Ø2 (R)						Ø4	
36 s						24 s	
1							
🕨 🕈 🖉 6 (R)							

36 s

Background 2020 AM 3: Merivale & Carling

	-	4	+	•	Ť	1	×	ţ	~	
Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u> ተተጉ</u>	5	<u> </u>	ň	•	1	ň	•	1	
Traffic Volume (vph)	801	149	623	224	197	237	26	223	208	
Future Volume (vph)	801	149	623	224	197	237	26	223	208	
Lane Group Flow (vph)	918	157	690	236	207	249	27	235	219	
Turn Type	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2	1	6	3	8		7	4		
Permitted Phases		6				8			4	
Detector Phase	2	1	6	3	8	8	7	4	4	
Switch Phase										
Minimum Initial (s)	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	29.0	10.4	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Total Split (s)	49.0	12.0	61.0	21.0	38.0	38.0	21.0	38.0	38.0	
Total Split (%)	40.8%	10.0%	50.8%	17.5%	31.7%	31.7%	17.5%	31.7%	31.7%	
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	1.7	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
Lost Time Adjust (s)	-2.0	-1.4	-2.0	-2.3	-2.7	-2.7	-2.3	-2.7	-2.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	0.14	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	None	C-Max	None	None	None	None	None	None	
Act Elici Green (S)	51.7	00.5	00.5	17.0	30.0	30.0	9.8	24.5	24.5	
Actualed g/C Rallo	0.43	0.55	0.55	0.14	0.30	0.30	0.08	0.20	0.20	
V/C Rallo	0.44	0.49 20 F	0.20	105.0	0.38	0.40	0.20	0.00	0.53	
	22.1	20.5	14.8	0.0	30.0	0.0	55.Z	47.2	10.0	
Lueue Delay	0.3	20.5	0.0	105.0	25.6	U.U 5 0	0.0	0.3	16.0	
	22.4	20.5	14.0 D	103.0 E	55.0 D	J.0 A	55.Z	47.3 D	10.0 D	
Approach Delay	22 /	C	15.0	1	18.8	A	L	22.0	D	
Approach LOS	22.4		13.7 R		-0.0 D			55.7 C		
Oueue Length 50th (m)	55.2	17 1	28.7	56 1	10.9	0.0	6.4	/3.0	1/1 7	
Oueue Length 95th (m)	73.5	34.0	43.6	#106.3	58.1	17.7	16.1	61.5	26.6	
Internal Link Dist (m)	89.4	01.0	139.3	# 100.0	131.8		10.1	88.4	20.0	
Turn Bay Length (m)	07.1	90.0	107.0	40.0	101.0		40.0	00.1	70.0	
Base Capacity (vph)	2064	321	2673	240	553	624	240	505	513	
Starvation Cap Reductn	490	0	0	0	0	0	0	41	42	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.49	0.26	0.98	0.37	0.40	0.11	0.51	0.46	
Internetion Commons										
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120	D.FDT on		Ctart of Cro	~ n						
Notural Cycles 00	E ZEBT AII	U O:WBIL,	Start of Gre	en						
Natural Cycle: 90										
Maximum v/c Datio: 0.09										
Intersection Signal Delay: 29.6				Int	forsoction I (NS. C				
Intersection Canacity Litilization 75.0%					LL AVAL OF S	onvico D				
Analysis Deriod (min) 15)			10						
# 95th percentile volume exceeds ca	nacity que	aue may he	longer							
Queue shown is maximum after two	o cycles.	uc may be	ionger.							
Splits and Phases: 3: Merivale & Ca	arling									
✓ Ø1 • Ø2 (R)					1	ð3		🕴 ø4		
12 s 49 s					21 s			38 s		
🗸 Ø6 (R) 🍵					Þ)7		₽ø8		

Background 2020 AM 4: Carling & Westgate SC E

	•	۶	+	4	+	•	1	×	ţ	~	
Lane Group	EBU	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations		3	<u>ቀ</u> ቶሴ	5	<u> </u>		4		ជ	1	
Traffic Volume (vph)	99	100	1210	7	819	12	2	24	1	16	
Future Volume (vph)	99	100	1210	7	819	12	2	24	1	16	
Lane Group Flow (vph)	0	209	1289	7	922	0	29	0	26	17	
Turn Type	Perm	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	1 0.111	1 01111	2	1 0.111	6	1 01111	8	1 01111	4	1 01111	
Permitted Phases	2	2	_	6	-	8	-	4		4	
Detector Phase	2	2	2	6	6	8	8	4	4	4	
Switch Phase	-	-	-	Ū	Ū	0	0	•		·	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	23.6	23.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0	
Total Split (s)	83.0	83.0	83.0	83.0	83.0	37.0	37.0	37.0	37.0	37.0	
Total Split (%)	69.2%	69.2%	69.2%	69.2%	69.2%	30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	37	37	37	37	37	30.070	30.070	3.0	3.0	30.070	
All-Red Time (s)	10	10	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	1.7	-1.6	-1.6	-1.6	-1.6	4.0	-3.0	ч.u	-3.0	-3.0	
Total Lost Time (s)		-1.0	-1.0	-1.0	-1.0		-3.0		-3.0	-5.0	
		ч.0	4.0	4.0	4.0		ч.0		ч.0	ч.0	
Lead Lag Ontimize?											
Recall Mode	C Max	C Max	C Max	C Max	C Max	None	None	None	None	None	
Act Effet Green (s)	G-IVIAA	103 /	103 /	103 /	103 /	NULLE	17.0	NULLE	17.0	17.0	
Actuated a/C Patio		0.96	0.96	0.96	0.96		0.14		0.14	0.14	
Actualeu y/C Ratio		0.00	0.00	0.00	0.00		0.14		0.14	0.14	
		0.47	2.31	5.4	2.4		26.0		12.6	10 /	
		9.0	0.1	0.0	0.1		20.0		43.0	10.4	
Total Dolay		0.0	0.1	5.4	2.5		26.0		12.6	10.0	
		9.0	3.Z A	0.4	5.0 A		20.0		43.0	10.4 D	
LUS Approach Dolou		A	A / 1	A	2 E		24.0		20 5	D	
Approach LOS			4.1		5.0 A		20.0		30.0		
Approach LOS		0.4	A 20.2	0.2	17 0		2.2		E 7	0.0	
Queue Length 50(n (m)		9.4	20.3	0.3 m1.7	17.Z		3.Z		5.7	0.0	
Under Length 95th (III)		55.0	55.9 112.0	III I . <i>I</i>	00.4		10.0		11.7	4.4	
Turn Boy Longth (m)		00.0	112.0	24.0	89.4		10.8		48.4		
Turri Bay Lerigin (III)		80.0	4107	30.0	1107		400		250	101	
Base Capacity (vpn)		447	4187	300	4137		400		350	424	
Starvation Cap Reductn		0	1140	0	1572		0		0	0	
Spillback Cap Reducin		0	0	0	0		0		0	0	
Storage Cap Reductin		0	0	0	0		0		0	0	
		0.47	0.42	0.02	0.30		0.07		0.07	0.04	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 26 (22%), Referenced to phase	e 2:EBTL a	nd 6:WBTL	, Start of Gr	een							
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.47											
Intersection Signal Delay: 4.6				In	tersection L	OS: A					
Intersection Capacity Utilization 71.8%	ó			IC	U Level of S	Service C					
Analysis Period (min) 15											
m Volume for 95th percentile queue	is metered	by upstrea	m signal.								
Splits and Phases: 4: Carling & We	stgate SC I	E									
	J										

<u>∮</u> ø2 (R)	∲rø4
83 s	37 s
₩ Ø6 (R)	≪ ¶ø8
83 s	37 s

Background 2020 AM 5: Carling & Westgate SC W

	-	-	\	
Lane Group	EBT	WBT	SBL	
Lane Configurations	***	##%	M	
Traffic Volume (vph)	1019	1085	13	
Future Volume (vph)	1019	1085	13	
Lane Group Flow (vph)	1073	1156	34	
Turn Type	NA	NA	Prot	
Protected Phases	2	6	4	
Permitted Phases				
Detector Phase	2	6	4	
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	
Minimum Split (s)	24.0	48.3	37.1	
Total Split (s)	83.0	83.0	37.0	
Total Split (%)	69.2%	69.2%	30.8%	
Yellow Time (s)	3.7	3.7	3.0	
All-Red Time (s)	1.6	1.6	3.1	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	5.3	5.3	6.1	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	None	
Act Effct Green (s)	107.2	107.2	10.0	
Actuated g/C Ratio	0.89	0.89	0.08	
v/c Ratio	0.25	0.27	0.22	
Control Delay	1.8	0.7	32.6	
Queue Delay	0.0	0.1	0.0	
Total Delay	1.8	0.8	32.6	
LOS	А	А	С	
Approach Delay	1.8	0.8	32.6	
Approach LOS	А	А	С	
Queue Length 50th (m)	16.4	3.1	3.1	
Queue Length 95th (m)	19.6	4.2	13.2	
Internal Link Dist (m)	32.6	112.0	92.7	
Turn Bay Length (m)				
Base Capacity (vph)	4350	4341	429	
Starvation Cap Reductn	0	1256	0	
Spillback Cap Reductn	0	0	0	
Storage Cap Reductn	0	0	0	
Reduced v/c Ratio	0.25	0.37	0.08	
Intersection Summary				
Cycle Length: 120				
Cycle Length: 120				
Actualed Cycle Length: 120			hart of Croop	
Uliset: 38 (32%), Referenced to phase	\$ Z:EBT au	0 0:WBT, S	lan of Green	
Natural Cycle: 90				
Control Type: Actuated-Coordinated				
Maximum V/c Ratio: 0.27				
Intersection Signal Delay: 1./				Intersection LOS: A
Intersection Capacity Utilization 40.3%)			ICU Level of Service A
Analysis Period (min) 15				
Splits and Phases: 5: Carling & We	stgate SC	W		
● ● Ø2 (R)				
83 s				
←				
Ø6 (R)				

Background 2020 AM 6: Kirkwood & Carling WB

	4	+	•	Ť	Ŧ	1	
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR	
Lane Configurations	55	4 4 %	3	*	**	1	
Traffic Volume (vph)	203	1561	280	319	401	360	
Future Volume (vph)	203	1561	280	319	401	360	
Lane Group Flow (vph)	214	1907	295	336	422	379	
Turn Type	Perm	NA	pm+pt	NA	NA	Perm	
Protected Phases	1 01111	6	3	8	4	1 01111	
Permitted Phases	6	Ū	8		•	4	
Detector Phase	6	6	3	8	4	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	35.3	35.3	11.0	29.0	29.0	29.0	
Total Split (s)	58.0	58.0	24.0	62.0	38.0	38.0	
Total Split (%)	48.3%	48.3%	20.0%	51.7%	31.7%	31.7%	
Yellow Time (s)	3.7	3.7	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.6	2.6	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes		Yes	Yes	
Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped	
Act Effct Green (s)	57.4	57.4	54.6	54.6	31.5	31.5	
Actuated g/C Ratio	0.48	0.48	0.46	0.46	0.26	0.26	
v/c Ratio	0.14	0.84	0.67	0.41	0.47	0.85	
Control Delay	18.7	31.9	21.3	15.5	38.8	51.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.7	31.9	21.3	15.5	38.8	51.0	
LOS	В	С	С	В	D	D	
Approach Delay		30.5		18.2	44.6		
Approach LOS		С		В	D		
Queue Length 50th (m)	14.9	146.0	49.5	57.1	42.8	65.7	
Queue Length 95th (m)	22.4	168.3	m70.8	m79.8	57.8	#113.6	
Internal Link Dist (m)		110.3		152.2	73.8		
Turn Bay Length (m)	40.0					22.0	
Base Capacity (vph)	1564	2270	449	862	960	472	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.84	0.66	0.39	0.44	0.80	
Intersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120	()						
Offset: 66 (55%), Referenced to pha	se 6:WBTL,	Start of Gre	en				
Natural Cycle: 80							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.85						00.0	
Intersection Signal Delay: 31.5	0/			Int	ersection L	US: C	
Intersection Capacity Utilization 97.8	1%			IC	U Level of S	service F	
Analysis Period (min) 15							
# 95th percentile volume exceeds	capacity, que	eue may be	longer.				
Queue shown is maximum after the	wo cycles.						
m Volume for 95th percentile queu	e is metered	by upstream	n signal.				
Splits and Phases: 6: Kirkwood &	Carling WB						
	<u> </u>				•		1
					1 Ø3		♥ Ø4
					24 S		38 s
Ø6 (R)					1 08		

Background 2020 AM 7: Kirkwood & Carling EB

	≯	+	*	Ť	*	ŕ	ţ
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations	×	441	1	**	1	1	*
Traffic Volume (vph)	187	2036	422	384	398	473	222
Future Volume (vph)	187	2036	422	384	398	473	222
Lane Group Flow (vph)	177	2163	444	404	419	498	234
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		2		8		7	4
Permitted Phases	2		2		8	4	
Detector Phase	2	2	2	8	8	7	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1
Total Split (s)	58.0	58.0	58.0	38.0	38.0	24.0	62.0
Total Split (%)	48.3%	48.3%	48.3%	31.7%	31.7%	20.0%	51.7%
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	2.8	2.8	1.8	2.8
Lost Time Adjust (s)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	Min	Min	Min	Min
Act Effct Green (s)	54.0	54.0	54.0	34.0	34.0	58.0	58.0
Actuated g/C Ratio	0.45	0.45	0.45	0.28	0.28	0.48	0.48
v/c Ratio	0.27	1.04	0.54	0.42	0.98	1.03	0.27
Control Delay	22.1	65.3	9.1	36.6	81.2	81.1	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.1	65.3	9.1	36.6	81.2	81.1	21.6
LOS	С	E	А	D	F	F	С
Approach Delay		53.6		59.3			62.1
Approach LOS		D		E			E
Queue Length 50th (m)	29.6	~214.1	17.5	40.7	97.8	~116.1	38.8
Queue Length 95th (m)	48.2	#244.6	46.7	55.4	#160.8	#190.5	71.4
Internal Link Dist (m)		161.6		158.6			152.2
Turn Bay Length (m)	40.0				90.0		
Base Capacity (vph)	655	2071	820	960	429	482	862
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	1.04	0.54	0.42	0.98	1.03	0.27
Interception Summers							
Intersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 15 (13%), Referenced to phase	se 2:EBTL, S	Start of Gree	en				
Natural Cycle: 110							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.04							
Intersection Signal Delay: 56.1				In	tersection L	US: E	
Intersection Capacity Utilization 97.8	1%			IC	U Level of S	Service F	
Analysis Period (min) 15							
 Volume exceeds capacity, queue 	e is theoretic	ally infinite.					
Queue shown is maximum after the	wo cycles.						
# 95th percentile volume exceeds of	capacity, que	eue may be	longer.				
Queue shown is maximum after the	wo cycles.						
Splits and Phases: 7: Kirkwood &	Carling EB						
An an (n)	<u> </u>				· · · ·		
Ø2 (R)					♥ ‴Ø4		
58 s					62 s		

Lane Group	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Group Flow (vph)	
Sign Control	
Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 0.0%	ICU Level of Service A
Analysis Period (min) 15	

Parsons

Background 2020 PM 2: Merivale & Westgate SC

	≯	1	†	ţ	4	
Lane Group	EBL	NBL	NBT	SBT	SBR	
Lane Configurations	V	*		*	1	
Traffic Volume (vph)	78	79	192	470	94	
Future Volume (vph)	78	79	192	470	94	
Lane Group Flow (vph)	177	83	202	495	99	
Turn Type	Prot	Perm	NA	NA	Perm	
Protected Phases	4	1 GIIII	2	6	1 0111	
Permitted Phases	-1	2	2	0	6	
Detector Phase	4	2	2	6	6	
Switch Phase	т	2	2	0	U	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Snlit (s)	24.0	24.0	24.0	25.8	35.8	
Total Split (s)	24.0	24.0	24.0	36.0	36.0	
Total Split (%)	40.0%	60.0%	60.0%	60.0%	60.0%	
Vellow Time (s)	40.070	2 2	2 2	2 2	2 2	
All Dod Time (s)	ວ.ວ ງ ງ	3.3 2 F	3.3 2 F	3.3 2 F	3.3	
All-riceu Tillie (5)	2.2	2.0	2.0	2.0	2.0	
LUST TIME AUJUST (S)	0.0	0.0	0.0	0.0	0.0	
	0.0	0.Ŭ	0.ŏ	J.Ŏ	ບ.ບັ	
Leau/Lay						
	Nees	C Mari	C Mari	C Mari	C Merr	
Recall Mode	None	C-Max	C-IVIAX	C-IVIAX	C-IVIAX	
Act Elici Green (S)	10.8	42.1	42.1	42.1	42.1	
Actuated g/C Ratio	0.18	0.70	0.70	0.70	0.70	
V/C Ratio	0.48	0.14	0.16	0.40	0.09	
Control Delay	15.6	1.8	1.5	6.7	1.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.6	1.8	1.5	6.7	1.6	
LOS	В	A	A	A	A	
Approach Delay	15.6		1.6	5.8		
Approach LOS	В		А	A		
Queue Length 50th (m)	8.0	1.6	3.9	22.1	0.0	
Queue Length 95th (m)	21.5	m2.9	5.7	46.0	4.5	
Internal Link Dist (m)	28.7		87.9	55.1		
Turn Bay Length (m)		40.0			40.0	
Base Capacity (vph)	564	576	1252	1252	1094	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	8	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.31	0.14	0.16	0.40	0.09	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60						
Offset: 27 (45%), Referenced to pha	ase 2:NBTL a	nd 6:SBT. S	Start of Gree	en		
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.48	-					
Intersection Signal Delay: 6.3				Int	ersection LOS	S: A
Intersection Capacity Litilization 59	1%				U Level of Ser	vice B
Analysis Period (min) 15				10	2 20101 01 001	
m Volume for 95th nercentile que	le is metered	hy unstream	m signal			
m volume for your percentile quet		ay upsuida	n signai.			
Splits and Phases: 2: Merivale &	Westgate SC					

Ø2 (R)		▶ Ø4	
36 s		24 s	
Ø6 (R)			
36 s			

Background 2020 PM 3: Merivale & Carling

	-	4	+	•	†	1	*	Ļ	~	
Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u>ቀ</u> ቶሴ	<u>8</u>	<u>ቀ</u> ቶሴ	<u>8</u>	*	1	5	•	1	
Traffic Volume (vph)	860	349	1434	176	204	185	51	276	188	
Future Volume (vph)	860	349	1434	176	204	185	51	276	188	
Lane Group Flow (vph)	1025	367	1551	185	215	195	54	291	198	
Turn Type	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2	1	6	3	8		7	4		
Permitted Phases		6				8			4	
Detector Phase	2	1	6	3	8	8	7	4	4	
Switch Phase										
Vinimum Initial (s)	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Vinimum Split (s)	29.0	10.4	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Fotal Split (s)	42.0	20.0	62.0	20.0	38.0	38.0	20.0	38.0	38.0	
Fotal Split (%)	35.0%	16.7%	51.7%	16.7%	31.7%	31.7%	16.7%	31.7%	31.7%	
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	1.7	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
_ost Time Adjust (s)	-2.0	-1.4	-2.0	-2.3	-2.7	-2.7	-2.3	-2.7	-2.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
ead/Lag	l an	l ead	J.F	l ead	De l	l an	Lead	l an	l an	
ead-Lag Ontimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	
	C-Max	None	C-Max	None	None	None	None	None	None	
Act Effet Green (s)	38.0	64.7	64.7	15.8	3/1.2	3/1.2	11.5	27.5	27.5	
Actuated a/C Datio	0.20	04.7	04.7	0.12	0.20	0.20	0.10	0.22	0.22	
Va Datio	0.52	0.04	0.54	0.13	0.20	0.20	0.10	0.23	0.23	
Control Dolov	0.00	42.2	20.39	0.03	20.42	0.55	0.55	0.71	12.0	
	3Z.0	02.2	20.7	/9.0	30.Z	0.5	0.0	47.1	13.0	
Queue Delay	2.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9	12.0	
	34.8	02.2	20.8	/9.8	38.Z	0.3	55.4 E	48.0	13.8	
LUS Approach Dolou	24.0	E	20.7	E	U 40.7	A	E	24 D	В	
Approach LOS	34.8		28.7		40.7			30.3		
Approach LUS	7(0	171		42.0	U 11.0	0.0	10 F	D F2 O	11.0	
Queue Length 50th (m)	/6.8	67.1	88.4	43.0	41.9	0.0	12.5	52.0	11.3	
Queue Length 95th (m)	88.8	#147.0	114.0	#80.4	03.1	10.8	25.0	08.2	24.9	
nternal Link Dist (m)	81.2	00.0	139.3	40.0	110.3		40.0	87.9	70.0	
Turn Bay Length (m)	4545	90.0	0/11	40.0	F00	F/F	40.0	ГОГ	/0.0	
Base Capacity (vph)	1515	395	2611	226	523	565	226	505	510	
Starvation Cap Reductn	325	0	0	0	0	0	0	62	0	
Spillback Cap Reductn	0	0	193	0	0	0	0	0	5	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.86	0.93	0.64	0.82	0.41	0.35	0.24	0.66	0.39	
ntersection Summary										
Cycle Lenath: 120										
Actuated Cycle Length: 120										
Offset: 15 (13%), Referenced to phas	se 2:EBT an	d 6:WBTL,	Start of Gre	en						
Natural Cycle: 100		,								
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.93										
ntersection Signal Delay: 33.0				In	tersection I (<u>)S</u> ∙ C				
ntersection Capacity Utilization 84 79	%			IC	U Level of S	Service F				
Analysis Period (min) 15	70			10						
 95th percentile volume exceeds c 	anacity du	eue may he	longer							
Oueue shown is maximum after th	apacity, qu	eue may be	ionger.							
	vu cycles.									
Splits and Phases: 3: Merivale & C	arling									
✓ Ø1	2 (R)				_ \	Ø3		🖞 Ø4		
20 s	- \. \				20 9			38 5		
4					1					
(R)					- I ¥	07		1008		

52 e

Background 2020 PM 4: Carling & Westgate SC E

	1	٦	+	4	+	1	1	*	ţ	~	
Lane Group	EBU	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations		ă.	<u> ተተጉ</u>	۲	<u> ተ</u> ትኈ		4		र्स	1	
Traffic Volume (vph)	70	155	700	7	1764	10	5	110	1	70	
Future Volume (vph)	70	155	700	7	1764	10	5	110	1	70	
Lane Group Flow (vph)	0	237	750	7	1977	0	29	0	117	74	
Turn Type	pm+pt	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	5	5	2		6		8		4		
Permitted Phases	2	2		6		8		4		4	
Detector Phase	5	5	2	6	6	8	8	4	4	4	
Switch Phase											
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.6	10.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0	
Total Split (s)	24.0	24.0	83.0	59.0	59.0	37.0	37.0	37.0	37.0	37.0	
Total Split (%)	20.0%	20.0%	69.2%	49.2%	49.2%	30.8%	30.8%	30.8%	30.8%	30.8%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0	
Lost Time Adjust (s)		-1.6	-1.6	-1.6	-1.6		-3.0		-3.0	-3.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Lead/Lag	Lead	Lead		Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes						
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		91.0	91.0	70.4	70.4		21.0		21.0	21.0	
Actuated g/C Ratio		0.76	0.76	0.59	0.59		0.18		0.18	0.18	
v/c Ratio		0.81	0.20	0.02	0.70		0.11		0.54	0.23	
Control Delay		60.1	2.4	8.1	11.5		25.1		53.0	9.6	
Queue Delay		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
l otal Delay		60.1	2.4	8.1	11.5		25.1		53.0	9.6	
LOS		Ł	A	A	В		С		D	A	
Approach Delay			16.3		11.5		25.1		36.2		
Approach LOS			B		В		С		D		
Queue Length 50th (m)		34.7	1.2	0.3	35.5		3.2		25.8	0.0	
Queue Length 95th (m)		#/5.I	9.6	m0.8	180.6		10.2		39.2	11.1	
Internal Link Dist (m)		70.0	113.0	24.0	81.2		26.4		38.7		
Turri Bay Lengin (m)		70.0	2475	30.0	2010		407		227	4 E 4	
Stervetion Can Deductr		342	30/5	300	2019		407		337	404	
Stal Valion Cap Reductin		0	220	0	0		0		0	0	
Storage Cap Reductin		0	239	0	0		0		0	0	
Peduced v/c Patio		0 60	0 22	0 02	0 70		0 07		0 35	0 16	
		0.07	0.22	0.02	0.70		0.07		0.55	0.10	
Intersection Summary											
Cycle Length: 120											
Actuated Cycle Length: 120											
Offset: 3 (3%), Referenced to phase 2:	EBIL and	6:WBIL, S	tart of Gree	n							
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.81											
Intersection Signal Delay: 14.6	V			Ini	tersection L	JS: B					
Intersection Capacity Utilization 100.09	6			IC	U Level of S	Service G					
Analysis Period (min) 15			امممد								
# your percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximulti aller two cycles.											
m Volume for 95th percentile queue I	is metered	by upstream	n signai.								
Splits and Phases: 4: Carling & Wes	itgate SC I							1.4]
[→] Ø2 (R)							_	♦ Ø4			
83 s								37 s			
↔ ↓								1			

Background 2020 PM 5: Carling/Carling EB & Westgate SC W

	-	+	*
Lane Group	EBT	WBT	SBL
Lane Configurations	***	<u>ቀ</u> ቶሴ	¥
Traffic Volume (vph)	832	1711	25
Future Volume (vph)	832	1711	25
Lane Group Flow (vph)	876	1808	68
Turn Type	NA	NA	Prot
Protected Phases	2	6	4
Permitted Phases			
Detector Phase	2	6	4
Switch Phase			
Minimum Initial (s)	10.0	10.0	10.0
Minimum Split (s)	24.1	42.3	37.1
Total Split (s)	83.0	83.0	37.0
Total Split (%)	69.2%	69.2%	30.8%
Yellow Time (s)	3.7	37	3.0
All-Red Time (s)	1.6	1.6	3.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0 Б.2	5.0	6.1
Lead/Lag	0.0	5.5	0.1
Lead-Lag Ontimize?			
Recall Mode	C.May	C_Max	None
Act Effet Groop (c)	0-IVIdX 100.0	102.2	10.7
Actuated a/C Datio	02.2	0.05	0.0
Actualed y/C Rallo	0.00	0.00	0.09
V/C RdIIU	0.21	0.44	0.41
Control Delay	1.4	1.0	42.3
Queue Delay	0.0	0.1	0.0
Total Delay	1.4	1.0	42.3
LUS	A	A	D
Approach Delay	1.4	1.0	42.3
Approach LUS	A	A	D
Queue Length 50th (m)	6.6	4.7	9.7
Queue Length 95th (m)	m10.7	13.2	23.5
Internal Link Dist (m)	42.6	113.0	40.2
Turn Bay Length (m)			
Base Capacity (vph)	4148	4144	431
Starvation Cap Reductn	0	557	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.21	0.50	0.16
Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 107 (89%) Referenced to n	hase 2. FBT a	nd 6·WRT	Start of Green
Natural Cycle: 80			
Control Type: Actuated Coordinate	h		
Maximum v/c Ratio 0.44	i a		
Intersection Signal Delaye 2.2			
Intersection Canacity Utilization E2	0%		
Analysis Dariad (min) 15	. 7 /0		
Milarysis Periou (IIIII) 15	uo ic motorod	hy upstress	n cianal
m volume for your percentile que	eue is metered	ny uhanga	n siyridi.
Splits and Phases: 5: Carling/Ca	arling EB & We	stgate SC \	V

→Ø2 (R)	₩ø4
83 s	37 s
■ Ø6 (R)	
83 s	
Background 2020 PM 6: Kirkwood & Carling WB

	∢	-	1	t	Ļ	-
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	<u> ተ</u> ተጌ	ň	*	44	1
Traffic Volume (vph)	216	2504	227	567	520	410
Future Volume (vph)	216	2504	227	567	520	410
Lane Group Flow (vph)	227	2968	239	597	547	432
Turn Type	Perm	NA	pm+pt	NA	NA	Perm
Protected Phases		6	3	8	4	
Permitted Phases	6		8			4
Detector Phase	6	6	3	8	4	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	35.3	35.3	11.0	29.0	29.0	29.0
Total Split (s)	67.0	67.0	20.0	53.0	33.0	33.0
Total Split (%)	55.8%	55.8%	16.7%	44.2%	27.5%	27.5%
Yellow Time (s)	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.6	2.6	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped
Act Effct Green (s)	63.0	63.0	49.0	49.0	29.5	29.5
Actuated g/C Ratio	0.52	0.52	0.41	0.41	0.25	0.25
v/c Ratio	0.13	1.19	0.74	0.82	0.66	1.05
Control Delay	8.9	112.8	35.6	41.2	45.3	94.2
Queue Delay	0.0	0.0	0.0	8.2	0.0	0.0
Total Delay	8.9	112.8	35.6	49.4	45.3	94.2
LOS	A	F	D	D	D	F
Approach Delay		105.4	-	45.5	66.9	
Approach LOS		F		D	E	
Oueue Length 50th (m)	93	~313.0	47.2	142.5	61.6	~96.0
Queue Length 95th (m)	11.2	#340 1	#69.5	#188.5	80.6	#158.3
Internal Link Dist (m)	11.2	113.3		144 7	73.8	
Turn Bay Length (m)	40.0	113.3		1.17.7	73.0	22.0
Base Capacity (vph)	1715	2497	330	728	832	411
Starvation Can Reductn	0	0	0	102	0.52	0
Snillback Can Reductn	0	0	0	102	0	0
Storage Can Reducto	0	0	0	0	0	0
Reduced v/c Ratio	0 12	1 10	0 72	0.95	0 66	1.05
	0.15	1.17	0.72	0.90	0.00	1.05
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 39 (33%), Referenced to phas	e 6:WBTL,	Start of Gre	en			
Natural Cycle: 110						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 1.19						
Intersection Signal Delay: 87.9				In	tersection L	OS: F
Intersection Capacity Utilization 112.1	%			IC	U Level of S	Service H
Analysis Period (min) 15	.,			10	0 20101 01 0	501110011
 Volume exceeds capacity, queue 	is theoretic	ally infinite.				
Queue shown is maximum after tw	o cycles					
# 95th percentile volume exceeds c	anacity que	eue may he	longer			
Queue shown is maximum after tw	in cycles	oue may be	longer.			
Splits and Phases: 6: Kirkwood & C	Carling WR					
						4
						Ø 3
						20 s
4						
🖉 🖉 Ø6 (R)						- Ø8

Background 2020 PM 7: Kirkwood & Carling EB

	۶	-	\mathbf{r}	t	1	1	Ļ
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations	5	440	1	**	1	5	*
Traffic Volume (vph)	419	1347	405	341	306	423	312
Future Volume (vph)	419	1347	405	341	306	423	312
Lane Group Flow (vph)	392	1467	426	359	322	445	328
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		2		8		7	4
Permitted Phases	2		2		8	4	
Detector Phase	2	2	2	8	8	7	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1
Total Split (s)	61.0	61.0	61.0	29.0	29.0	30.0	59.0
Total Split (%)	50.8%	50.8%	50.8%	24.2%	24.2%	25.0%	49.2%
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	2.8	2.8	1.8	2.8
Lost Time Adjust (s)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	Min	Min	Min	Min
Act Effct Green (s)	57.0	57.0	57.0	25.0	25.0	55.0	55.0
Actuated g/C Ratio	0.48	0.48	0.48	0.21	0.21	0.46	0.46
v/c Ratio	0.57	0.67	0.50	0.51	1.02	0.88	0.40
Control Delay	26.7	26.2	6.8	45.0	102.8	30.7	9.2
Oueue Delay	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	27.1	26.4	6.8	45.0	102.8	30.7	9.2
LOS	С	С	A	D	F	С	A
Approach Delay	Ŭ	22.9	/ .	72.3		Ŭ	21.6
Approach LOS		C		E			C
Queue Length 50th (m)	75.1	100.5	11.7	39.7	~80.4	83.3	6.4
Queue Length 95th (m)	110.9	117.9	35.4	54.8	#136.2	#124.0	46.0
Internal Link Dist (m)		161.6		158.6			144.7
Turn Bay Length (m)	40.0				90.0		
Base Capacity (vph)	691	2182	855	706	316	506	817
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	71	149	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.72	0.50	0.51	1 02	0.88	0.40
Intersection Summary	0.00	2.7.2	2.00	5.0 .		5.00	55
Cyclo Longth: 120							
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 81 (68%), Referenced to pha	ase 2:EBTL, S	start of Gree	en				
Natural Cycle: 70							
Control Type: Actuated-Coordinated	ł						
Maximum v/c Ratio: 1.02							
Intersection Signal Delay: 31.6				In	tersection L	OS: C	
Intersection Capacity Utilization 112	2.1%			IC	U Level of S	Service H	
Analysis Period (min) 15							
 Volume exceeds capacity, queue is theoretically infinite. 							
Queue shown is maximum after two cycles.							
# 95th percentile volume exceeds	capacity, que	eue may be	longer.				
Queue shown is maximum after	two cycles.						
Splits and Phases: 7. Kirkwood &	Carling FR						
						~ .	
Ø2 (R)					* *3	Ø4	
61 s					59 s		

	-+	*
Lane Group	FRT	WBR
Lane Configurations	***	111
Traffic Volume (vph)	1075	1868
Future Volume (vph)	1075	1868
Lane Group Flow (vph)	1132	1966
Sign Control	Free	
Intersection Summary		
Control Type: Unsignalized		
Intersection Capacity Utilization	49.3%	
Analysis Period (min) 15		

Appendix E SYNCHRO 2025 Background Traffic Analysis

Background 2025 AM 2: Merivale & Westgate SC

	۶	*	†	Ŧ	4		
Lane Group	EBL	NBL	NBT	SBT	SBR		
Lane Configurations	Y	ň	•	•	1		
Traffic Volume (vph)	27	47	167	501	67		
Future Volume (vph)	27	47	167	501	67		
Lane Group Flow (vph)	53	49	176	527	71		
Turn Type	Prot	Perm	NA	NA	Perm		
Protected Phases	4		2	6			
Permitted Phases		2			6		
Detector Phase	4	2	2	6	6		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		
Minimum Split (s)	23.5	23.8	23.8	35.8	35.8		
Total Split (s)	24.0	36.0	36.0	36.0	36.0		
Total Split (%)	40.0%	60.0%	60.0%	60.0%	60.0%		
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		
All-Red Time (s)	2.2	2.5	2.5	2.5	2.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.5	5.8	5.8	5.8	5.8		
Lead/Lag	0.0	0.0	0.0	0.0	0.0		
Lead-Lag Optimize?							
Recall Mode	None	C-Max	C-Max	C-Max	C-Max		
Act Effct Green (s)	10.0	47.2	47.2	47.2	47.2		
Actuated g/C Ratio	0.17	0.79	0.79	0.79	0.79		
v/c Ratio	0.17	0.08	0.13	0.38	0.06		
Control Delay	15.7	1.2	10	5.1	1 4		
Oueue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.7	1.0	1.0	5.1	1.0		
	D. I	۸.	Λ	Δ.1	Λ		
Approach Delay	15.7	А	10	A	А		
Approach LOS	10.7 D		1.0	4.0 A			
Approach Longth E0th (m)	27	0.2	A 0.0	24.2	0.0		
Queue Length OEth (m)	2.7 10 F	0.2	U.0	24.Z	0.0		
Laternal Link Diet (m)	10.0	1.9	0.0	40.7	J. I		
Turn Roy Longth (m)	40.8	10.0	88.4	38.0	40.0		
Turri Bay Lengin (m)	E10	40.0	1404	1404	40.0		
Dase Capacity (vpfi)	518	030	1404	1404	1209		
Starvation Cap Reductin	U	U	0	0	U		
Spiliback Cap Reductin	0	0	0	0	0		
Storage Cap Reducth	0	0	0 10	0	0		
Reduced V/C Ratio	0.10	0.08	0.13	0.38	0.06		
Intersection Summary							
Cycle Length: 60							
Actuated Cycle Length: 60							
Offset: 8 (13%) Referenced to phase	v.NRTL an	d 6∙SBT_St	art of Greer	ı			
Natural Cycle: 60		u 0.501, 5t		1			
Control Type: Actuated Coordinated							
Maximum v/c Datio: 0.29							
Intersection Signal Delay: 4.4				اسل	orcotion L		
Intersection Signal Delay: 4.4	0/					JS: A	
Analysis Dariad (min) 15	70			IC	U Level of S	ervice b	
Analysis Period (min) 15							
Spiils and Phases: 2: Merivale & V	vestgate SC	,				— <u> </u>	
1 Ø2 (B)							Ø4
26 c						24	с т.
50.5						24 9	0
Ø6 (R)							

36 s

Background 2025 AM 3: Merivale & Carling

	-	\mathbf{F}	4	-	×.	1	Ť	1	1	Ļ	4	
Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	† †	1	٦	^	1	۲.	•	1	۲	†	1	
Traffic Volume (vph)	857	71	149	662	32	224	206	237	26	234	208	
Future Volume (vph)	857	71	149	662	32	224	206	237	26	234	208	
Lane Group Flow (vph)	902	75	157	697	34	236	217	249	27	246	219	
Turn Type	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2		1	6		3	8		7	4		
Permitted Phases		2	6		6			8			4	
Detector Phase	2	2	1	6	6	3	8	8	7	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	29.0	29.0	10.4	29.0	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Total Split (s)	49.0	49.0	12.0	61.0	61.0	21.0	38.0	38.0	21.0	38.0	38.0	
Total Split (%)	40.8%	40.8%	10.0%	50.8%	50.8%	17.5%	31.7%	31.7%	17.5%	31.7%	31.7%	
Yellow Lime (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	2.3	1.7	2.3	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
Lost Lime Adjust (s)	-2.0	0.0	-1.4	-2.0	0.0	-2.3	-2.7	-2.7	-2.3	-2.1	-2.7	
I otal Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes C Mey	Yes	Yes	C Mov	C May	Yes	Yes	Yes	Yes	Yes	Yes	
Act Effet Croop (c)	C-IVIAX				C-IVIAX	17 0	None	None	None	None	None 25.0	
Actuated a/C Datio	0.40	40.0	00.0	00.0	04.0	0.14	37.Z	37.Z	9.0	20.0	25.0	
Actualeu y/C Ralio	0.42	0.41	0.00	0.00	0.03	0.14	0.31	0.31	0.00	0.21	0.21	
	25.0	1.6	0.00	17.0	0.04	105.0	25.5	5.0	55.2	17.2	17.7	
	20.9	0.0	23.5	0.0	0.1	0.0	0.0	0.0	0.0	47.3	0.2	
Total Delay	26.7	0.0	23.5	17.0	0.0	105.8	25.5	5.8	55.2	17.6	17.0	
	20.7	Δ	23.5	R	Δ	103.0 F	55.5 D	Δ	55.2 F	۰، ۲۰ D	R	
Approach Delay	24.8	Л	U	17 5	Л	1	48.6	Л	L	34.8	D	
Approach LOS	24.0 C			R			-10.0 D			04.0 C		
Queue Length 50th (m)	88.7	0.4	17.4	46.3	0.0	56.1	42.8	0.0	64	45.6	15.8	
Oueue Length 95th (m)	118.5	4.5	#36.6	70.5	0.0	#106.3	60.9	17.7	16.1	64.5	27.7	
Internal Link Dist (m)	89.4	110		139.3	010		131.8		1011	88.4	27.17	
Turn Bay Length (m)		25.0	90.0		25.0	40.0			40.0		70.0	
Base Capacity (vph)	1436	642	287	1863	782	240	558	627	240	505	504	
Starvation Cap Reductn	249	0	0	0	0	0	0	0	0	44	38	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.76	0.12	0.55	0.37	0.04	0.98	0.39	0.40	0.11	0.53	0.47	
Intersection Summany												
Cycle Length: 120												
Actuated Cycle Length: 120												
Actualed Cycle Length: 120	D.EDT on		Start of Cro	0 n								
Natural Cycle: 00	Z.EDI dii	U O. WDIL, 、	Start of Gre	en								
Control Type: Actuated Coordinated												
Maximum v/c Patio: 0.98												
Intersection Signal Delay: 29.7				Ini	tersection I (05.0						
Intersection Capacity Litilization 81.1%				IC		Service D						
Analysis Period (min) 15				10								
# 95th percentile volume exceeds ca	pacity, que	eue may be	longer									
Queue shown is maximum after two	o cycles.	ao may zo	longon									
Splits and Phases: 3: Merivale & Ca	rling											
✓ Ø1 • → Ø2 (R)	-				1	Ø3		🌵 ø4				
12 s 49 s					21 s			38 s				
Ø6 (R) 🏮						07		Ø8				
61 s					21 s			38 s				

Background 2025 AM 4: Carling & Westgate SC E

	•	٨	+	*	4	ł	۹.	•	1	×	ŧ	- √
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		ă.	44	1	٦.	44	1		4		ب اً	1
Traffic Volume (vph)	99	100	1295	14	7	868	57	12	2	24	1	16
Future Volume (vph)	99	100	1295	14	7	868	57	12	2	24	1	16
Lane Group Flow (vph)	0	209	1363	15	7	914	60	0	29	0	26	17
Turn Type	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases			2			6			8		4	
Permitted Phases	2	2		2	6		6	8		4		4
Detector Phase	2	2	2	2	6	6	6	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.6	23.6	23.6	23.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0
Total Split (s)	83.0	83.0	83.0	83.0	83.0	83.0	83.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	69.2%	69.2%	69.2%	69.2%	69.2%	69.2%	69.2%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)		-1.6	-1.6	0.0	-1.6	-1.6	0.0		-3.0		-3.0	-3.0
Total Lost Time (s)		4.0	4.0	5.6	4.0	4.0	5.6		4.0		4.0	4.0
Lead/Lag				010			010					110
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effet Green (s)	0 Max	103.4	103.4	102.4	103.4	103.4	102.4	None	17.0	None	17.0	17.0
Actuated g/C Ratio		0.86	0.86	0.85	0.86	0.86	0.85		0.14		0.14	0.14
v/c Ratio		0.00	0.00	0.03	0.00	0.00	0.05		0.14		0.14	0.14
Control Delay		87	43	0.01	53	37	23		26.8		43.6	10.4
Oueue Delay		0.0	4.3 0.1	0.2	0.0	0.1	0.0		20.0		10.0	0.0
Total Delay		8.7	4.3	0.0	5.3	3.8	23		26.8		43.6	10.4
		Δ	4.5 Δ	Δ	Δ	Δ	Δ		20.0		43.0 D	B
Approach Delay		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	49	1	~	37	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		26.8		30.5	
Approach LOS			Δ			Δ			20.0		00.0 C	
Oueue Length 50th (m)		Q /	32 /	0.0	03	28.7	10		3.2		57	0.0
Oueue Length 95th (m)		52.2	108.1	m0.2	m1 2	m/8.6	m3.6		10.0		11 7	0.0
Internal Link Dist (m)		55.5	112.0	1110.2	1111.2	0.0 20 /	115.0		10.0		19.7	7.7
Turn Bay Length (m)		100.0	112.0	25.0	45.0	07.4	25.0		10.0		40.4	
Base Canacity (unb)		457	2021	1252	275	2021	1100		400		350	121
Starvation Can Poductn		437	2721	1233	275	700	0		400		0	424
Snillback Can Reductin		0	275	0	0	1,30	0		0		0	0
Storage Can Deducth		0	273	0	0	0	0		0		0	0
Reduced v/c Ratio		0.46	0.52	0.01	0.03	0.43	0.05		0.07		0.07	0.04
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 26 (22%), Referenced to pha	se 2:EBTL a	ind 6:WBTL	, Start of Gr	een								
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.47												
ntersection Signal Delay: 5.1 Intersection LOS: A												
Intersection Capacity Utilization 79.0)%			IC	U Level of S	Service D						
Analysis Period (min) 15												
Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 4: Carling & W	/estgate SC	E										

≠ Ø2 (R)	↓ Ø4
83 s	37 s
Ø6 (R)	≪ ¶ Ø8
83 s	37 s

Background 2025 AM 5: Carling & Westgate SC W

	-	+	•	1					
Lane Group	EBT	WBT	WBR	SBL					
Lane Configurations	**	**	1	M					
Traffic Volume (vph)	1090	1154	13	13					
Future Volume (vph)	1090	1154	13	12					
Lane Group Flow (vph)	1147	1215	10	3/					
	NA	NA	Dorm	Drot					
Protocted Dhases	NA 2	NA 4	Pellii	PIOL					
Protected Phases	Z	0	4	4					
Permilleu Phases	n	1	0	1					
Delector Phase	2	6	6	4					
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0					
Minimum Split (s)	24.0	48.3	48.3	37.1					
Total Split (s)	83.0	83.0	83.0	37.0					
Total Split (%)	69.2%	69.2%	69.2%	30.8%					
Yellow Time (s)	3.7	3.7	3.7	3.0					
All-Red Time (s)	1.6	1.6	1.6	3.1					
Lost Time Adjust (s)	0.0	0.0	0.0	0.0					
Total Lost Time (s)	5.3	5.3	5.3	6.1					
Lead/Lag	0.0	0.0	0.0	0.1					
Lead-Lag Optimize?									
Recall Mode	C_Max	C-May	C-Max	None					
Act Effet Green (s)	107.0	107.2	107.2	10.0					
Actuated a/C Datic	0.00	0.00	0.00	0.00					
Actualed y/C Kallo	0.89	0.89	0.89	0.08					
	0.38	0.40	0.01	0.22					
Control Delay	2.4	1.1	0.1	32.6					
Queue Delay	0.0	0.1	0.0	0.0					
Total Delay	2.4	1.2	0.1	32.6					
LOS	A	A	А	С					
Approach Delay	2.4	1.2		32.6					
Approach LOS	А	А		С					
Queue Length 50th (m)	29.7	4.6	0.1	3.1					
Queue Length 95th (m)	36.5	6.4	m0.1	13.2					
Internal Link Dist (m)	32.6	112.0		92.7					
Turn Bay Length (m)	02.0	112.0	25.0	12.1					
Base Canacity (vnh)	3027	3027	1255	120					
Stanuation Can Doducto	5027	5027	1300	429					
Stativation Cap Reductin	0	300	0	0					
	80	0	0	U					
Storage Cap Reducth	0	0	0	0					
Reduced V/c Ratio	0.39	0.46	0.01	0.08					
Intersection Summary									
Cycle Length: 120									
Actuated Cycle Length: 120									
ACIUATED CYCLE LENGIN: 120	O DEDT CT		tart of Crass	0					
Unset: 38 (32%), Referenced to phas	e z:eri an	IU 0:WBT, S	Ian of Greek	1					
Natural Cycle: 90									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 0.40									
ntersection Signal Delay: 2.2 Intersection LOS: A									
ntersection Capacity Utilization 51.5% ICU Level of Service A									
Analysis Period (min) 15									
m Volume for 95th percentile queue is metered by upstream signal.									
			-						
Splits and Phases: 5: Carling & We	estgate SC	W							

● ● Ø2 (R)	₩Ø4
83 s	37 s
Ø6 (R)	
83 s	

Background 2025 AM 6: Kirkwood & Carling WB

	4	+	•	Ť	Ļ	~	
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR	
Lane Configurations	ሻሻ	<u> </u>	ň	•	44	1	
Traffic Volume (vph)	203	1651	280	339	424	360	
Future Volume (vph)	203	1651	280	339	424	360	
Lane Group Flow (vph)	214	2002	295	357	446	379	
Turn Type	Perm	NA	pm+pt	NA	NA	Perm	
Protected Phases	1 01111	6	3	8	4	1 0.111	
Permitted Phases	6	0	8		•	4	
Detector Phase	6	6	3	8	4	4	
Switch Phase	Ū	Ū	U	Ū	•	•	
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	25.2	25.2	11.0	20.0	20.0	20.0	
Total Split (s)	58.0	58.0	24.0	62.0	27.0	27.0	
Total Split (%)	10 20/	10 20/	24.0	02.0 51.7%	21 7%	21 7%	
Vallou Time (2)	40.370	40.3%	20.0%	01.770 2.2	31.770 2.2	31.770	
All Ded Time (s)	3.7	3.7	3.3	3.3	3.3	3.3	
All-Ked Time (S)	2.0	2.0	2.7	2.1	2.1	2.1	
LUST HIME AUJUST (S)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0	
I Otal LOST I IME (S)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes		Yes	Yes	
Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped	
Act Effct Green (s)	57.4	57.4	54.6	54.6	31.5	31.5	
Actuated g/C Ratio	0.48	0.48	0.46	0.46	0.26	0.26	
v/c Ratio	0.14	0.88	0.69	0.44	0.50	0.85	
Control Delay	18.7	34.2	21.2	15.3	39.3	51.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.7	34.2	21.2	15.3	39.3	51.0	
LOS	В	С	С	В	D	D	
Approach Delay		32.7		18.0	44.7		
Approach LOS		С		В	D		
Queue Length 50th (m)	14.9	158.7	48.9	60.5	45.6	65.7	
Queue Length 95th (m)	22.4	#187.4	m70.0	m83.5	61.1	#113.6	
nternal Link Dist (m)		110.3		152.2	73.8		
Turn Bay Length (m)	40.0					22.0	
Base Capacity (vph)	1564	2272	439	862	960	472	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.88	0.67	0.41	0.46	0.80	
	0.11	0.00	0.07	0.11	0.10	0.00	
ntersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 66 (55%), Referenced to phase	6:WBTL,	Start of Gre	en				
Natural Cycle: 80							
Control Type: Actuated-Coordinated							
Vaximum v/c Ratio: 0.88							
Intersection Signal Delay: 32.8				Int	tersection L	OS: C	
ntersection Capacity Utilization 100.5%	6			IC	U Level of S	Service G	
Analysis Period (min) 15							
# 95th percentile volume exceeds car	nacity, qu	eue may be	longer				
Oueue shown is maximum after two	cvcles						
Volume for 95th percentile queue is	s motoror	hy unstroa	m signal				
in volume for 95th percentile queue is	Sineleiel	i by upsileai	n siynai.				
Splits and Phases: 6: Kirkwood & Ca	arling WB						
					1 002		4 04
					1/03		▼ 29 a
					24 S		38 S
🖉 Ø6 (R)					1 08		

Background 2025 AM 7: Kirkwood & Carling EB

Lane Group EBL EBI EBR NBI NBR SBL SBI Lane Configurations 1 2 1 3 1 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 <th></th> <th>٦</th> <th>→</th> <th>*</th> <th>Ť</th> <th>1</th> <th>×</th> <th>ŧ</th>		٦	→	*	Ť	1	×	ŧ
Lane Configurations Y A+ Y A+ Y A+ Y A+ Traffic Volume (ph) 212 2183 422 407 398 473 250 Lane Group Flow (ph) 201 2320 444 428 419 498 263 Lane Group Flow (ph) 201 2320 444 428 419 498 263 Lun Type Perm NA Perm NA <td>Lane Group</td> <td>EBL</td> <td>EBT</td> <td>EBR</td> <td>NBT</td> <td>NBR</td> <td>SBL</td> <td>SBT</td>	Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Traffic Volume (vph) 212 2183 422 407 398 472 250 Future Volume (vph) 212 2183 422 407 398 473 250 Future Volume (vph) 211 2320 444 428 419 498 263 Turn Type Perm NA Perm NA Permited Phases 2 8 8 7 7 4 Permited Phases 2 2 8 8 7 4 500 10.0 10.0 10.0 10.0 10.0 5.0 10.0 Detector Phase 2 2 2 8 8 7 4 Switch Phase 31.7% 3.3	Lane Configurations	5	4412	1	**	1	ň	*
Fulue Volume (vph) 212 218 422 407 398 473 250 Lane Group Flow (vph) 201 2320 444 428 419 498 263 Lunn Type Perm NA Perm Perm NA Perm NA Perm NA Perm NA Perm NA Perm Perm NA NA <	Traffic Volume (vph)	212	2183	422	407	398	473	250
Lane Group Flow (vph) 201 2320 444 428 419 498 253 Turn Type Perm NA Perm NA Perm pmpt NA Permited Phases 2 2 8 7 4 Permited Phases 2 2 2 8 8 7 4 Switch Phase 2 2 2 2 8 8 7 4 Switch Phase 2 2 2 2 8 8 7 4 Switch Phase 3 7 43 7 43 7 10.0 10.0 10.0 5.0 10.0 Total Split (\$) 580 580 580 580 380 380 24.0 62.0 Total Split (\$) 580 580 580 580 380 380 24.0 62.0 Total Split (\$) 580 580 580 580 380 380 24.0 62.0 Total Split (\$) 580 580 580 580 380 380 24.0 62.0 Switch Time (\$) 2.5 2.5 2.5 2.8 2.8 18 2.8 Lost Time A(s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Lead Lag Dytimize? Ves Yes Yes Recall Mode C Max C-Max C-Max Min Min Min Min Min Act Effet Green (\$) 54.0 54.0 54.0 54.0 34.0 34.0 58.0 58.0 58.0 Recall Mode C Max C-Max C-Max Min Min Min Min Min Act Effet Green (\$) 54.0 54.0 54.0 54.0 34.0 34.0 58.0 58.0 Actuated gC Ratio 0.45 0.45 0.45 0.28 0.28 0.48 0.48 vic Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Control Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 Dueue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 LOS C F B D F F C C Approach LOS E E E E E E E E E E E E E E E E E E E	Future Volume (vph)	212	2183	422	407	398	473	250
Turn Type Perm NA Perm NA Perm NA Perm Perm NA Protected Phases 2 2 8 7 4 Permitted Phases 2 2 8 8 7 4 Detector Phase 2 2 2 8 8 7 4 Detector Phase 2 2 2 8 8 7 4 Minimum Split (s) 292 292 292 292 201 26.1 10.1 26.1 Total Split (s) 48.3% 48.3% 48.3% 31.7% 31.7% 20.0% 51.7% Vellow Time (s) 2.5 2.5 2.5 2.8 2.8 1.8 2.8 Lost Time Adjust (s) -2.2 -2.2 -2.1 -1.1 -2.1 10.1 Time Adjust (s) -2.2 -2.2 -2.2 -2.1 -2.1 -1.1 -2.1 10.1 10.0 10.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 40.0 <t< td=""><td>Lane Group Flow (vph)</td><td>201</td><td>2320</td><td>444</td><td>428</td><td>419</td><td>498</td><td>263</td></t<>	Lane Group Flow (vph)	201	2320	444	428	419	498	263
Protected Phases 2 8 7 4 Permitted Phases 2 2 8 4 Permitted Phases Switch Phase 2 2 2 8 7 4 Switch Phase 0 10.0 10.0 10.0 10.0 50 0.0 Minimum Initial (s) 10.0 10.0 10.0 10.0 50 0.0 Minimum Split (s) 58.0 58.0 58.0 38.0 38.0 38.0 24.0 62.0 Total Split (%) 48.3% 48.3% 31.7% 31.7% 20.0% 51.7% Yellow Time (s) 2.5 2.5 2.8 2.8 1.8 2.8 Lead-Lag Lag Lag Lag Lag Lag Lag Lag Lead-Lag C-Max C-Max Min <min< td=""> Min Min Min Actuated g/C Ratio 0.45 0.45 0.45 0.28 0.48 0.48 Vic Ratio 0.31 1.12 0.55 0.45 0.99 1.06 0.31</min<>	Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA
Permitted Phases 2 2 2 8 4 Detector Phase 2 2 2 8 8 7 4 Minimum pittial (s) 10.0	Protected Phases		2		8		7	4
Detector Phase 2 2 2 8 8 7 4 Switch Phase Minimum filial (s) 10.0	Permitted Phases	2	_	2	-	8	4	
Switch Phase L <thl< th=""> L L <thl< th=""> <th< td=""><td>Detector Phase</td><td>2</td><td>2</td><td>2</td><td>8</td><td>8</td><td>7</td><td>4</td></th<></thl<></thl<>	Detector Phase	2	2	2	8	8	7	4
Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 5.0 10.0 Minimum Split (s) 29.2 29.2 29.2 26.1 26.1 10.1 26.1 Total Split (s) 48.3% 48.3% 48.3% 31.7% 31.7% 20.0% 51.7% Velow Time (s) 3.7 3.7 3.3 3.1 1.0 M.0	Switch Phase	-	-	-	Ū	Ŭ	•	•
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	50	10.0
Total Split (%) 580 580 580 580 380 380 240 620 Total Split (%) 48.3% 48.3% 48.3% 31.7% 20.0% 51.7% Vellow Time (s) 3.7 3.7 3.7 3.3 3.3 3.3 3.3 All-Red Time (s) 2.5 2.5 2.5 2.8 2.8 1.8 2.8 Lost Time Adjust (s) -2.2 -2.2 -2.2 -2.2 -2.1 -1.1 -2.1 Lead-Lag Optimize? Yes	Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1
Data Split (%) 0.50 48.3% 48.3% 48.3% 31.7% 31.7% 20.0% 51.7% Veltow Time (s) 3.7 3.7 3.7 3.3 <th< td=""><td>Total Split (s)</td><td>58.0</td><td>58.0</td><td>58.0</td><td>38.0</td><td>38.0</td><td>24.0</td><td>62.0</td></th<>	Total Split (s)	58.0	58.0	58.0	38.0	38.0	24.0	62.0
Oracle prime 01.73	Total Split (%)	48.3%	48.3%	48.3%	31.7%	31.7%	20.0%	51.7%
Control	Vellow Time (s)	37	37	37	22	22	20.070	22
Link (a) 2.3 2.3 2.5 2.0 2.0 1.0 2.0 Lead Lag Optimize? 2.2 2.2 2.2 2.2 2.2 2.2 2.1 1.1 2.1 Lead-Lag Optimize? Yes Yes Yes Yes Yes Yes Recall Mode C-Max C-Max C-Max Min Min Min Min Actuated g/C Ratio 0.45 0.45 0.45 0.28 0.28 0.48 0.48 v/c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Control Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Corea Delay 76.1 58.9 65.6 56 65.6 65.6 Approach LOS E </td <td>All Ped Time (s)</td> <td>J.7 25</td> <td>2.7</td> <td>2.5</td> <td>2.5 2.9</td> <td>2.5 2.9</td> <td>J.J 1 Q</td> <td>3.J 2.Q</td>	All Ped Time (s)	J.7 25	2.7	2.5	2.5 2.9	2.5 2.9	J.J 1 Q	3.J 2.Q
Los line Adjust (s) -2.2 -2.2 -2.2 -2.1 -2.1 -1.1 -2.1 Los line Adjust (s) -2.2 -2.2 -2.2 -2.1 -2.1 -2.1 -1.1 -2.1 Lead-Lag Optimize? -2.2 -2.2 -2.2 -2.1 -2.1 -2.1 -1.1 -2.1 Lead-Lag Optimize? -2.2 -2.2 -2.2 -2.1 -2.1 -2.1 -1.1 -2.1 Lead-Lag Optimize? -2.2 -2.2 -2.2 -2.1 -2.1 -2.1 -1.1 -2.1 Lead-Lag Optimize? -2.2 -2.2 -2.2 -2.1 -2.1 -2.1 -2.1 -1.1 -2.1 Lead-Lag Optimize? -2.2 -2.2 -2.2 -2.2 -2.1 -2.1 -2.1 -2.1	All-Reu Time (S)	2.0	2.0	2.0	2.0	2.0	1.0	2.0
Total Exp 4.0	Lost fille Aujust (5) Total Lost Timo (5)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1
Leadu-Lag Optimize? Recall Mode C-Max C-Max Min Min Min Min Min Act Effect Green (s) 54.0 54.0 54.0 34.0 34.0 34.0 58.0 58.0 58.0 58.0 58.0 58.0 58.0 58		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leau-Lay Opuint2e? Yes Yes Recall Mode C-Max C-Max C-Max Min Min Min Min A Recall Mode C-Max C-Max C-Max Min Min Min Min Min A Act Effct Green (s) 54.0 54.0 54.0 34.0 34.0 58.0 58.0 Actuated g/C Ratio 0.45 0.45 0.28 0.28 0.28 0.48 0.48 v/c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Control Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 Oueue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 LOS C F B D F F F C Approach Delay 76.1 58.9 65.6 Approach LOS E E E E E E Queue Length 50th (m) 54.7 #274.1 51.8 58.7 #160.8 #193.9 79.4 Internal Link Dist (m) 161.6 158.6 152.2 Turn Bay Length (m) 40.0 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 0 Reduced v/c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Intersection Signal Delay: 71.2 Intersection LOS: E Intersection LOS: E Intersec	Leau/Lay				Lag	Lag	Lead	
Recall mode C-Max C-Max C-Max Min Min </td <td>Lead-Lag Optimize?</td> <td><u></u></td> <td>0.1.</td> <td><u></u></td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td></td>	Lead-Lag Optimize?	<u></u>	0.1.	<u></u>	Yes	Yes	Yes	
Act Lett Green (s) 54.0 54.0 54.0 34.0 34.0 34.0 58.0 58.0 Actuated g/C Ratio 0.45 0.45 0.45 0.28 0.28 0.48 0.48 v(c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Control Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 C F B D F F C Approach Delay 76.1 58.9 65.6 Approach Delay 76.1 58.9 65.6 Approach LOS E E E E E Dueue Length 95th (m) 54.7 #274.1 51.8 58.7 #160.8 #193.9 79.4 Internal Link Dist (m) 161.6 158.6 152.2 Turn Bay Length (m) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 Storage Cap Reductn 0 0 0 Storage Cap Reductn 0 Storage Cap	Recall Mode	C-Max	C-Max	C-Max	Min	Min	Min	Min
Actuated g/C Ratio 0.45 0.45 0.45 0.28 0.28 0.48 0.48 0.48 0/c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 0.2 0.2 0.7 0.8 1.06 0.31 0.2 0.2 0.7 0.8 1.2 0.2 0.2 0.2 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Act Effct Green (s)	54.0	54.0	54.0	34.0	34.0	58.0	58.0
v/c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Control Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 Queue Delay 0.0	Actuated g/C Ratio	0.45	0.45	0.45	0.28	0.28	0.48	0.48
Control Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Call Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 LOS C F B D F F C Approach Delay 76.1 58.9 65.6 Approach LOS E E E E Queue Length 50th (m) 34.4 -243.9 21.8 43.5 97.8 -119.8 44.7 Queue Length 95th (m) 54.7 #274.1 51.8 58.7 #160.8 #193.9 79.4 Internal Link Dist (m) 161.6 158.6 152.2 Turn Bay Length (m) 40.0 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Spilback Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0	v/c Ratio	0.31	1.12	0.55	0.45	0.98	1.06	0.31
Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 LOS C F B D F F C Approach Lols E E E E E E Queue Length 50th (m) 34.4 -243.9 21.8 43.5 97.8 -119.8 44.7 Queue Length 95th (m) 54.7 #274.1 51.8 58.7 #160.8 #193.9 79.4 Internal Link Dist (m) 161.6 158.6 152.2 170.8 44.7 182.2 183.2 183.8 960 42.9 471 862 12.2 147.4 185.6 152.2 147.4 185.2 152.2 147.4 186.2 122.2 147.4 160.8 #193.9 79.4 1162.2 147.4 160.8 4193.9 79.4 162.2 147.4 162.2 147.4 162.2 147.4 162.2 147.4 162.2 147.4 162.2 147.4 162.4<	Control Delay	22.7	93.3	10.2	37.1	81.2	88.3	22.6
Total Delay 22.7 93.3 10.2 37.1 81.2 88.3 22.6 LOS C F B D F F C Approach Delay 76.1 58.9 65.6 Approach LOS E E E E Queue Length 50th (m) 34.4 -243.9 21.8 43.5 97.8 -119.8 44.7 Queue Length 95th (m) 54.7 #274.1 51.8 58.7 #160.8 #193.9 79.4 Internal Link Dist (m) 161.6 158.6 152.2 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS C F B D F F C Approach Delay 76.1 58.9 65.6 Approach LOS E E E E E E E E E E E E E E E E E E E	Total Delay	22.7	93.3	10.2	37.1	81.2	88.3	22.6
Approach Delay76.158.965.6Approach LOSEEEEQueue Length 50th (m)34.4-243.921.843.597.8-119.844.7Queue Length 95th (m)54.7#274.151.858.7#160.8#193.979.4Internal Link Dist (m)161.6158.6152.2158.6152.2Turn Bay Length (m)40.090.090.08ase Capacity (vph)655207180896042.9471862Starvation Cap Reductn000000000Spillback Cap Reductn000000000Storage Cap Reductn00	LOS	С	F	В	D	F	F	С
Approach LOSEEEEQueue Length 50th (m) 34.4 -243.9 21.8 43.5 97.8 -119.8 44.7 Queue Length 95th (m) 54.7 $#274.1$ 51.8 58.7 $#160.8$ $#193.9$ 77.4 Internal Link Dist (m)161.6158.6152.2Turn Bay Length (m) 40.0 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn0000000Spillback Cap Reductn0000000Storage Cap Reductn00000000Reduced v/c Ratio0.311.120.550.450.981.060.31Intersection SummaryCycle Length: 120Actuated Cycle Length: 12000000Actuated Cycle Length: 120Offset: 15 (13%), Referenced to phase 2:EBTL, Start of GreenNatural Cycle: 100Control Type: Actuated-CoordinatedMaximum v/c Ratio: 1.12Intersection LOS: EIcU Level of Service GAnalysis Period (mi) 15-Volume exceeds capacity, queue is theoretically infinite.Oueue shown is maximum after two cycles.#951 percentile volume exceeds capacity, queue may be longer. 924 S8 s962 s 924 58 s $62 s$	Approach Delay		76.1		58.9			65.6
Display="1">Display="1">Display="1">Display=Di	Approach LOS		E		E			E
Druce Length 195th (m) 54.7 #274.1 51.8 58.7 #16.8 #193.9 79.4 Internal Link Dist (m) 161.6 158.6 152.2 Turn Bay Length (m) 40.0 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0	Oueue Length 50th (m)	34.4	~243 9	21.8	43.5	97.8	~119.8	44 7
Internal Link Dist (m) 161.6 158.6 170.7 Internal Link Dist (m) 40.0 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Intersection Summary Cycle Length: 120 Cycle Length: 120 Cole Length: 120 Cole Length: 120 Cole Length: 120 Intersection LOS: E Intersection Signal Delay: 71.2 Intersection LOS: E Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 - Volume exce	Queue Length 95th (m)	54.7	#274 1	51.8	58 7	#160.8	#193.9	79.4
International claim claim 101.0 102.2 Turm Bay Length (m) 40.0 90.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 0 Staryation Cap Reductn 0 0 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 0 0 0 Staryation Support 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Intersection Summary Cycle Length: 120 0 <td>Internal Link Dist (m)</td> <td>57.7</td> <td>161.6</td> <td>51.0</td> <td>158.6</td> <td># 100.0</td> <td></td> <td>152.2</td>	Internal Link Dist (m)	57.7	161.6	51.0	158.6	# 100.0		152.2
Hain Gay Edigin (iii) 10.0 10.0 Base Capacity (vph) 655 2071 808 960 429 471 862 Starvation Cap Reductin 0 0 0 0 0 0 0 0 0 Spillback Cap Reductin 0 0 0 0 0 0 0 0 0 Storage Cap Reductin 0 0 0 0 0 0 0 0 0 0 Storage Cap Reductin 0	Turn Bay Length (m)	/0.0	101.0		130.0	00.0		132.2
Date Capecing (yn) 000 2071 000 427 471 802 Starvation Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Starvation Cap Reductn 0	Base Canacity (yrb)	40.0	2071	202	040	/0.0	/71	860
Starvatori Cap Reductin 0 <td>Stanuation Can Deducto</td> <td>000</td> <td>20/1</td> <td>000</td> <td>900</td> <td>429</td> <td>4/1</td> <td>002</td>	Stanuation Can Deducto	000	20/1	000	900	429	4/1	002
Spinious Cap Reductin 0 <td>Starvation Cap Reductin</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	Starvation Cap Reductin	0	0	0	0	0	0	0
Storage cap reductin000000000Reduced V/c Ratio0.311.120.550.450.981.060.31Intersection SummaryCycle Length: 120Actuated Cycle Length: 120Offset: 15 (13%), Referenced to phase 2:EBTL, Start of GreenNatural Cycle: 100Control Type: Actuated-CoordinatedMaximum v/c Ratio: 1.12Intersection LOS: EIntersection Signal Delay: 71.2Intersection LOS: EIntersection Capacity Utilization 100.5%ICU Level of Service GAnalysis Period (min) 15~~ Volume exceeds capacity, queue is theoretically infinite.Queue shown is maximum after two cycles.## 95th percentile volume exceeds capacity, queue may be longer.Queue shown is maximum after two cycles. $eg4$ 58 s62 s	Spillback Cap Reductin	0	0	0	U	U	0	0
Reduced V/C Katto 0.31 1.12 0.55 0.45 0.98 1.06 0.31 Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 15 (13%), Referenced to phase 2:EBTL, Start of Green Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Actuated Cueue and the second acting EB Actuated Cueue a	Storage Cap Reductn	0	0	0	0	0	0	0
Intersection Summary Cycle Length: 120 Actuated Cycle Length: 120 Offset: 15 (13%), Referenced to phase 2:EBTL, Start of Green Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% Intersection Capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Image: 2 (R)	Reduced v/c Ratio	0.31	1.12	0.55	0.45	0.98	1.06	0.31
Cycle Length: 120 Actuated Cycle Length: 120 Offset: 15 (13%), Referenced to phase 2:EBTL, Start of Green Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% Intersection Capacity Utilization 100.5% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB	Intersection Summary							
Actuated Cycle Length: 120 Actuated Cycle Length: 120 Offset: 15 (13%), Referenced to phase 2:EBTL, Start of Green Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB # 02 (R) 58 s	Cycle Length: 120							
Actuated Cycle Eurgin: 120 Offset: 15 (13%), Referenced to phase 2:EBTL, Start of Green Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Ø4 	Actuated Cycle Length: 120							
Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB → Ø2 (R) ↓ Ø4 58 s ↓ Ø4	Offset: 15 (13%) Deferenced to pha	so 2. EBTL	Start of Grou	n				
Natural Cycle: 100 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% Intersection Capacity, utilization 100.5% ICU Level of Service G Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Image: Select the s	Notural Cycles 100	ISE Z.LDTL,						
Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection Capacity Utilization 100.5% Intersection Capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 8 Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 7: Kirkwood & Carling EB Image: Splits and Phases: 7: Kirkwood & Carling EB	Natural Cycle: 100	1						
Maximum v/c Ratio: 1.12 Intersection Signal Delay: 71.2 Intersection LOS: E Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB ↓ Ø4 58 s ↓ Ø4	Control Type: Actuated-Coordinated							
Intersection Signal Delay: 71.2 Intersection LOS: E Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB $4 \neq 02$ (R) 58 s 62 s	Maximum v/c Ratio: 1.12							
Intersection Capacity Utilization 100.5% ICU Level of Service G Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB	Intersection Signal Delay: 71.2				In	tersection L	OS: E	
Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB	Intersection Capacity Utilization 100	.5%			IC	U Level of S	Service G	
 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Ø2 (R) Ø4 58 s Ø2 s 	Analysis Period (min) 15							
Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB \$\sum \vee \vee 2 (R) \$\sum \vee \vee 2 (R) \$\sum \vee \vee 2 (R) \$\sum \vee 2 (R)	~ Volume exceeds capacity, queue	e is theoretic	ally infinite.					
 # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB 	Queue shown is maximum after t	wo cycles.	-					
Queue shown is maximum after two cycles. Splits and Phases: 7: Kirkwood & Carling EB Ø2 (R) 58 s 62 s 777	# 95th percentile volume exceeds	capacity, que	eue mav be	lonaer.				
Splits and Phases: 7: Kirkwood & Carling EB	Queue shown is maximum after t	wo cycles.		J				
Spiris and Priases: /: Kirkwood & Carling EB Ø2 (R) Ø4 58 s 62 s	Colite and Dhases 7. Kinkers of a	Corling ED						
58 s 62 s	Spins and Phases: 7: KIFKWOOD &	Carling EB						
58 s 62 s	₩ Ø2 (R)					♥ ‴Ø4		
	58 s					62 s		
						107		

Synchro 9 - Report

Lane Group	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Group Flow (vph)	
Sign Control	
Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 0.0%	ICU Level of Service A
Analysis Period (min) 15	

Background 2025 PM 2: Merivale & Westgate SC

	۶	1	Ť	ţ	1		
Lane Group	EBL	NBL	NBT	SBT	SBR		
Lane Configurations	V	3		•	1		
Traffic Volume (vph)	78	79	200	491	94		
Future Volume (vph)	78	79	200	491	94		
Lane Group Flow (vph)	177	83	211	517	99		
	Prot	Porm	NΔ	NΔ	Porm		
Protected Phases	1101	T CITI	2	6	T CITI		
Permitted Phases	Т	2	2	0	6		
Detector Phase	4	2	2	6	6		
Switch Phase	т	2	2	0	0		
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		
Minimum Snlit (s)	24.0	24.0	24.0	25.8	35.8		
Total Split (s)	24.0	24.0	24.0	36.0	36.0		
Total Split (%)	10.0%	60.0%	60.0%	60.0%	60.0%		
Vellow Time (s)	40.070	2 2	2 2	2 2	2 2		
All Dod Time (s)	ວ.ວ ງາ	3.3 2.5	3.3 2.5	3.3 2.5	3.3 2 E		
Lost Time Adjust (s)	2.2	2.0	2.0	2.0	2.0		
Total Lost Time (s)	0.0	U.U E 0	U.U E 0	U.U E 0	0.0		
	0.0	0.ŏ	0.ŏ	0.Ŭ	0.C		
Leau/Lay							
	Nono	C May	C Mov	C May	C May		
Act Effet Croop (c)	10.0	U-IVIAX	U-IVIAX	U-IVIAX	C-IVIAX		
Act Elici Green (S)	10.8	42.1	42.1	42.1	42.1		
Actualed g/C Rallo	0.18	0.70	0.70	0.70	0.70		
V/C KallO	0.48	0.15	U.I/	0.41	0.09		
	15.6	1.8	1.4	6.9	1.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay	15.6	1.8	1.4	6.9	1.6		
LUS	1F (A	A	A	А		
Approach Delay	15.6		1.5	6.0			
Approach LUS	В		A	A			
Queue Length 50th (m)	8.0	0.7	1.8	23.5	0.0		
Queue Length 95th (m)	21.5	2.1	4.4	48.8	4.5		
Internal Link Dist (m)	28.7	10.0	87.9	55.1			
Turn Bay Length (m)		40.0			40.0		
Base Capacity (vph)	564	557	1252	1252	1094		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	14	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.31	0.15	0.17	0.42	0.09		
Intersection Summary							
Cycle Longth: 40							
Actuated Cycle Length: (0							
Actualed Cycle Lengin: 60			Nort of Cro				
Ulisel: 27 (45%), Referenced to pha	ISE Z:INBTE a	na 6:281, 3	start of Gree	en			
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
IVIAXIMUM V/C RATIO: 0.48							
Intersection Signal Delay: 6.4				Ini	tersection L	US: A	
Intersection Capacity Utilization 60.3	3%			IC	U Level of S	Service B	
Analysis Period (min) 15							
	No						
Spiils and Phases: 2: Merivale &	westgate SC						
🔨 Ø2 (R)						Ø4	
36 s						24 s	
(A6 (P)							
₩ Ø6 (K)							

36 s

Background 2025 PM 3: Merivale & Carling

	+	*	4	+	×	•	1	1	*	Ļ	~	
Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	^	1	۲	^	1	5	•	1	ň	•	1	
Traffic Volume (vph)	923	114	349	1538	40	176	206	185	51	288	188	
Future Volume (vph)	923	114	349	1538	40	176	206	185	51	288	188	
Lane Group Flow (vph)	972	120	367	1619	42	185	217	195	54	303	198	
Turn Type	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2	2 1 6 3 8 7 4										
Permitted Phases		2 6 6 8 4										
Detector Phase	2 2 1 6 6 3 8 8 7 4 4											
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	29.0	29.0	10.4	29.0	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Total Split (s)	42.0	42.0	20.0	62.0	62.0	20.0	38.0	38.0	20.0	38.0	38.0	
Total Split (%)	35.0%	35.0%	16.7%	51.7%	51.7%	16.7%	31.7%	31.7%	16.7%	31.7%	31.7%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	2.3	1.7	2.3	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
Lost Time Adjust (s)	-2.0	0.0	-1.4	-2.0	0.0	-2.3	-2.7	-2.7	-2.3	-2.7	-2.7	
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None	
Act Effct Green (s)	38.0	36.0	64.1	64.1	62.1	15.8	34.8	34.8	11.5	28.1	28.1	
Actuated g/C Ratio	0.32	0.30	0.53	0.53	0.52	0.13	0.29	0.29	0.10	0.23	0.23	
v/c Ratio	0.91	0.23	0.98	0.89	0.06	0.83	0.42	0.35	0.33	0.73	0.44	
Control Delay	46.5	3.7	77.4	33.8	0.1	79.8	37.7	6.3	55.2	47.3	13.5	
Queue Delay	43.3	0.0	0.0	20.9	0.0	0.0	0.0	0.0	0.0	1.0	0.0	
Total Delay	89.8	3.7	77.4	54.7	0.1	79.8	37.7	6.3	55.2	48.3	13.5	
LOS	F	А	E	D	А	E	D	А	Е	D	В	
Approach Delay	80.3			57.7			40.5			36.6		
Approach LOS	F			E			D			D		
Queue Length 50th (m)	121.4	0.3	~76.6	176.0	0.0	43.0	41.9	0.0	12.6	53.8	11.4	
Queue Length 95th (m)	#154.1	9.0	#153.4	#248.7	0.0	#80.4	63.9	16.8	25.6	70.4	24.7	
Internal Link Dist (m)	81.2			139.3			110.3			87.9		
Turn Bay Length (m)		25.0	90.0		25.0	40.0			40.0		70.0	
Base Capacity (vph)	1073	518	374	1810	763	226	527	568	226	505	510	
Starvation Cap Reductn	183	0	0	0	0	0	0	0	0	63	0	
Spillback Cap Reductn	0	0	0	248	0	0	0	0	0	0	9	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.09	0.23	0.98	1.04	0.06	0.82	0.41	0.34	0.24	0.69	0.40	
later attack												
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 15 (13%), Referenced to phas	e 2:EBT an	d 6:WBTL,	Start of Gre	en								
Natural Cycle: 120												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.98												
Intersection Signal Delay: 58.3				In	tersection I	LOS: E						
Intersection Capacity Utilization 91.69	6			IC	U Level of	Service F						
Analysis Period (min) 15												
 Volume exceeds capacity, queue 	is theoretic	ally infinite.										
Queue shown is maximum after tw	/o cycles.											
# 95th percentile volume exceeds c	apacity, que	eue may be	longer.									
Queue shown is maximum after tw	o cycles.											
Solits and Dhasas 2. Marivala 9. C	arling											
	anning				4							
🔮 Ø1 💼 🖬 👘 Ø2	2 (R)					\ Ø3		I ★ Ø4				

√ Ø1	, → Ø2 (R)	Ø 3	∮ Ø4
20 s	42 s	20 s	38 s
∲ø6 (R)		₩ø7	Øs
62 s		20 s	38 s

Background 2025 PM 4: Carling & Westgate SC E

	\$	۶	-	•	∢	-	•	•	1	1	Ļ	~
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		EV.	<u></u>	1	5	<u>^</u>	1		\$		ę	1
Traffic Volume (vph)	70	155	749	12	7	1890	114	10	5	110	1	70
Future Volume (vph)	70	155	749	12	7	1890	114	10	5	110	1	70
Lane Group Flow (vph)	0	237	788	13	7	1989	120	0	29	0	117	74
Turn Type	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	5	2			6			8		4	
Permitted Phases	2	2		2	6		6	8		4		4
Detector Phase	5	5	2	2	6	6	6	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.6	10.6	23.6	23.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0
Total Split (s)	24.0	24.0	83.0	83.0	59.0	59.0	59.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	20.0%	20.0%	69.2%	69.2%	49.2%	49.2%	49.2%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)		-1.6	-1.6	0.0	-1.6	-1.6	0.0		-3.0		-3.0	-3.0
Total Lost Time (s)		4.0	4.0	5.6	4.0	4.0	5.6		4.0		4.0	4.0
Lead/Lag	Lead	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	~ • •		Yes	Yes	Yes		• ·		•.	
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (S)		91.0	91.0	89.4	70.4	/0.4	68.8		21.0		21.0	21.0
Actuated g/C Ratio		0.76	0.76	0.74	0.59	0.59	0.57		0.18		0.18	0.18
V/C Rallo		0.81	0.31	0.01	0.02	1.00	0.14		0.11		0.54	0.23
Control Delay		6U. I	2.0	0.0	8.7	30.0	1.5		25.1		53.0	9.0
Queue Delay		0.0 40.1	0.1	0.0	0.0	21.0	0.0		0.0		0.0 E2.0	0.0
		00. I	Ζ.1	0.0	0.7	31.0 C	1.0		20.1		03.U D	9.0
Approach Delay		E	15 Q	A	A	20.3	A		25.1		26.2	A
Approach LOS			10.0 R			27.3			20.1		30.Z	
Ouque Length 50th (m)		25 /	11.0	0.0	03	- 51 5	0.4		2.2		25.8	0.0
Queue Length 95th (m)		#715	1/1.0	m0.0	0.5 m0.6	#350.7	m1.0		10.2		20.0	11 1
Internal Link Dist (m)		# 7 7 .5	113.0	1110.0	110.0	# 330.7 81.2	111.0		26.4		39.2	11.1
Turn Bay Length (m)		100.0	115.0	25.0	45.0	01.2	25.0		20.4		50.7	
Base Canacity (vnh)		342	2569	1020	350	1987	829		407		337	454
Starvation Can Reductn		0	758	0	0	4	027		0		0	0
Spillback Cap Reductn		0	726	0	0	0	0		2		0	0
Storage Cap Reductn		0	0	0	0	0	0		0		0	0
Reduced v/c Ratio		0.69	0.44	0.01	0.02	1.00	0.14		0.07		0.35	0.16
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 3 (3%), Referenced to phase 2	EBIL and	6:WBIL, S	tart of Gree	n								
Natural Cycle: 120												
Control Type: Actuated-Coordinated												
Maximum V/C Ratio: 1.00				L.		00.0						
Intersection Signal Delay: 25.5	0/			IN	lersection L	US: C						
Analysis Daried (min) 15	70			IC	O Level of 3	Service H						
Analysis Periou (min) 15 Volume exceeds capacity, queue i	ic theoretic	ally infinito										
 Volume exceeds capacity, queue is Ouque shown is maximum after two 		any name.										
	o cycles.	uo mou ho	longor									
# 95th percentile volume exceeds ca	apacity, que	eue may be	ionger.									
m Volume for 95th percentile queue	is metered	by upstrea	m signal.									
Splits and Phases: 4: Carling & We	stgate SC I	Ē										
∮Ø2 (R) ■	<u> </u>							∲ ø4				

402 (R)		∲ ø4	
83 s		37 s	
⋬ _{Ø5}	∲ Ø6 (R)	Ø8	
24 s	59 s	37 s	

Background 2025 PM 5: Carling & Westgate SC W

-	-	•	1
EBT	WBT	WBR	SBL
**	**	1	M
801	1833	7	25
891	1833	7	25
038	1033	7	68
NIA	NA	, Dorm	Drot
2	6	I CIIII	1101
2	0	6	4
C	6	6	1
Z	0	U	4
10.0	10.0	10.0	10.0
10.0	10.0	10.0	10.0
24.1	42.3	42.3	37.1
83.0	83.0	83.0	37.0
69.2%	69.2%	69.2%	30.8%
3.7	3.7	3.7	3.0
1.6	1.6	1.6	3.1
0.0	0.0	0.0	0.0
5.3	5.3	5.3	6.1
C-Max	C-Max	C-Max	None
102.0	102.0	102.0	10.9
0.85	0.85	0.85	0.09
0.33	0.67	0.01	0.42
1.6	5.8	1.0	46.2
0.0	0.2	0.0	0.0
1.6	6.0	1.0	46.2
А	А	А	D
1.6	6.0		46.2
A	A		D
11 7	12.3	01	11 1
m18.2	m53.7	m0.1	24.9
12.6	112.0	110.1	10.2
72.0	113.0	25.0	40.2
2882	2002	1200	107
2002	2002	1290	427
0	294	0	0
0	0	0	0
0	0	0	0
0.33	0.75	0.01	0.16
e 2:EBT a	nd 6:WBT.	Start of Gree	en
·			1
is motored	hy unstrop	m signal	
is metered	i ny uhangg	nı siyıldı.	
staate SC V	W		
	EBT *** 891 938 NA 2 2 10.0 24.1 83.0 69.2% 3.7 1.6 0.0 5.3 C-Max 102.0 0.85 0.33 1.6 0.0 1.6 A 11.7 m18.2 42.6 2882 0 0 0 0.33 .6 2882 0 0 0 0 0 3.7 1.6 A 1.7 m18.2 42.6 C-Max 1.6 A 1.6 A 1.6 A 1.6 A 1.6 A 1.6 A 1.6 A 1.6 A 1.6 A 1.7 m18.2 C C C C C C C C C C C C C	EBT WBT ♠↑ ♠↑ 891 1833 891 1833 938 1929 NA NA 2 6 2 6 10.0 10.0 24.1 42.3 83.0 83.0 69.2% 69.2% 3.7 3.7 1.6 1.6 0.0 0.0 5.3 5.3 0.33 0.67 1.6 5.8 0.33 0.67 1.6 5.8 0.0 0.2 1.6 6.0 A A 1.1.6 6.0 A A 1.6 6.0 A A 1.6 6.0 A A 1.6 0.0 2882 2882 0 294 0 0 0 0 0 0 0 0 <t< td=""><td>EBT WBT WBR ●● ● ● 891 1833 7 891 1833 7 938 1929 7 NA NA Perm 2 6 6 2 6 6 2 6 6 10.0 10.0 10.0 24.1 42.3 42.3 83.0 83.0 83.0 69.2% 69.2% 69.2% 3.7 3.7 3.7 1.6 1.6 1.6 0.0 0.0 0.0 5.3 5.3 5.3 0.33 0.67 0.01 1.6 5.8 1.0 0.0 0.2 0.0 1.6 6.0 1.0 A A A 1.6 6.0 1.0 A A A 1.6 6.0 1.0</td></t<>	EBT WBT WBR ●● ● ● 891 1833 7 891 1833 7 938 1929 7 NA NA Perm 2 6 6 2 6 6 2 6 6 10.0 10.0 10.0 24.1 42.3 42.3 83.0 83.0 83.0 69.2% 69.2% 69.2% 3.7 3.7 3.7 1.6 1.6 1.6 0.0 0.0 0.0 5.3 5.3 5.3 0.33 0.67 0.01 1.6 5.8 1.0 0.0 0.2 0.0 1.6 6.0 1.0 A A A 1.6 6.0 1.0 A A A 1.6 6.0 1.0

Splits and Phases: 5: Carling & Westgate SC W	
• → Ø2 (R)	Ø4
83 s	37 s
Ø6 (R)	

Background 2025 PM 6: Kirkwood & Carling WB

	4	←	•	Ť	Ļ	~
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	ቀ ቶሴ	ň	•	44	1
Traffic Volume (vph)	216	2680	227	602	551	410
Future Volume (vph)	216	2680	227	602	551	410
Lane Group Flow (vph)	227	3153	239	634	580	432
Turn Type	Perm	NA	pm+pt	NA	NA	Perm
Protected Phases		6	3	8	4	
Permitted Phases	6		8			4
Detector Phase	6	6	3	8	4	4
Switch Phase	Ū	Ŭ	Ŭ	0	•	•
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Snlit (s)	35.3	35.3	11.0	29.0	29.0	29.0
Total Split (s)	67.0	67.0	20.0	53.0	27.0	27.0
Total Split (%)	55.8%	55.8%	16.7%	11 2%	27.5%	27.5%
Vollow Time (c)	00.070 2 7	00.070	10.770	44.Z /0 2 2	21.370	27.370
Yellow Time (S)	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Lime (S)	2.6	2.6	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped
Act Effct Green (s)	63.0	63.0	49.0	49.0	29.4	29.4
Actuated g/C Ratio	0.52	0.52	0.41	0.41	0.24	0.24
v/c Ratio	0.52	1.02	0.41	0.41	0.24	1.05
	10.13	1.20	20.70	0.07 /E 0	14 4	04 5
	10.2	144.8	38.0	45.9	40.0	94.5
Queue Delay	0.0	0.0	0.0	1/.4	0.0	0.0
Total Delay	10.2	144.8	38.0	63.3	46.6	94.5
LOS	В	F	D	E	D	F
Approach Delay		135.8		56.3	67.1	
Approach LOS		F		E	E	
Queue Length 50th (m)	8.9	~347.1	47.4	153.4	66.1	~96.0
Queue Length 95th (m)	17.0	#373.2	m#73.8	#207.3	85.9	#158.3
Internal Link Dist (m)		113 3		144 7	73.8	
Turn Bay Length (m)	40.0	110.0		114.7	70.0	22.0
Rase Canacity (vnh)	1715	2400	210	700	021	ZZ.U /11
Staniation Can Deducto	1/15	2499	212	120	031	411
Starvation Cap Reductin	U	U	U	100	U	U
Spiliback Cap Reducth	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	1.26	0.75	1.01	0.70	1.05
Interception Cummon						
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 39 (33%), Referenced to phase	se 6:WBTL,	Start of Gre	en			
Natural Cycle: 120						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 1.26						
Intersection Signal Delay: 109.4				Int	ersection I	∩s· F
Intersection Capacity Utilization 115 6	<u>4%</u>					Sorvico H
Analysis Daried (min) 15	J 70			10	U LEVELUI .	Del VICE I I
Analysis Peniou (IIIII) 15	in the section	ollu infinito				
 volume exceeds capacity, queue 	is ineoretic	any minue.				
Queue shown is maximum after tw	vo cycles.					
# 95th percentile volume exceeds c	apacity, que	eue may be	longer.			
Queue shown is maximum after tw	vo cycles.					
m Volume for 95th percentile queue	e is metered	by upstrea	m signal.			
			-			
Splits and Phases: 6: Kirkwood & (Carling WB					
	ourning 11D					4
						Ø3
						20 s

	Ø 3	🇳 Ø4
	20 s	33 s
₩ Ø6 (R)	↑ Ø 8	
67 s	53 s	

Background 2025 PM 7: Kirkwood & Carling EB

	٦	+	*	1	1	ŕ	ţ
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations	5	4412	1	44	1	ň	*
Traffic Volume (vph)	419	1439	405	362	306	423	312
Future Volume (vph)	419	1439	405	362	306	423	312
Lane Group Flow (vph)	392	1564	426	381	322	445	328
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		2		8		7	4
Permitted Phases	2		2		8	4	
Detector Phase	2	2	2	8	8	7	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1
Total Split (s)	61.0	61.0	61.0	29.0	29.0	30.0	59.0
Total Split (%)	50.8%	50.8%	50.8%	24.2%	24.2%	25.0%	49.2%
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	2.8	2.8	1.8	2.8
Lost Time Adjust (s)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	Min	Min	Min	Min
Act Effct Green (s)	57.0	57.0	57.0	25.0	25.0	55.0	55.0
Actuated g/C Ratio	0.48	0.48	0.48	0.21	0.21	0.46	0.46
v/c Ratio	0.57	0.72	0.50	0.54	1.02	0.90	0.40
Control Delay	26.7	27.4	6.8	45.7	102.8	32.6	9.1
Queue Delay	1.1	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	28.0	6.8	45.7	102.8	32.6	9.1
LOS	С	С	А	D	F	С	А
Approach Delay		24.2		71.8			22.6
Approach LOS		С		E			С
Queue Length 50th (m)	75.1	110.7	11.7	42.4	~80.4	88.5	12.0
Queue Length 95th (m)	110.9	129.1	35.4	58.1	#136.2	#128.6	24.6
Internal Link Dist (m)		161.6		158.6			144.7
Turn Bay Length (m)	40.0				90.0		
Base Capacity (vph)	691	2182	855	706	316	497	817
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	125	263	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.82	0.50	0.54	1.02	0.90	0.40
Intersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 81 (68%) Referenced to pha	se 2. FRTL	Start of Gree	n				
Natural Cycle: 75	150 2.2012,		511				
Control Type: Actuated-Coordinated	1						
Maximum v/c Patio: 1.02							
Intersection Signal Delay: 22.5				In	torsoction L		
Intersection Capacity Litilization 115	60/					OS. C Convico II	
Analysis Dariad (min) 15	.070			IC	U Level OI 3	Service II	
Analysis Period (IIIII) 15 Volume exceeds capacity, queu	o io thoorotic	ally infinito					
~ Volume exceeds capacity, queu		any minine.					
Queue snown is maximum after t	two cycles.		1				
# 95th percentile volume exceeds	capacity, que	eue may be	longer.				
Queue shown is maximum after	two cycles.						
Splits and Phases: 7: Kirkwood &	Carling EB						
	<u> </u>					~ .	
02 (R)					¥ 3	04	
61 c					50 c		

μ 🐳 Ø2 (R)		
61 s	59 s	
	Ø7	Ø8
	30 s	29 s

Background 2025 PM 10: Carling EB/Carling & Carling WB

	+	*_	
Lane Group	EBT	WBR	
Lane Configurations	<u>^</u>	11	
Traffic Volume (vph)	1075	1868	
Future Volume (vph)	1075	1868	
Lane Group Flow (vph)	1132	1966	
Sign Control	Free		
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 72.3%			ICU Level of Service C
Analysis Period (min) 15			



Multi-Modal Level of Service - Intersections Form

-

-

Consultant	Parsons		Project		Westgate SC - Phase 1								
Scenario	Existing/Future (upto 2025)			1309 Carling Ave									
Comments			Date	Nov. 08, 2018									
]							Unlocked Rows	for Replicatin	g	
	INTERSECTIONS		Carling ar	nd Merivale			Carling and V	Vestgate SC E			Carling and	Westgate SC W	
	Crossing Side	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
	Lanes	4	3	7	6	4	0 - 2	7	7	0 - 2		6	6
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	Median > 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	No left turn / Prohib.	Protected	Protected	Protected	Protected/ Permissive	Permissive	Permissive	Permissive	No left turn / Prohib.		No left turn / Prohib.	Permissive
	Conflicting Right Turns	Permissive or yield control	No right turn	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control		Permissive or yield control	No right turn
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed		RTOR allowed	RTOR prohibited
	Ped Signal Leading Interval?	No	No	No	No	No	No	No	No	No		No	No
rian	Right Turn Channel	No Channel	No Right Turn	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel		No Channel	No Right Turn
st	Corner Radius	10-15m	10-15m	5-10m	5-10m	5-10m	5-10m	5-10m	5-10m	5-10m		5-10m	No Right Turn
Pede	Crosswalk Type	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement	Textured/coloured pavement		Textured/coloured pavement	Textured/coloured pavement
	PETSI Score	64	90	16	37	57	89	8	8	97		32	41
	Ped. Exposure to Traffic LoS	с	А	F	E	D	В	F	F	А	-	E	E
	Cycle Length												
	Effective Walk Time												
	Average Pedestrian Delay												
	Pedestrian Delay LoS	-	-	-	-	-	-	-	-	-	-	-	-
		С	A	F	E	D	В	F	F	A		E	E
	Level of Service			F			I	F				E	
	Approach From	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
	Bicycle Lane Arrangement on Approach	Pocket Bike Lane	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic	Mixed Traffic	Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP	Mixed Traffic		Curb Bike Lane, Cycletrack or MUP	Curb Bike Lane, Cycletrack or MUP
	Right Turn Lane Configuration	≤ 50 m Introduced right turn lane	Not Applicable	≤ 50 m	Not Applicable	≤ 50 m	≤ 50 m	Not Applicable	Not Applicable	≤ 50 m		Not Applicable	Not Applicable
	Right Turning Speed	≤ 25 km/h	Not Applicable	≤ 25 km/h	Not Applicable	≤ 25 km/h	≤ 25 km/h	Not Applicable	Not Applicable	≤ 25 km/h		Not Applicable	Not Applicable
O	Cyclist relative to RT motorists	В	Not Applicable	D	Not Applicable	D	D	Not Applicable	Not Applicable	D	-	Not Applicable	Not Applicable
2	Separated or Mixed Traffic	Separated	Separated	Mixed Traffic	Separated	Mixed Traffic	Mixed Traffic	Separated	Separated	Mixed Traffic		Separated	Separated
Bic	Left Turn Approach	1 lane crossed	1 lane crossed	≥ 2 lanes crossed		No lane crossed	No lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed			
	Operating Speed	> 50 to < 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h		≤ 40 km/h	≤ 40 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h	≤ 40 km/h			
	Left Turning Cyclist	D	D	F	-	В	В	F	F	В	<u> </u>	-	-
		D	D	F	-	D	D	F	F	D		-	-
	Level of Service			F			l	F				D	
.e	Average Signal Delay		≤ 40 sec	≤ 30 sec	≤ 20 sec			≤ 10 sec	≤ 20 sec			≤ 10 sec	≤ 10 sec
us		-	E	D	С	-	-	В	С	-		В	В
Tra	Level of Service			E			(C				В	
	Effective Corner Radius	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	> 15 m	< 10 m		< 10 m	
y	Number of Receiving Lanes on Departure from Intersection	≥2	1	≥2	≥2	≥2	1	≥2	≥2	≥ 2		1	
2		Α	С	Α	Α	Α	С	Α	Α	D		F	-
	Level of Service		(с			(C				F	
0	Volume to Capacity Ratio												
Auto	Level of Service			-				-				-	

Merivale and Westgate SC				Carling and Kirkwood N				Carling and Kirkwood S			
NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
3	3		3	6	4	4	3	4	5		5
Median > 2.4 m	No Median - 2.4 m		No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m		No Median - 2.4 m
Permissive	No left turn / Prohib.		Permissive	No left turn / Prohib.	Permissive	No left turn / Prohib.	Protected/ Permissive	Permissive	No left turn / Prohib.		Permissive
Permissive or yield control	Permissive or yield control		Permissive or yield control	Permissive or yield control	No right turn	Permissive or yield control	Permissive or yield control	No right turn	Permissive or yield control		Permissive or yield control
RTOR allowed	RTOR allowed		RTOR allowed	RTOR allowed	RTOR prohibited	RTOR allowed	RTOR prohibited	RTOR prohibited	RTOR prohibited		RTOR allowed
No	No		No	No	No	No	No	No	No		No
No Channel	No Channel		No Channel	No Channel	No Right Turn	No Channel	No Right Turn	No Right Turn	No Channel		Smart Channel
10-15m	10-15m		10-15m	10-15m	No Right Turn	10-15m	No Right Turn	No Right Turn	5-10m		15-25m
Textured/coloured pavement	Textured/coloured pavement		Textured/coloured pavement	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings		Zebra stripe hi-vis markings
73	81		73	28	71	61	83	74	52		44
С	В	-	С	F	С	С	В	С	D	-	E
	· ·	-		-	•			•		-	-
C	В	-	C	F	C	C	В	C	D	-	E
	С					F			E	E	
NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pocket Bike Lane	Curb Bike Lane, Cycletrack or MUP		Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic		Pocket Bike Lane
≤ 50 m Introduced right turn lane	Not Applicable		≤ 50 m	≤ 50 m	≤ 50 m	≤ 50 m	≤ 50 m	> 50 m	≤ 50 m		Bike lane shifts to the left of right turn
>25 to 30 km/h	Not Applicable		≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h		>25 to 30 km/h
С	Not Applicable	-	D	D	D	D	D	F	D	-	F
Separated	Separated	-	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	-	Separated
	1 lane crossed		No lane crossed	No lane crossed		One lane crossed		One lane crossed			≥ 2 lanes crossed
	> 50 to < 60 km/h		≤ 40 km/h	> 50 to < 60 km/h		> 50 to < 60 km/h		> 50 to < 60 km/h			> 50 to < 60 km/h
-	D	-	В	С	-	E	-	E	-	-	F
-	D	-	D	D	-	E	-	F	-	-	F
	D					E			I	=	
-	> 40 sec						> 40 sec			> 40 sec	
-	F	-	-	-	-	-	F	-	-	F	-
	F					F			I	=	
> 15 m			> 15 m	< 10 m		> 15 m			< 10 m		> 15 m
1			1	≥2		≥2			≥ 2		≥ 2
С	-	-	С	D	-	А	-	-	D	-	А
	С					D			ſ	D C	
	-					-					

Multi-Modal Level of Service - Segments Form

Consultant Scenario Comments	Parsons Existing/Future (upto 2025)	Project Date	Westgate SC - Phase 1 1309 Carling Ave Sept 11, 2018		
				Jept. 11, 201	0
SEGMENTS		Street A	Carling	Merivale	Section
	Sidewalk Width		Existing ≥ 2 m	Existing ≥ 2 m	3
	Boulevard Width		0.5 - 2 m	> 2 m	
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000	
riar	Operating Speed On-Street Parking		> 30 to 50 km/h no	> 50 to 60 km/h no	
est	Exposure to Traffic PLoS	-	С	С	-
ed	Effective Sidewalk Width				
<u> </u>	Crowding PLoS			_	_
	Level of Service		-	-	-
	Type of Cycling Facility		Curbside Bike Lane	Curbside Bike Lane	
	Number of Travel Lanes		≥ 3 each direction	≤ 1 each direction	
	Operating Speed		>50 to 70 km/h	>50 to 70 km/h	
	# of Lanes & Operating Speed LoS		D	C	-
e	Bike Lane (+ Parking Lane) Width		≥ 1.8 m	≥ 1.8 m	
cyc	Bike Lane Width LoS	-	А	A	-
ä	Bike Lane Blockages		Rare	Rare	
	Median Refuge Width (no median = < 1.8 m)				_
	No. of Lanes at Unsignalized Crossing				
	Sidestreet Operating Speed				
	Unsignalized Crossing - Lowest LoS	,	-	-	-
	Level of Service		-	-	-
ij	Facility Type		Mixed Traffic	Mixed Traffic	
ans	Friction or Ratio Transit:Posted Speed	D	Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8	
Ĕ	Level of Service		D	D	-
×	Truck Lane Width		≤ 3.3 m	≤ 3.3 m	
on.	I ravel Lanes per Direction	D	>1	1	
F	Level of Service		С	D	-
Auto	Level of Service	Not Appli	cable		



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 & add descriptions, explanations or 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	
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	
	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)	
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 weather protection through canopies, colonnades, and other design elements wherever possible (see Official <i>Plan policy 4.3.12</i>)	

	TDM-s	upportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references
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)	
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)	
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)	
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	
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	
	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	
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	upportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references
	2.	WALKING & CYCLING: END-OF-TRIP FACILI	TIES
	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)	
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)	
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 <i>(see Zoning By-law Section 111)</i>	
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	
	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)	
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	
	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)	
	3.	TRANSIT	
	3.1	Customer amenities	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	<i>N∕A</i>
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	<i>□ N/A</i>
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	□ N⁄A

	TDM-s	supportive design & infrastructure measures: Residential developments	Check if completed & add descriptions, explanations or plan/drawing references
	4.	RIDESHARING	
	4.1	Pick-up & drop-off facilities	
BASIC	4.1.1	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	
	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>	□ N⁄A
	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	
	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	
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	
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)	

TDM Measures Checklist:

*

Non-Residential Developments (office, institutional, retail or industrial)

Legend

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

The measure is one of the most dependably effective tools to encourage the use of sustainable modes

	TDM	measures: Non-residential developments	Check if proposed & add descriptions
	1.	TDM PROGRAM MANAGEMENT	
	1.1	Program coordinator	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	
	1.2	Travel surveys	
BETTER	1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	
	2.	WALKING AND CYCLING	
	2.1	Information on walking/cycling routes & destin	ations
BASIC	2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances	
	2.2	Bicycle skills training	
		Commuter travel	
BETTER ★	2.2.1	Offer on-site cycling courses for commuters, or subsidize off-site courses	
	2.3	Valet bike parking	
		Visitor travel	
BETTER	2.3.1	Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	

	TDM	measures: Non-residential developments	Check if proposed & add descriptions
	3.	TRANSIT	
	3.1	Transit information	
BASIC	3.1.1	Display relevant transit schedules and route maps at entrances	
BASIC	3.1.2	Provide online links to OC Transpo and STO information	
BETTER	3.1.3	Provide real-time arrival information display at entrances	
	3.2	Transit fare incentives	
		Commuter travel	
BETTER	3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	
BETTER 1	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	
		Visitor travel	
BETTER	3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	
	3.3	Enhanced public transit service	
		Commuter travel	
BETTER	3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	
		Visitor travel	
BETTER	3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	
	3.4	Private transit service	
		Commuter travel	
BETTER	3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	
		Visitor travel	
BETTER	3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	

	TDM	measures: Non-residential developments	Check if proposed & add descriptions
	4.	RIDESHARING	
	4.1	Ridematching service	
		Commuter travel	
BASIC	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	
	4.2	Carpool parking price incentives	
		Commuter travel	
BETTER	4.2.1	Provide discounts on parking costs for registered carpools	
	4.3	Vanpool service	
		Commuter travel	
BETTER	4.3.1	Provide a vanpooling service for long-distance commuters	
	5.	CARSHARING & BIKESHARING	
	5.1	Bikeshare stations & memberships	
BETTER	5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	
		Commuter travel	
BETTER	5.1.2	Provide employees with bikeshare memberships for local business travel	
	5.2	Carshare vehicles & memberships	
		Commuter travel	
BETTER	5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	
BETTER	5.2.2	Provide employees with carshare memberships for local business travel	
	6.	PARKING	
	6.1	Priced parking	
		Commuter travel	
BASIC	6.1.1	Charge for long-term parking (daily, weekly, monthly)	
BASIC	6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	
		Visitor travel	
BETTER	6.1.3	Charge for short-term parking (hourly)	

TDM Measures Checklist Version 1.0 (30 June 2017)

	TDM	measures: Non-residential developments	Check if proposed & add descriptions
	7.	TDM MARKETING & COMMUNICATIONS	
	7.1	Multimodal travel information	
		Commuter travel	
BASIC 7	7.1.1	Provide a multimodal travel option information package to new/relocating employees and students	
		Visitor travel	
BETTER 1	7.1.2	Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	
	7.2	Personalized trip planning	
		Commuter travel	
BETTER	7.2.1	Offer personalized trip planning to new/relocating employees	
	7.3	Promotions	
		Commuter travel	
BETTER	7.3.1	Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	
	8.	OTHER INCENTIVES & AMENITIES	
	8.1	Emergency ride home	
		Commuter travel	
BETTER	8.1.1	Provide emergency ride home service to non-driving commuters	
	8.2	Alternative work arrangements	
		Commuter travel	
BASIC 1	8.2.1	Encourage flexible work hours	
BETTER	8.2.2	Encourage compressed workweeks	
BETTER	8.2.3	Encourage telework	
	8.3	Local business travel options	
		Commuter travel	
BASIC 1	8.3.1	Provide local business travel options that minimize the need for employees to bring a personal car to work	
	8.4	Commuter incentives	
		Commuter travel	
BETTER	8.4.1	Offer employees a taxable, mode-neutral commuting allowance	
	8.5	On-site amenities	
		Commuter travel	
BETTER	8.5.1	Provide on-site amenities/services to minimize mid-day or mid-commute errands	

TDM Measures Checklist:

t

Residential Developments (multi-family, condominium or subdivision)

Legend

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

The measure is one of the most dependably effective tools to encourage the use of sustainable modes

	TD	M measures: Residential developments	Check if proposed & add descriptions					
	1.	TDM PROGRAM MANAGEMENT						
	1.1	Program coordinator						
BASIC	★ 1.1.	1 Designate an internal coordinator, or contract with an external coordinator						
	1.2	Travel surveys						
BETTER	1.2.	 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress 	lated ns,					
	2.	WALKING AND CYCLING						
	2.1	Information on walking/cycling routes & destinations						
BASIC	2.1.	 Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium) 	☐ Not at this time, but a possibility to display in the future.					
	2.2	Bicycle skills training						
BETTER	2.2.	 Offer on-site cycling courses for residents, or subsidize off-site courses 						

		TDM	measures: Residential developments	Check if proposed & add descriptions			
		3.	TRANSIT				
		3.1	Transit information				
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances (multi-family, condominium)	Possibly, the lobby will have screens but the content has yet to be decided.			
BETTER		3.1.2	Provide real-time arrival information display at entrances (multi-family, condominium)				
		3.2	Transit fare incentives				
BASIC	*	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit				
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in				
		3.3	Enhanced public transit service				
BETTER	*	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels <i>(subdivision)</i>				
		3.4	Private transit service				
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)				
		4.	CARSHARING & BIKESHARING				
		4.1	Bikeshare stations & memberships				
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (<i>multi-family</i>)				
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized <i>(multi-family)</i>				
		4.2	Carshare vehicles & memberships				
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents				
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized				
		5.	PARKING				
		5.1	Priced parking				
BASIC	*	5.1.1	Unbundle parking cost from purchase price (condominium)	□ N/A			
BASIC	*	5.1.2	Unbundle parking cost from monthly rent (multi-family)	X			

	TDM	measures: Residential developments	Check if proposed & add descriptions
	6.	TDM MARKETING & COMMUNICATION	S
	6.1	Multimodal travel information	
BASIC	★ 6.1.1	Provide a multimodal travel option information package to new residents	X
	6.2	Personalized trip planning	
BETTER	★ 6.2.1	Offer personalized trip planning to new residents	

Appendix H SYNCHRO 2020 Total Traffic Analysis

Future 2020 AM 2: Merivale & Westgate SC

	≯	•	†	Ŧ	- ✓			
Lane Group	EBL	NBL	NBT	SBT	SBR			
Lane Configurations	¥	ň	*	*	1			
Traffic Volume (vph)	31	48	160	479	68			
Future Volume (vph)	31	48	160	479	68			
Lane Group Flow (vph)	62	51	168	504	72			
Turn Type	Prot	Perm	NA	NA	Perm			
Protected Phases	4		2	6				
Permitted Phases		2			6			
Detector Phase	4	2	2	6	6			
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0			
Minimum Split (s)	23.5	23.8	23.8	35.8	35.8			
Total Split (s)	28.0	72.0	72.0	72.0	72.0			
Total Split (%)	28.0%	72.0%	72.0%	72.0%	72.0%			
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3			
All-Red Time (s)	2.2	2.5	2.5	2.5	2.5			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			
Total Lost Time (s)	5.5	5.8	5.8	5.8	5.8			
Lead/Lag	0.0	0.0	0.0	0.0	0.0			
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	C-Max			
Act Effct Green (s)	10.2	82.7	82.7	82.7	82.7			
Actuated q/C Ratio	0.10	0.83	0.2.7	02.7	0.83			
v/c Ratio	0.10	0.03	0.03	0.03	0.05			
Control Delay	30.4	0.07	0.11	3.6	0.00			
Oueue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay	30.4	0.0	0.0	3.6	0.0			
	50.4 C	Δ	Δ	Δ	Δ			
Approach Delay	30.4	Л	0.8	23	Л			
Approach LOS	JU.4		Δ	Δ				
Ouque Length 50th (m)	60	0.2	0.8	22.7	0.0			
Oueue Length 95th (m)	18.0	1.2	2.1	22.7	2.5			
Internal Link Dist (m)	10.0	1.5	9. I 9. J	58.0	2.0			
Turn Bay Length (m)	-U.U	40.0	00.4	30.0	40.0			
Base Canacity (ynh)	200	601	1/176	1/176	1267			
Starvation Can Reductn	0	071	0	0	0			
Snillback Can Reductn	0	0	0	0	0			
Storage Can Reducto	0	0	0	0	0			
Reduced v/c Ratio	0 16	0.07	0 11	0.34	0 06			
	0.10	0.07	0.11	0.54	0.00			
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 100								
Offset: 35 (35%), Referenced to phase	e 2:NBTL a	ind 6:SBT, S	Start of Gree	en				
Natural Cycle: 60								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.34								
Intersection Signal Delay: 4.6				In	tersection LOS:	A		
Intersection Capacity Utilization 57.5%	,)			IC	U Level of Serv	ice B		
Analysis Period (min) 15								
Splits and Phases: 2: Merivale & We	estgate SC	;						
1 (n)							1 an	
1 Ø2 (R)							- Ø4	

Ø2 (R) 72 s Ø6 (R) 72 s Ø6 (R)
Future 2020 AM 3: Merivale & Carling

	-	4	+	•	1	1	*	Ļ	~	
Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u> ተተኑ</u>	٦ ۲	<u> ተተኑ</u>	٦	•	1	۲.	•	1	
Traffic Volume (vph)	805	149	624	224	198	237	26	227	208	
Future Volume (vph)	805	149	624	224	198	237	26	227	208	
Lane Group Flow (vph)	922	157	691	236	208	249	27	239	219	
Turn Type	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2	1	6	3	8		7	4		
Permitted Phases	0	6	1	2	0	8	7	4	4	
Detector Phase	2	I	6	3	8	8	/	4	4	
SWICH Phase	10.0	ΕO	10.0	ΕO	10.0	10.0	ΕO	10.0	10.0	
Minimum Iniliai (S)	10.0	5.0	10.0	5.U 11.2	10.0 7 7	10.0	5.U 11.2	10.0 7 7	10.0	
Total Split (s)	29.0	10.4	29.0 //1.2	21.0	37.7 A7 A	37.7	11.3	57.7 777	31.1 27 7	
Total Split (%)	30.3	11.0%	41.3	21.0	47.4	47.4	11.3	37.7%	37.7%	
Vellow Time (s)	30.370	37	41.370	21.070	47.470	47.470	22	21.170	37.770	
All-Red Time (s)	23	17	23	3.0	3.5	3.3	3.0	3.3	3.4	
Lost Time Adjust (s)	-2.0	-1.4	-2.0	-23	-27	-27	-23	-27	-27	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	1.0	Laa	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	None	C-Max	None	None	None	None	None	None	
Act Effct Green (s)	34.4	45.4	45.4	19.9	36.3	36.3	13.7	22.7	22.7	
Actuated g/C Ratio	0.34	0.45	0.45	0.20	0.36	0.36	0.14	0.23	0.23	
v/c Ratio	0.56	0.63	0.32	0.70	0.32	0.36	0.12	0.59	0.43	
Control Delay	27.9	42.8	19.0	49.8	25.9	5.1	33.4	35.9	4.1	
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	28.1	42.8	19.0	49.8	25.9	5.1	33.4	35.9	4.1	
LOS	С	D	В	D	С	А	С	D	А	
Approach Delay	28.1		23.4		26.6			21.4		
Approach LOS	С		С		С			С		
Queue Length 50th (m)	28.6	18.2	30.6	41.5	22.9	0.0	5.1	32.4	0.0	
Queue Length 95th (m)	78.4	#42.6	45.0	#83.1	48.7	16.0	12.0	39.3	7.5	
Internal Link Dist (m)	89.4	00.0	139.3	10.0	131.8		40.0	88.4	70.0	
Turn Bay Length (m)	1450	90.0	2101	40.0	700	707	40.0	(01	/0.0	
Stervetion Con Deductr	1052	249	2191	341	/90	/8/	232	601	048	
Stal Valion Cap Reductin	150	0	0	0	0	0	0	0	0	
Storage Cap Reductin	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.61	0.63	0 32	0 69 0	0.26	0 32	0 12	0.40	0.34	
	0.01	0.05	0.32	0.07	0.20	0.52	0.12	0.40	0.54	
Intersection Summary										
Cycle Length: 100										
Actuated Cycle Length: 100										
Offset: 84 (84%), Referenced to phase	e 2:EBT an	d 6:WBTL, S	Start of Gre	en						
Natural Cycle: 90										
Control Type: Actuated-Coordinated										
Maximum V/C Ratio: 0.70				اسا	ana akian 1 (
Intersection Signal Delay: 25.3				Int	ersection LC	JS: C				
Analysis Deried (min) 15)			IC	U Level of S	Service D				
# 95th percentile volume exceeds ca	nacity due	elle may be	longer							
Queue shown is maximum after two	o cycles.	eue may be	longer.							
Splits and Phases: 3: Merivale & Ca	Irling									
→Ø2 (R)		√ ø	1	🌵 ø4					1 0	3
30.3 s		11 s		37.7 s					21 s	
4 √ ac (p)				†						
v ▼ Ø6 (R)				r%Ø8						* Ø7
41.3 s				47.4 s						11.3 s

Future 2020 AM 4: Carling & Westgate SC E

	1	٦	→	4	-	•	1	1	Ŧ	~	
Lane Group	EBU	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations		ă	<u> ተተጉ</u>	۲.	<u> ተተኑ</u>		4		र्स	1	
Traffic Volume (vph)	99	108	1210	7	819	12	2	28	1	43	
Future Volume (vph)	99	108	1210	7	819	12	2	28	1	43	
Lane Group Flow (vph)	0	218	1289	7	988	0	29	0	30	45	
Turn Type	Perm	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases			2		6		8		4		
Permitted Phases	2	2		6		8		4		4	
Detector Phase	2	2	2	6	6	8	8	4	4	4	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	23.6	23.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0	
Total Split (s)	63.0	63.0	63.0	63.0	63.0	37.0	37.0	37.0	37.0	37.0	
Total Split (%)	63.0%	63.0%	63.0%	63.0%	63.0%	37.0%	37.0%	37.0%	37.0%	37.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0	
Lost Time Adjust (s)		-1.6	-1.6	-1.6	-1.6		-3.0		-3.0	-3.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		79.2	79.2	79.2	79.2		17.0		17.0	17.0	
Actuated g/C Ratio		0.79	0.79	0.79	0.79		0.17		0.17	0.17	
v/c Ratio		0.58	0.33	0.03	0.26		0.11		0.14	0.16	
Control Delay		21.6	7.8	6.1	5.6		20.8		33.4	9.8	
Queue Delay		0.0	0.2	0.0	0.1		0.0		0.0	0.0	
Total Delay		21.6	8.0	6.1	5.8		20.8		33.4	9.8	
LOS		С	A	А	A		С		С	А	
Approach Delay			10.0		5.8		20.8		19.3		
Approach LOS			A		A		С		В		
Queue Length 50th (m)		27.2	33.4	0.3	18.2		2.6		5.3	0.0	
Queue Length 95th (m)		#77.6	79.3	m1.6	69.4		8.1		10.4	7.4	
Internal Link Dist (m)			112.0		89.4		10.8		48.4		
Turn Bay Length (m)		70.0		36.0							
Base Capacity (vph)		378	3850	271	3761		485		431	519	
Starvation Cap Reductn		0	1345	0	1497		0		0	0	
Spillback Cap Reductn		0	0	0	0		0		0	0	
Storage Cap Reductn		0	0	0	0		0		0	0	
Reduced v/c Ratio		0.58	0.51	0.03	0.44		0.06		0.07	0.09	
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length: 100											
Offset: 0 (0%), Referenced to phase 2	2:EBTL and	6:WBTL, S	tart of Gree	n							
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.58											
Intersection Signal Delay: 8.7				In	tersection L	OS: A					
Intersection Capacity Utilization 73.99	%			IC	U Level of S	Service D					
Analysis Period (min) 15											
# 95th percentile volume exceeds c	apacity, qu	eue may be	longer.								
Queue shown is maximum after tw	vo cycles.										
m Volume for 95th percentile queue	e is metered	by upstrea	m signal.								
Splits and Phases: 4: Carling & We	estgate SC	E									
^{ss} ø2 (R)							\$ Ø4				
63 s							37 s				
+ ac (p)											
▼ Ø6 (R)							1 Ø8				

Future 2020 AM 5: Carling & Westgate SC W

	-	-	\
Lane Group	EBT	WBT	SBL
Lane Configurations	***	#†1	¥
Traffic Volume (vph)	1027	1112	13
Future Volume (vph)	1027	1112	13
Lane Group Flow (vph)	1081	1185	34
Turn Type	NA	NA	Prot
Protected Phases	2	6	4
Permitted Phases	-		•
Detector Phase	2	6	4
Switch Phase	-		•
Minimum Initial (s)	10.0	10.0	10.0
Minimum Split (s)	24.0	48.3	37.1
Total Split (s)	62.0	40.0 62.0	38.0
Total Split (%)	62.0%	62.0%	38.0%
Vellow Time (s)	2.070	27	30.070
All Dod Time (s)	J./ 1.6	J./ 1 4	3.0
Lost Time Adjust (s)	1.0	1.0	0.0
LUST TIME AUJUST (S)	U.U E 0	0.0	0.0
Lood/Log	5.3	5.3	0.1
Lead Lag Optimize2			
Leau-Lag Optimize?	0.14	C Maria	Nen
	C-Max	C-Max	None
Act EffCt Green (S)	87.2	87.2	10.0
Actuated g/C Ratio	0.87	0.87	0.10
V/C Ratio	0.25	0.28	0.19
Control Delay	1.0	3.9	26.5
Queue Delay	0.0	0.1	0.0
Total Delay	1.0	4.0	26.5
LOS	A	A	С
Approach Delay	1.0	4.0	26.5
Approach LOS	A	A	С
Queue Length 50th (m)	8.2	13.9	2.5
Queue Length 95th (m)	m7.7	59.4	11.6
Internal Link Dist (m)	32.6	112.0	92.7
Turn Bay Length (m)			
Base Capacity (vph)	4245	4237	527
Starvation Cap Reductn	0	1627	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.25	0.45	0.06
Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 60 (60%) Referenced to ph	ase 2.FBT an	d 6∙WRT S	tart of Green
Natural Cycle: 90		u 0.wb1, 0	
Control Type: Actuated Coordinated	Ч		
Maximum v/c Patio: 0.29	u		
Intersection Signal Delay: 2.0			
Intersection Capacity Litilization 40	00/		
Applying Daried (min) 15	0 70		
Analysis Period (Min) 15	uo lo motore d	by unotro a	micianal
in volume for 95th percentile que	ue is metered	by upstrea	n signal.
Splits and Phases: 5: Carling & V	Vestgate SC \	W	
	J ·····		

● ● Ø2 (R)	Ø4
62 s	38 s
4 —Ø6 (R)	
62 s	

Future 2020 AM 6: Kirkwood & Carling WB

	•	-	1	1	Ļ	-
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations	ካካ	**t	ħ	*	44	1
Traffic Volume (vph)	215	1576	280	319	402	360
Future Volume (vph)	215	1576	280	319	402	360
Lane Group Flow (vph)	226	1925	295	336	423	379
Turn Type	Perm	NA	pm+pt	NA	NA	Perm
Protected Phases		6	3	8	4	
Permitted Phases	6		8			4
Detector Phase	6	6	3	8	4	4
Switch Phase	0	Ū	Ū	0	•	
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Snlit (s)	35.3	35.3	11 0	29.0	29.0	29.0
Total Split (s)	51.0	51.0	17.0	10 0	27.0	27.0
Total Split (%)	51.0%	51.0%	17.0%	47.0	32.0	32.0
Vollow Time (c)	01.070 7 7	31.070	17.070	47.070	32.070	32.070
All Ded Time (c)	3.7	3.7	3.3	3.3	5.5	3.3
All-Ked Time (S)	2.6	2.6	2.7	2.7	2.7	2.7
LOST TIME Adjust (S)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped
Act Effct Green (s)	50.7	50.7	41.3	41.3	26.9	26.9
Actuated g/C Ratio	0.51	0.51	0.41	0.41	0.27	0.27
v/c Ratio	0.14	0.80	0.75	0.46	0.46	0.81
Control Delay	12.1	19.3	23.8	11.4	32.2	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	19.3	23.8	11.4	32.2	39.9
LOS	B	B	C	B	C	D
Approach Delay	D	18.6	U	17.2	35.9	U
Approach LOS		R		R	D	
Ouque Length 50th (m)	0.1	60.2	20.0	24.0	25 A	F0 6
Queue Length 30th (III)	7.1 22.7	09.Z	20.9 m20.1	24.0 m21.6	30.4 /0.5	#05 7
Internal Link Dist (m)	22.1	127.0	11129.1	151.0	49.0	# 7 3.7
Turn Dov Longth (m)	40.0	346.9		152.2	/3.8	22.0
Turri Bay Lengin (m)	40.0	0410	400	000	040	22.0
Base Capacity (vpn)	1659	2412	438	802	949	481
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.80	0.67	0.42	0.45	0.79
Intersection Summany						
Cycle Length: 100						
Actuated Cycle Length: 100						
Offset: 0 (0%), Referenced to phase 6	:WBTL, St	art of Green				
Natural Cycle: 80						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.81						
Intersection Signal Delay: 22.2				Int	tersection LC	DS: C
Intersection Capacity Utilization 98.6%)			IC	U Level of S	Service F
Analysis Period (min) 15						
# 95th percentile volume exceeds ca	apacity, que	eue may be	longer.			
Queue shown is maximum after two	n cycles	· · · · · · · · · · · · · · · · · · ·				
m Volume for 95th percentile queue	is metered	by upstream	n signal			
		~J apoulou	signui.			
Splits and Phases: 6: Kirkwood & C	arling WB					
						34
					V S	04
					32 s	
					⊲† ,	70
₩ Ø6 (K)					1	<i>0</i> 8

Future 2020 AM 7: Kirkwood & Carling EB

	٦	+	*	1	1	*	Ļ
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations	N.	4412	1	**	1	ň	•
Traffic Volume (vph)	187	2040	422	384	399	484	224
Future Volume (vph)	187	2040	422	384	399	484	224
Lane Group Flow (vph)	177	2167	444	404	420	509	236
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		2		8		7	4
Permitted Phases	2		2		8	4	
Detector Phase	2	2	2	8	8	7	4
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1
Total Split (s)	48.8	48.8	48.8	30.0	30.0	21.2	51.2
Total Split (%)	48.8%	48.8%	48.8%	30.0%	30.0%	21.2%	51.2%
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3
All-Red Time (s)	2.5	2.5	2.5	2.8	2.8	1.8	2.8
Lost Time Adjust (s)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag				Lead	Lead	Lag	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	C-Max	Min	Min	Min	Min
Act Effct Green (s)	44.8	44.8	44.8	26.0	26.0	47.2	47.2
Actuated g/C Ratio	0.45	0.45	0.45	0.26	0.26	0.47	0.47
v/c Ratio	0.27	1.05	0.52	0.46	1.07	0.99	0.28
Control Delay	18.8	62.9	5.7	33.1	101.1	68.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	62.9	5.7	33.1	101.1	68.0	12.8
LOS	В	E	A	С	F	E	В
Approach Delay		51.0		67.8			50.5
Approach LOS		D		E			D
Queue Length 50th (m)	24.4	~178.5	7.1	34.6	~90.4	79.9	19.7
Queue Length 95th (m)	41.2	#209.3	28.4	48.7	#147.1	#143.7	53.0
Internal Link Dist (m)		164.7		158.6			152.2
Turn Bay Length (m)	40.0				90.0		
Base Capacity (vph)	652	2062	855	881	394	512	842
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	1.05	0.52	0.46	1.07	0.99	0.28
Intersection Summary							
Cycle Length: 100							
Actuated Cycle Length: 100							
Offset: 19 (19%) Referenced to pha	ISP 2. FRTL	Start of Gree	n				
Natural Cycle: 110	130 Z.LDTL, (
Control Type: Actuated Coordinated							
Maximum v/c Ratio: 1.07							
Intersection Signal Delay: 54.1				Int	torsoction L	0S· D	
Intersection Canacity Litilization 08.6	50/					OS. D Sonvico E	
Analysis Dariad (min) 15	J 70			IC	U Level UI	DEIVICE I	
Analysis Feriod (min) 15	a is theoretic	ally infinito					
Queue shown is maximum after t		any minine.					
# 95th percentile volume exceeds	canacity due	aua may ha	longer				
# 95th percentile volume exceeds	tapacity, que	eue may be	ionger.				
	WU LYLIES.						
Splits and Phases: 7: Kirkwood &	Carling EB						
🗢 Ø2 (R)					04		
48.8 s					51.2 s		
					[∲] Ø8		

Future 2020 AM 10: Carling EB/Carling & Carling WB

	+	*	
Lane Group	EBT	WBR	
Lane Configurations	***	777	
Traffic Volume (vph)	1093	1114	
Future Volume (vph)	1093	1114	
Lane Group Flow (vph)	1151	1173	
Sign Control	Free		
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 30.8%			ICU Level of Service A
Analysis Period (min) 15			

Future 2020 PM 2: Merivale & Westgate SC

	٨	-	†	ţ	1	
Lane Group	EBL	NBL	NBT	SBT	SBR	
Lane Configurations	M	100		*	1	
Traffic Volume (vph)	82	8/	102	/70	00	
Future Volume (vph)	82	84	192	470	90	
Lane Group Flow (vph)	125	04 QQ	202	/05	10/	
	Perm	Perm	NIΔ	NΔ	Perm	
Protected Phases	I CIIII	I CIIII	- 2	6	I CIIII	
Pormitted Phases	Λ	2	2	0	6	
Notoctor Phase	4 /	2	2	6	6	
Switch Dhase	4	2	2	U	0	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.0 22 E	24.0	24.0	25.0	10.0	
	23.0	24.0	24.0	30.0	33.0	
Total Split (%)	30.0	/4.0	/4.0	/4.0	/4.0	
i utai Spiit (%)	32.1%	07.3%	07.5%	07.5%	07.5%	
	3.3	3.3	3.3	3.3	3.3	
All-Red Lime (s)	2.2	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Iotal Lost Time (s)	5.5	5.8	5.8	5.8	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	15.2	83.5	83.5	83.5	83.5	
Actuated g/C Ratio	0.14	0.76	0.76	0.76	0.76	
v/c Ratio	0.69	0.14	0.15	0.37	0.09	
Control Delay	45.2	1.4	1.1	5.8	1.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.2	1.4	1.1	5.8	1.1	
LOS	D	А	А	А	А	
Approach Delay	45.3		1.2	5.0		
Approach LOS	D		A	A		
Oueue Length 50th (m)	27.6	0.9	2.0	28.9	0.0	
Queue Length 95th (m)	47.7	m2.0	3.8	56.0	4.6	
Internal Link Dist (m)	28.7	1112.0	87.9	55.0	1.0	
Turn Bay Length (m)	20.7	40.0	01.7	55.1	40.0	
Rase Canacity (upb)	106	40.0	125/	125/	40.0	
Starvation Can Doducto	400	020	1304	1554	0	
Snillback Cap Reductin	0	0	0	0	0	
Spiniback Cap Reductin	0	0	0	0	0	
Storage Cap Reducth	0	0 1 4	0 15	0	0	
Reduced V/C Ratio	0.38	0.14	0.15	0.37	0.09	
Intersection Summary						
Cycle Length: 110						
Actuated Cycle Length: 110						
Offset: 90 (82%), Referenced to phase	se 2:NBTL a	nd 6:SBT	Start of Gree	'n		
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio 0.60						
Intersection Signal Delay: 10.0				Int	forsoction LO	C · D
Intersection Canacity Litilization EQ.4	0/_					J. D prvice B
Analysis Doriod (min) 15	/0			iC	O LEVELUI SE	
Analysis Periou (IIIII) 15	o ic motored	by upotroo	n cianal			
in volume for your percentile queue	e is metered	by upsileal	ii siyiidi.			

Splits and Phases: 2: Merivale & Westgate SC $\swarrow g_4$ 74 s $\swarrow g_6$ (R) 74 s

Future 2020 PM 3: Merivale & Carling

	-	4	-	1	Ť	1	>	Ļ	~	
Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u> </u>	٦.	<u>ቀ</u> ቀሴ	۲	•	1	ň	•	1	
Traffic Volume (vph)	864	349	1439	176	209	185	51	281	188	
Future Volume (vph)	864	349	1439	176	209	185	51	281	188	
Lane Group Flow (vph)	1029	367	1557	185	220	195	54	296	198	
Turn Type	NA	pm+pt	NA	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2	1	6	3	8		7	4		
Permitted Phases		6				8			4	
Detector Phase	2	1	6	3	8	8	7	4	4	
Switch Phase										
Minimum Initial (s)	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	29.0	10.4	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Total Split (s)	30.1	25.0	55.1	17.2	41.7	41.7	13.2	37.7	37.7	
Total Split (%)	27.4%	22.7%	50.1%	15.6%	37.9%	37.9%	12.0%	34.3%	34.3%	
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	1./	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
Lost Time Adjust (s)	-2.0	-1.4	-2.0	-2.3	-2.1	-2.1	-2.3	-2.1	-2.1	
Lood/Log	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	
	res C Mey	res	C Mov	res	res	res	res	res	res	
Act Effet Croop (s)	C-IVIAX	50 2	C-IVIAX	12.2	22.1	22.1		26.5	26.5	
Actuated a/C Patio	0.20	0.52	0.5	13.Z	0.20	0.20	0.9	20.0	20.0	
v/c Patio	0.30	0.00	0.55	0.12	0.30	0.30	0.00	0.24	0.24	
Control Delay	26.9	62.6	10.01	0.71	22.1	5.5	61 /	39.6	7.7	
	20.7	02.0	0.1	72.J	0.0	0.0	01.4	0.7	0.0	
Total Delay	27.8	62.6	20.0	92.5	33.1	5.5	61.4	40.3	7.7	
	27.0 C	02.0 F	20.0 C.	72.5 F	00.1 C	З.5 Д	F	-+0.5 D	Α	
Approach Delay	27.8	-	28.1	•	42.4	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-	30.6	71	
Approach LOS	С		С		D			С		
Queue Length 50th (m)	48.2	56.9	81.7	39.8	38.7	0.0	11.1	50.4	2.6	
Queue Length 95th (m)	#100.8	#116.9	110.2	#80.7	55.5	14.7	23.9	54.1	12.5	
Internal Link Dist (m)	81.2		139.3		110.3			87.9		
Turn Bay Length (m)		90.0		40.0			40.0		70.0	
Base Capacity (vph)	1452	409	2569	203	611	628	141	546	554	
Starvation Cap Reductn	185	0	0	0	0	0	0	68	0	
Spillback Cap Reductn	0	0	127	0	0	0	0	0	4	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.81	0.90	0.64	0.91	0.36	0.31	0.38	0.62	0.36	
Intersection Summary										
Cycle Length: 110										
Actuated Cycle Length: 110										
Offset: 7 (6%). Referenced to phase 2	2:EBT and (5:WBTL, Sta	rt of Green							
Natural Cycle: 100										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.91										
Intersection Signal Delay: 30.5				Int	ersection LC	DS: C				
Intersection Capacity Utilization 85.09	%			IC	U Level of S	Service E				
Analysis Period (min) 15										
# 95th percentile volume exceeds c	apacity, que	eue may be	longer.							
Queue shown is maximum after tw	vo cycles.									
Splits and Phases: 3: Merivale & C	arling									
→Ø2 (R)		Ø 1			1	3	4	Ø4		
30.1 s		25 s			17.2 s	_	37.	7 s		
Ø6 (R)						7	108			
55.1 c					13.2 s		41.7 s			

Future 2020 PM 4: Carling & Westgate SC E

	4	۶	-	∢	-	1	1	1	Ŧ	~	
Lane Group	EBU	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations		ă	<u> ተተኑ</u>	۲.	<u> ተተኑ</u>		4		र्स	1	
Traffic Volume (vph)	70	188	699	7	1763	10	5	115	1	96	
Future Volume (vph)	70	188	699	7	1763	10	5	115	1	96	
Lane Group Flow (vph)	0	272	749	7	1982	0	29	0	122	101	
Turn Type	pm+pt	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm	
Protected Phases	5	5	2		6		8		4		
Permitted Phases	2	2		6		8		4		4	
Detector Phase	5	5	2	6	6	8	8	4	4	4	
Switch Phase											
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	10.6	10.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0	
Total Split (s)	25.0	25.0	73.0	48.0	48.0	37.0	37.0	37.0	37.0	37.0	
Total Split (%)	22.7%	22.7%	66.4%	43.6%	43.6%	33.6%	33.6%	33.6%	33.6%	33.6%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0	
Lost Time Adjust (s)		-1.6	-1.6	-1.6	-1.6		-3.0		-3.0	-3.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0		4.0		4.0	4.0	
Lead/Lag	Lag	Lag		Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes						
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		81.3	81.3	56.3	56.3		20.7		20.7	20.7	
Actuated g/C Ratio		0.74	0.74	0.51	0.51		0.19		0.19	0.19	
v/c Ratio		0.70	0.21	0.02	0.81		0.10		0.53	0.28	
Control Delay		43.9	2.7	11.4	16.0		22.0		46.9	8.3	
Queue Delay		0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay		43.9	2.7	11.4	16.0		22.0		46.9	8.3	
LOS		D	A	В	В		С		D	А	
Approach Delay			13.7		15.9		22.0		29.4		
Approach LOS			В		В		С		С		
Queue Length 50th (m)		43.2	5.7	0.4	47.5		2.9		24.3	0.0	
Queue Length 95th (m)		#77.4	10.4	m1.0	#190.1		9.2		36.5	11.9	
Internal Link Dist (m)			113.0		81.2		26.4		38.7		
Turn Bay Length (m)		70.0		36.0							
Base Capacity (vph)		388	3583	309	2459		444		369	508	
Starvation Cap Reductn		0	0	0	0		0		0	0	
Spillback Cap Reductn		0	102	0	0		0		0	0	
Storage Cap Reductn		0	0	0	0		0		0	0	
Reduced V/c Ratio		0.70	0.22	0.02	0.81		0.07		0.33	0.20	
Intersection Summary											
Cycle Length: 110											
Actuated Cycle Length: 110											
Offset: 7 (6%), Referenced to phase	2:EBTL and	6:WBTL, S	tart of Gree	n							
Natural Cycle: 100											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.81											
Intersection Signal Delay: 16.2				In	tersection L	OS: B					
Intersection Capacity Utilization 102.	2%			IC	CU Level of S	Service G					
Analysis Period (min) 15											
# 95th percentile volume exceeds	capacity, que	eue may be	longer.								
Queue shown is maximum after the	wo cycles.										
m Volume for 95th percentile queu	e is metered	by upstrea	m signal.								
Splits and Phases: 4: Carling & W	estgate SC I	-									
							*	Ø4			
73 s							37	s			
+								.			
🗸 🚿 Ø6 (R)				2 <u>8</u>	ð5			`\ Ø8			

Future 2020 PM 5: Carling/Carling EB & Westgate SC W

	-	-	>
Lane Group	EBT	WBT	SBL
Lane Configurations	***	ቀ ቶሴ	M
Traffic Volume (vph)	864	1736	25
Future Volume (vph)	864	1736	25
Lane Group Flow (vph)	909	1834	68
Turn Type	NA	NA	Prot
Protected Phases	2	6	4
Permitted Phases			
Detector Phase	2	6	4
Switch Phase			
Minimum Initial (s)	10.0	10.0	10.0
Minimum Split (s)	24.1	42.3	37.1
Total Split (s)	71.0	71.0	39.0
Total Split (%)	64.5%	64.5%	35.5%
Yellow Time (s)	3.7	3.7	3.0
All-Red Time (s)	1.6	1.6	3.1
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	53	53	6.0
Lead/Lag	0.0	0.0	0.1
Lead-Lag Optimize?			
Pocall Mode	C Max	C Max	None
Act Effet Green (s)	02.2	Q2.2	10.7
Actuated a/C Patio	72.2	72.2	0.10
Actualed y/C Nalio	0.04	0.04	0.10
V/C Rallo	0.22	0.45	42.0
	0.0	0.0	42.0
Total Dalay	0.0	0.2	12.0
	3.0	0.7	42.8
LUS Approach Dolou	A	A	12 O
Approach LOS	3.0	0.7	42.8
Approach LUS	A	A	D
Queue Length 50th (m)	22.2	1.4	10.5
Queue Length 95th (m)	29.5	4.6	23.6
Internal Link Dist (m)	42.6	113.0	40.2
Turn Bay Length (m)		1077	101
Base Capacity (vph)	4081	4077	491
Starvation Cap Reductn	0	1155	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.22	0.63	0.14
Intersection Summary			
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 18 (16%), Referenced to pha	se 2:EBT an	d 6:WBT, S	tart of Green
Natural Cycle: 80		, -	
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 2.7			
Intersection Canacity Litilization 53 A	%		
Analysis Period (min) 15	70		
Analysis Ferioù (mili) 15			
Splits and Phases: 5: Carling/Carl	ing EB & We	estgate SC \	N
→Ø2 (R)			
71 s			
71.5			

Ø6 (R)

Future 2020 PM 6: Kirkwood & Carling WB

Lane Corulpurations WBL WBT NBL NBT SBT SBR Lane Configurations Y1 Y1<		4	←	1	Ť	Ļ	~	
Lane Configurations N A F F A A F Traffic Volume (vph) 234 2518 227 567 522 410 Lane Group Flow (vph) 246 2985 239 597 549 432 Tum Type Perm NA pm-pt NA NA Perm Protected Phases 6 3 8 4 Detector Phase 6 6 3 8 4 Switch Phase 6 6 3 8 4 4 Ininimum finital (s) 10.0 10.0 10.0 10.0 10.0 10.0 Total Split (s) 68.0 68.0 68.0 42.0 32.0 3.0 3.0 Total Split (s) 68.0 68.0 12.0 42.0 32.0 2.0 2.7.3% Velow Time (s) 2.6 2.6 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7	Lane Group	WBL	WBT	NBL	NBT	SBT	SBR	
Traffic Volume (vph) 234 2518 227 567 522 410 Fulure Volume (vph) 234 2518 227 567 522 410 Lane Group Flow (vph) 234 2518 227 567 522 410 Lane Group Flow (vph) 234 2218 227 567 522 410 Lane Group Flowses 6 6 3 8 4 4 Protected Phases 6 6 3 8 4 4 Detector Phase 6 6 3 8 4 4 Winimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 Total Split (%) 61.8% 61.8% 10.9% 38.2% 27.3% 27.3% Yellow Time (s) 3.7 3.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.4 All Red Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 </td <td>Lane Configurations</td> <td>ሻሻ</td> <td><u> ተተ</u>ъ</td> <td>ň</td> <td>*</td> <td>**</td> <td>1</td> <td></td>	Lane Configurations	ሻሻ	<u> ተተ</u> ъ	ň	*	**	1	
Future (vph) 234 2518 227 567 522 410 Lane Group Flow (vph) 246 2985 239 597 549 432 Tum Type Perm NA NP mPt NA NA NA Perm Pt Protected Phases 6 6 3 8 4 Permitted Phases 6 6 3 8 4 Permitted Phases 6 6 3 8 4 4 Switch Phase 0 10.0 10.0 10.0 10.0 10.0 Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 Total Split (S) 68.0 68.0 12.0 42.0 30.0 30.0 Total Los Time (s) 2.6 2.6 7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7	Traffic Volume (vph)	234	2518	227	567	522	410	
Lane Group Flow (vph) 246 2985 239 597 549 432 Tum Type Perm NA pm-pt NA NA Perm Protected Phases 6 8 4 Detector Phase 6 6 8 4 Switch Phase 6 6 8 4 Switch Phase 0 6 0 10.0 10.0 Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 Total Spit (s) 68.0 68.0 68.0 12.0 42.0 30.0 30.0 Total Spit (s) 61.8% 61.8% 10.9% 38.2% 27.3% 27.3% Yellow Time (s) 3.7 3.7 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 4.0 Lead-Lag Ophinize? Yes	Future Volume (vph)	234	2518	227	567	522	410	
Turn Type Perm NA pm+pt NA NA Perm Protexted Phases 6 3 8 4 Permitted Phases 6 6 3 8 4 Detector Phase 6 6 3 8 4 Detector Phase 6 6 3 8 4 Detector Phase 6 6 3 8 4 4 Switch Phase 6 6 3 8 4 4 Minimum Split (s) 35.3 35.3 11.0 29.0 29.0 29.0 Total Split (s) 66.0 68.0 12.0 42.0 30.0 30.0 Total Split (s) 2.2	Lane Group Flow (vph)	246	2985	239	597	549	432	
Protected Phases 6 6 3 8 4 4 Permitted Phases 6 6 8 4 Permitted Phases 6 6 6 8 4 Permitted Phase 6 6 6 3 8 4 4 Detector Phase 6 6 6 3 8 4 4 Solitch Phase 7 Solit (s) 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.	Turn Type	Perm	NA	pm+pt	NA	NA	Perm	
Permited Phases 6 8 4 Detector Phase 6 6 3 8 4 Minimum Initial (s) 10.0 10.0 5.0 10.0 10.0 Minimum Split (s) 65.3 35.3 35.3 11.0 22.0 29.0 29.0 Total Split (s) 66.80 68.0 12.0 42.0 30.0 30.0 Total Split (s) 61.8% 61.8% 10.9% 38.2% 27.3% 27.3% Vellow Time (s) 3.7 3.7 3.3	Protected Phases		6	3	8	4		
Detector Phase Switch Phase Sw	Permitted Phases	6		8			4	
Switch Phase Minimum Split (s) 10.0 10.0 10.0 10.0 Total Split (s) 68.0 68.0 12.0 42.0 30.0 30.0 Total Split (s) 61.8% 61.8% 10.9% 32.2% 27.3% 27.3% Yellow Time (s) 3.7 3.7 3.3 3.3 3.3 3.3 All-Red Time (s) 2.6 2.6 2.7 2.7 2.7 2.7 Total Split (s) 2.3 2.3 2.3 2.0 2.20 2.0 2.0 2.0 Total Split (s) 2.4 4.0 4.1 4.1 4.1 4.1 4.1 <td>Detector Phase</td> <td>6</td> <td>6</td> <td>3</td> <td>8</td> <td>4</td> <td>4</td> <td></td>	Detector Phase	6	6	3	8	4	4	
Minimum Initial (s) 10.0 10.0 5.0 10.0 10.0 29.0 29.0 Minimum Split (s) 68.0 68.0 12.0 42.0 30.0 30.0 Total Split (s) 68.0 68.0 12.0 42.0 30.0 30.0 Total Split (s) 63.7 3.7 3.3 3.3 3.3 3.3 3.3 Veltow Time (s) 2.6 2.6 2.7 2.7 2.7 2.7 2.7 Lost Time Adjust (s) -2.3 -2.0 -2.0 -2.0 -2.0 -2.0 Lead-Lag Optimize? Yes Yes Yes Yes Yes Yes Recall Mode C-Max C-Max None Ped Ped Ped Act Effct Green (s) 64.0 64.0 38.0 38.0 26.0 24.0 24 Vic Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 5.0 D E E Queue Delay	Switch Phase							
Minimu Split (s) 35.3 35.3 11.0 29.0 29.0 29.0 Total Split (s) 68.0 68.0 68.0 12.0 42.0 30.0 30.0 Total Split (s) 61.8% 61.8% 10.9% 38.2% 27.3% 27.3% 27.3% Veltow Time (s) 3.7 3.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	
Total Split (\$) 66.0 68.0 12.0 42.0 30.0 30.0 Total Split (\$) 61.8% 10.9% 38.2% 27.3% 27.3% 27.3% Vellow Time (\$) 3.7 3.7 3.3 3.3 3.3 3.3 3.3 All-Red Time (\$) 2.6 2.6 2.7 2.7 2.7 2.7 Lost Time Adjust (\$) -2.3 -2.3 -2.0 -2.0 -2.0 -2.0 Total Lost Time (\$) 4.0 4.0 4.0 4.0 4.0 4.0 Lead/Lag Optimize? Yes Yes Yes Yes Yes Yes Recall Mode C-Max C-Max None Ped Ped Ped Act Efft Green (\$) 64.0 64.0 38.0 38.0 26.0 224 0.24 Vic Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F A	Minimum Split (s)	35.3	35.3	11.0	29.0	29.0	29.0	
Total Split (%) 61.8% 61.8% 10.9% 38.2% 27.3% 27.3% Yellow Time (s) 3.7 3.3 3.3 3.3 3.3 3.3 Under time Adjust (s) 2.6 2.6 2.7 2.7 2.7 2.7 Total Lost Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Lead/Lag Lead Lag Lag Lag Lag Lag Lead/Lag Optimize? Yes Yes Yes Yes Yes Recall Mode C-Max C-Max None Ped Ped Act Effc1 Green (s) 64.0 64.0 38.0 3.6.0 2.0 2.4 Vic Ratio 0.13 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Due to Due E E Queue Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach LOS D E E Queue Leight 95.1 0.63.7	Total Split (s)	68.0	68.0	12.0	42.0	30.0	30.0	
Yellow Time (s) 3.7 3.7 3.3 3.3 3.3 3.3 All-Red Time (s) 2.6 2.6 2.7 2.7 2.7 2.7 Lost Time Adjust (s) -2.3 -2.0 -2.0 -2.0 -2.0 Total Lost Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Lead/Lag Detimize? Yes Yes Yes Yes Recall Mode C.Max C.Max None Ped Ped Ped Addition Ad	Total Split (%)	61.8%	61.8%	10.9%	38.2%	27.3%	27.3%	
All-Red Time (s) 2.6 2.6 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7	Yellow Time (s)	3.7	3.7	3.3	3.3	3.3	3.3	
Lost Time Adjust (s) -2.3 -2.0 -2.0 -2.0 -2.0 Total Lost Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Lead/Lag Lead Lag Lag Lag Lag Lead/Lag Optimize? Yes Yes Yes Yes Recall Mode C-Max C-Max None Ped Ped Ped Act Effct Green (s) 64.0 64.0 38.0 26.0 26.0 26.0 Actuated g/C Ratio 0.58 0.58 0.35 0.35 0.24 0.24 v/c Ratio 0.0	All-Red Time (s)	2.6	2.6	2.7	2.7	2.7	2.7	
Total Lost Time (s) 4.0 4.0 4.0 4.0 4.0 4.0 Lead-Lag Optimize? Yes Yes Yes Yes Recall Mode C-Max C-Max None Ped Ped Ped Act Effct Green (s) 64.0 64.0 38.0 38.0 26.0 26.0 Act Effct Green (s) 0.58 0.35 0.35 0.24 0.24 v/c Ratio 0.13 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 0.0	Lost Time Adjust (s)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0	
LeadLag Cplimize? Yes Yes Yes Yes Yes Recall Mode C-Max C-Max None Ped Ped Ped Ped Act Effct Green (s) 64.0 64.0 38.0 38.0 26.0 26.0 Actuated g/C Ratio 0.58 0.58 0.35 0.35 0.24 0.24 v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D D F Approach Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D D F Approach Delay 5.3 2 64.6 66.3 Approach Delay 5.4 57.1 108.2 47.1 43.4 95.5 Use Queue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Queue Length 50th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 Turm Bay Length (m) 40.0 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 0 Q Q Q Q Q Q Q Q Q Q Q	Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead-Lag Optimize? Yes Yes Yes Yes Recall Mode C-Max None Ped Ped Ped Act Effct Green (s) 64.0 68.0 38.0 26.0 26.0 Act Lated g/C Ratio 0.58 0.58 0.35 0.35 0.24 0.24 v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 53.2 64.6 66.3 Approach LOS D E E Queue Length 50th (m) 5.7 -7.63.5 -44.5 85.7 56.8 -86.4 Queue Length 50th (m) 40.0 22.0 Base Capacity (typh)	Lead/Lag			Lead		Lag	Lag	
Recall Mode C-Max None Ped Ped Ped Ped Act Effct Green (s) 64.0 64.0 38.0 26.0 26.0 Actuated QC Ratio 0.58 0.35 0.35 0.24 0.24 v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach LOS D E E Queue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Queue Length 95th (m) 84 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 Turm Bay Length (m) 40.0 22.0<	Lead-Lag Optimize?			Yes		Yes	Yes	
Act Effct Green (s) 64.0 64.0 38.0 38.0 26.0 26.0 Actuated g/C Ratio 0.58 0.58 0.35 0.35 0.24 0.24 vic Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach LOS D E E Queue Length 50th (m) 5.7 76.8 *186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 Turm Bay Length (m) 40.0 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped	
Actuated g/C Ratio 0.58 0.58 0.35 0.35 0.24 0.24 v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 UCS A E F D D F Approach Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 5.2 64.6 66.3 Approach LOS D E E Cueue Length 95th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Ueueu Length 95th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 Turm Bay Length (m) 40.0 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Act Effct Green (s)	64.0	64.0	38.0	38.0	26.0	26.0	
v/c Ratio 0.13 1.08 0.97 0.69 1.06 Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Cueue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 5.3.2 64.6 66.3 Approach LOS D E E Coucue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Oueue Length 95th (m) 84.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 Turm Bay Length (m) 40.0 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <	Actuated g/C Ratio	0.58	0.58	0.35	0.35	0.24	0.24	
Control Delay 5.4 57.1 108.2 47.1 43.4 95.5 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach LOS D E E C Queue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Queue Length 95th (m) 8.4 #28.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 20.0 8ase Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0	v/c Ratio	0.13	1.08	1.08	0.97	0.69	1.06	
Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 53.2 64.6 66.3	Control Delay	5.4	57.1	108.2	47.1	43.4	95.5	
Total Delay 5.4 57.1 108.2 47.1 43.4 95.5 LOS A E F D D F Approach Delay 53.2 64.6 66.3 Approach LOS D E E Queue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Queue Length 95th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 Tum Bay Length (m) 40.0 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 Splitback Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary Cycle Length: 110 0 0 0 0 0 0 0 0 10 10 10 10 10 10	Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
LOS A E F D D F Approach Delay 53.2 64.6 66.3	Total Delay	5.4	57.1	108.2	47.1	43.4	95.5	
Approach Delay 53.2 64.6 66.3 Approach LOS D E E Queue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 -86.4 Queue Length 95th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 73.8 Turn Bay Length (m) 40.0 22.0 8ase Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Cycle Length: 110 0.13 1.08 1.08 0.97 0.69 1.06 Natural Cycle:	LOS	А	E	F	D	D	F	
Approach LOS D E E Queue Length 50th (m) 5.7 -263.5 ~44.5 85.7 56.8 ~86.4 Queue Length 95th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 73.8 Turn Bay Length (m) 40.0 22.0 22.0 8ase Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 Splilback Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary	Approach Delay		53.2		64.6	66.3		
Queue Length 50th (m) 5.7 -263.5 -44.5 85.7 56.8 86.4 Queue Length 95th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 73.8 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Reduced V/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary Cycle Length: 110 Cottrol Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection LOS: E Intersection LOS: E Intersection LOS: E Intersection Capacity Utilization 112.4% <td>Approach LOS</td> <td></td> <td>D</td> <td></td> <td>E</td> <td>E</td> <td></td> <td></td>	Approach LOS		D		E	E		
Queue Length 95th (m) 8.4 #282.7 m#76.8 #186.1 75.4 #147.0 Internal Link Dist (m) 113.3 144.7 73.8 22.0 Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary 22.0 225%), Referenced to phase 6:WBTL, Start of Green Natural Cycle: 1.08 Natural Cycle: 1.02 Natural Cycle of Service H Analysis Period (min) 15 - Volume exceeds capacity, queue is theoreticall	Queue Length 50th (m)	5.7	~263.5	~44.5	85.7	56.8	~86.4	
Internal Link Dist (m) 113.3 144.7 73.8 Turn Bay Length (m) 40.0 22769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary Cycle Length: 110 Actuated Cycle Length: 110 Offset: 28 (25%), Referenced to phase 6:WBTL, Start of Green Natural Cycle: 110 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Queue Length 95th (m)	8.4	#282.7	m#76.8	#186.1	75.4	#147.0	
Turn Bay Length (m) 40.0 22.0 Base Capacity (typh) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 Starage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary	Internal Link Dist (m)		113.3		144.7	73.8		
Base Capacity (vph) 1902 2769 222 616 801 406 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary	Turn Bay Length (m)	40.0					22.0	
Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary	Base Capacity (vph)	1902	2769	222	616	801	406	
Spillback Cap Reductn 0 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary	Starvation Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn 0	Spillback Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio 0.13 1.08 1.08 0.97 0.69 1.06 Intersection Summary	Storage Cap Reductn	0	0	0	0	0	0	
Intersection Summary Cycle Length: 110 Actuated Cycle Length: 110 Offset: 28 (25%), Referenced to phase 6:WBTL, Start of Green Natural Cycle: 110 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Reduced v/c Ratio	0.13	1.08	1.08	0.97	0.69	1.06	
Cycle Length: 110 Actuated Cycle Length: 110 Offset: 28 (25%), Referenced to phase 6:WBTL, Start of Green Natural Cycle: 110 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 00Lume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Intersection Summary							
Actuated Cycle Length: 110 Offset: 28 (25%), Referenced to phase 6:WBTL, Start of Green Natural Cycle: 110 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 00Lume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Cycle Length: 110							
Offset: 28 (25%), Referenced to phase 6:WBTL, Start of Green Natural Cycle: 110 Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Intersection Capacity Utilization 112.4% ICU Level of Service H Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Actuated Cycle Length: 110							
Natural Cycle: 110 Control Type: Actuated-Coordinated Maximum V/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Intersection Capacity Utilization 112.4% Intersection Capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Offset: 28 (25%), Referenced to pha	se 6:WBTL	Start of Gre	en				
Average of the second	Natural Cycle: 110	50 0.WD12,						
Maximum v/c Ratio: 1.08 Intersection Signal Delay: 57.6 Intersection Capacity Utilization 112.4% Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Control Type: Actuated-Coordinated							
Intersection Signal Delay: 57.6 Intersection LOS: E Intersection Capacity Utilization 112.4% ICU Level of Service H Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Maximum v/c Ratio: 1.08							
Intersection Capacity Utilization 112.4% ICU Level of Service H Analysis Period (min) 15 Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Wolume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Intersection Signal Delay: 57.6				Int	ersection L	OS [,] F	
Analysis Period (min) 15 ~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Intersection Capacity Utilization 112	4%			IC	U Level of S	Service H	
Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Analysis Period (min) 15				10	0 2010.0.0		
Queue shown is maximum after two cycles. # 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	 Volume exceeds capacity, queue 	e is theoretic	ally infinite					
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles. Wolume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	Queue shown is maximum after th	wo cycles						
Queue shown is maximum after two cycles. m Volume for 95th percentile queue is metered by upstream signal. Splits and Phases: 6: Kirkwood & Carling WB	# 95th percentile volume exceeds	canacity due	eue may he	longer				
Splits and Phases: 6: Kirkwood & Carling WB	Oueue shown is maximum after th	wo cycles.	ao may bo	longer.				
Splits and Phases: 6: Kirkwood & Carling WB	m Volume for 95th percentile queu	le is metered	by upstrea	m signal				
Splits and Phases: 6: Kirkwood & Carling WB			.,	ga.				
▲ а	Splits and Phases: 6: Kirkwood &	Carling WB						
								12 -

	[▲] Ø3 [↓] Ø4
	12 s 30 s
🗸 Ø6 (R)	
68 s	42 s

Future 2020 PM 7: Kirkwood & Carling EB

	۶	+	*	†	1	1	ţ	
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT	
Lane Configurations	5	4412	1	44	1	5	*	
Traffic Volume (vph)	419	1365	405	341	308	441	314	
Future Volume (vph)	419	1365	405	341	308	441	314	
Lane Group Flow (vph)	392	1486	426	359	324	464	331	
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	
Protected Phases		2		8		7	4	
Permitted Phases	2		2		8	4		
Detector Phase	2	2	2	8	8	7	4	
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1	
Total Split (s)	48.0	48.0	48.0	36.0	36.0	26.0	62.0	
Total Split (%)	43.6%	43.6%	43.6%	32.1%	32.1%	23.6%	56.4%	
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3	
All-Red Time (S)	2.5	2.5	2.5	2.8	2.8	1.8	2.8	
LUST TIME AUJUST (S)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1	
	4.0	4.0	4.0	4.U	4.U	4.0	4.0	
Leau/Lay				Voc	Voc	Lay		
Recall Mode	C_Max	C-Max	C-May	Min	Min	Min	Min	
Act Effct Green (s)	46 Q	46.9	46.9	29.1	20 1	55.1	55.1	
Actuated g/C Ratio	0.43	0.7	0.43	0.26	0.26	0.50	0.50	
v/c Ratio	0.63	0.76	0.51	0.40	0.81	0.80	0.37	
Control Delay	31.6	30.7	5.7	34.1	53.8	26.0	7.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.6	30.7	5.7	34.2	53.8	26.0	7.7	
LOS	С	С	А	С	D	С	А	
Approach Delay		26.2		43.5			18.4	
Approach LOS		С		D			В	
Queue Length 50th (m)	79.0	107.9	4.8	32.1	62.6	44.9	14.5	
Queue Length 95th (m)	119.1	128.1	27.0	45.0	#96.3	#79.8	23.0	
Internal Link Dist (m)		161.6		158.6			144.7	
Turn Bay Length (m)	40.0				90.0			
Base Capacity (vph)	620	1956	834	986	441	588	940	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	50	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.63	0.76	0.51	0.38	0.73	0.79	0.35	
Intersection Summary								
Cycle Length: 110								
Actuated Cycle Length: 110								
Offset: 60 (55%), Referenced to phas	e 2:EBTL, S	Start of Gree	en					
Natural Cycle: 70								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.81								
Intersection Signal Delay: 27.7				Int	ersection L(DS: C		
Intersection Capacity Utilization 112.4	4%			IC	U Level of S	Service H		
Analysis Period (min) 15								
# 95th percentile volume exceeds c	apacity, que	eue may be	longer.					
Queue shown is maximum after tw	vo cycles.							
Splits and Phases: 7: Kirkwood & C	Carling EB							
4(72 (P)	<u>_</u>				а			
48 c				€2 c	т			
105				02.5				1.1
				Τø	8			×.
				36 s				26 s

	-	*	
Lane Group	EBT	WBR	
Lane Configurations	<u> </u>	777	
Traffic Volume (vph)	1001	1868	
Future Volume (vph)	1001	1868	
Lane Group Flow (vph)	1054	1966	
Sign Control	Free		
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 49.3%	,)		ICU Level of Service A
Analysis Period (min) 15			

Appendix I SYNCHRO 2025 Total Traffic Analysis

Future 2025 AM 2: Merivale & Westgate SC

Lane Group EBL NBL NBT SBT SBR Lane Configurations Y		٦	1	1	Ŧ	~		
Lane Configurations Y A A Y Traffic Volume (vph) 31 48 167 501 68 Lane Group Flow (vph) 62 51 176 527 72 Turn Type Prot Perm NA NA Perm Protected Phases 4 2 6 6 Detector Phase 4 2 2 6 6 Switch Phase 10.0 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 23.5 23.8 23.8 35.8 15.8 15.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 36.0 Total Split (s) 0.0 0.0 0.0 0.0 0.0 10.0 10.0 Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 1	Lane Group	EBL	NBL	NBT	SBT	SBR		ļ
Traffic Volume (vph) 31 48 167 501 668 Future Volume (vph) 31 48 167 501 668 Lane Group Flow (vph) 62 51 176 527 72 Tum Type Prot Perm NA NA Perm Protected Phases 4 2 6 6 Detector Phase 4 2 6 6 Winh Phase 31 33 33 35.8 35.8 Total Split (s) 23.5 23.8 23.8 35.8 35.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 24.0 36.0 33 3.3 33 33 33 33 33 33 33 33 33 33 33 33 33 33 34 44 42 47.2 47.2 47.2 47.2 47.2 47.2 47.2 47.2 47.2 47.2	Lane Configurations	¥.	5	•	+	1		1
Future Volume (vph) 31 48 167 501 68 Lane Group Flow (vph) 62 51 176 527 72 Tum Type Prot Perm NA NA Perm Protected Phases 4 2 6 6 Permitted Phases 2 6 6 Switch Phase 31 0.0 10.0 10.0 10.0 Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 Minimum Spitl (s) 23.5 23.8 35.8 35.8 15.8 Total Spitl (s) 40.09 60.0% 60.0% 60.0% 60.0% Yellow Time (s) 33 3.6 1.6<	Traffic Volume (vph)	31	48	167	501	68		
Lane Group Flow (vph) 62 51 176 527 72 Tum Type Prot Perm NA NA Perm Protected Phases 4 2 6 Detector Phases 4 2 6 betector Phase 4 2 6 Switch Phase 4 2 6 Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 235 23.8 23.8 35.8 35.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 22.2 2.5 2.5 2.5 2.5 Loss Time (s) 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 5.5 5.8 5.8 5.8 5.8 5.8 Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Eff Green (s) 10.0 47.2 47.2 47.2 47.2 A7.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 vic Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 3.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 3.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 3.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 3.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 3.1 1.4 LOS B A A A Approach Dol 0 0 0 0 0 0 Queue Length 50th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Tum Bay Length (m) 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Slarvation Cap Reductin 0 0 0 0 0 Slorage Cap Reductin 0 0 0 0 Reduced V/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% Intersection Capacity Utilization 58.8	Future Volume (vph)	31	48	167	501	68		
Turn Type Prot Perm NA NA NA Perm Protected Phases 4 2 6 6 Detector Phase 4 2 2 6 6 Switch Phase 4 2 2 6 6 Switch Phase 0 10.0 10.0 10.0 10.0 10.0 Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 10.0 Minimum Spitt (s) 23.5 23.8 23.8 35.8 35.8 10.1 Total Spitt (%) 40.0% 60.0% 60.0% 60.0% 60.0% 60.0% Veltow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 3.3 Lead/Lag U Ead/Lag U Ead/Lag U Ead/Lag C-Max C-Max C-Max A Act Effcl Green (S) 10.0 47.2 47.2 47.2 47.2 2 2 2 2 2 2 5 5 5 8 8 0.6 0 0	Lane Group Flow (vph)	62	51	176	527	72		
Protecied Phases 2 6 Permitted Phases 2 6 Switch Phase 4 2 6 Minimum Split (s) 10.0 10.0 10.0 10.0 Minimum Split (s) 23.5 23.8 23.8 35.8 35.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 20.2 2.5 2.5 2.5 2.5 Lost Time (s) 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.2 2.5 5.5 8.5 Lost Time (s) 0.0 0.0 0.0 0.0 Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Effic Green (s) 10.0 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 We Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Los B A A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.7 4.6 Approach LoS B A A A Approach Delay 15.8 0.7 4.6 Approach LoS B A A A Approach Delay 15.8 0.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.8 0.0 Storage Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 Cycle Length: 60 Actuated Cycle Length: 60 Actuated Cycle Length: 60 Control Type: Kotauled - K	Turn Type	Prot	Perm	NA	NA	Perm		
Permitted Phases 2 6 6 Detector Phase 4 2 2 6 6 Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 23.5 23.8 23.8 35.8 35.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 36.0 Total Split (s) 40.0% 60.0% 60.0% 60.0% 60.0% Yellow Time (s) 2.2 2.5 2.5 2.5 2.5 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 5.8 Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 Ve Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.8 0.7 4.6 Approach Delay 15.8 0.8 0.7 3.1 1.4 LOS B A A A A Approach Delay 15.8 0.8 0.7 4.6 Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A A Approach Delay 15.8 0.8 0.7 4.6 Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A A Autuated Cycle Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Cueue Length 90th (m) 1.1.7 0.8 2.0 40.7 3.1 Intermal Link Dist (m) 40.0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Protected Phases	4		2	6			
Detector Phase 4 2 2 6 6 6 Switch Phase Minimum Split (s) 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 23.5 23.8 23.8 35.8 35.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 40.0% 60.0% 60.0% 60.0% 60.0% (sol.0% 60.0% 60.0% 60.0% 60.0% (sol.0% 60.0% 60.0% 60.0% (sol.0% 60.0% 60.0% 60.0% (sol.0% 60.0% 60.0% (sol.0% 60.0% 60.0% (sol.0% 60.0% (Permitted Phases		2			6		
Switch Phase Minimum Initial (s) 10.0 10.0 10.0 10.0 Minimum Spilt (s) 23.5 23.8 23.8 35.8 35.8 Total Spilt (s) 24.0 36.0 36.0 36.0 36.0 Total Spilt (%) 40.0% 60.0% 60.0% 60.0% 60.0% Vellow Time (s) 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 5.5 5.8 5.8 5.8 5.8 Lead-Lag Optimize? Recail Mode None C-Max C-Max C-Max Recail Mode 0.17 0.79 0.79 0.79 0.79 Ve Ratio 0.21 0.06 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Oueue Delay 15.8 0.8 0.7 5.1 1.4 Cold Delay 15.8 0.8 0.7 5.1 1.4 Cold Delay 15.8 0.8 0.7 4.6 Approach Delay 15.8 0.8 0.7 3.1 <td>Detector Phase</td> <td>4</td> <td>2</td> <td>2</td> <td>6</td> <td>6</td> <td></td> <td></td>	Detector Phase	4	2	2	6	6		
Minimum Initial (s) 10.0 10.0 10.0 10.0 10.0 Minimum Split (s) 23.5 23.8 23.8 35.8 35.8 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (s) 2.2 2.5 2.5 2.5 2.5 2.5 Lost Time (s) 5.5 5.8 5.8 5.8 5.8 5.8 Lead/Lag Lead/Lag Lead/Lag Lead/Lag C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 47.2 Act Effct Green (s) 10.0 0.79 0.79 0.79 0.79 0.79 Vic Ratio 0.21 0.08 0.13 0.38 0.06 0.0 0.0 0.0 0.0 Control Delay 15.8 0.8 0.7 5.1 1.4 0.4 2.0 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Switch Phase							
Minimum Split (s) 23.5 23.8 23.8 35.8 35.8 Total Split (s) 40.0% 60.0% 60.0% 60.0% Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.2 2.5 2.5 2.5 2.5 2.5 Lead/Lag 0.0 0.0 0.0 0.0 0.0 Total Lost Time Adjust (s) 5.5 5.8 5.8 5.8 5.8 Lead/Lag 0.0 0.0 0.0 0.0 Total Lost Time Adjust (s) 0.0 0.47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 V(Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Control Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 4.6 Approach Delay 15.8 0.8 0.7 3.1 Tum Bay Length f(m) 11.7 0.8 2.0 40.7 3.1 Internal Link D(s) B A A Cueue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link D(s) B A A A Cueue Length form 40.0 40.0 Starayton Cap Reductn 0 0 0 0 0 Starayton Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 Storage Cap Reductn 0 0 0 Storage Cap Reductn 0 0.0 Storage Cap Reductn 0.0 S	Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		
Total Split (s) 24.0 36.0 36.0 36.0 36.0 Total Split (%) 40.0% 60.0% 60.0% 60.0% 60.0% Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.2 2.5 2.5 2.5 2.5 2.5 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max Recall Mode None C-Max C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 Actated g/C Ratio 0.17 0.79 0.79 0.79 0.79 0.79 Vice Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A A Approach LOS B A	Minimum Split (s)	23.5	23.8	23.8	35.8	35.8		
Total Split (%) 40.0% 60.0% 60.0% 60.0% 60.0% 60.0% Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.2 2.5 2.5 2.5 2.5 2.5 Lead/Lag Iteme (s) 5.5 5.8 5.8 5.8 5.8 5.8 Lead/Lag Iteme (s) 0.0 0.0 0.0 0.0 0.0 Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 Actated g/C Ratio 0.17 0.79 0.79 0.79 0.79 V/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Loss B A A A A Approach LOS B A A A	Total Split (s)	24.0	36.0	36.0	36.0	36.0		
Yellow Time (s) 3.3 3.3 3.3 3.3 3.3 3.3 All-Red Time (s) 2.2 2.5 2.5 2.5 2.5 Lost Time A(just (s) 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max Recall Mode 0.0 0.0 0.79 0.79 0.79 0.79 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 0.79 V/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0	Total Split (%)	40.0%	60.0%	60.0%	60.0%	60.0%		
All-Red Time (s) 2.2 2.5 2.5 2.5 2.5 2.5 Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 5.8 5.8 Lead/Lag Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max At Effct Green (s) 10.0 47.2 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 0.79 v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A A A A A A A A A A A A A A A	Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 5.8 Lead/Lag Lead/Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 Actuated 2(R atio 0.17 0.79 0.79 0.79 0.79 vic Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Turm Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 Reduced vic Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum vic Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Signal Delay: 4.4 Intersection Signal Delay: 4.4 S Spilts and Phases: 2: Merivale & Westgate SC Spilts and Phases: 2: Merivale & West	All-Red Time (s)	2.2	2.5	2.5	2.5	2.5		
Total Lost Time (s) 5.5 5.8 5.8 5.8 5.8 5.8 Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.8 0.7 4.6 Approach LOS B A A A Queue Length 50th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 10.0 Base Capacity (vph) 522 636 1404 1404 1209 14.4 10.0	Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Lead/Lag Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A A Approach Delay 15.8 0.8 0.7 4.6 Approach Delay 15.8 0.7 4.6 Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internat Link Dist (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.0 40.0 Base Capacity (wph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0.0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC V or 24 s	Total Lost Time (s)	5.5	5.8	5.8	5.8	5.8		
Lead-Lag Optimize? Recall Mode None C-Max C-Max C-Max C-Max Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 ActLafed g/C Ratio 0.17 0.79 0.79 0.79 0.79 v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.7 4.6 Approach Delay 15.8 0.7 4.6 Approach LOS B A A A A Oueue Length 50th (m) 3.1 0.2 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Turm Bay Length (m) 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0	Lead/Lag							
Recall Mode None C-Max C-Max C-Max C-Max Act EftG Green (s) 10.0 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 vic Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach DS B A A A Queue Length 50th (m) 3.1 0.2 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 10.0 0<	Lead-Lag Optimize?							
Act Effct Green (s) 10.0 47.2 47.2 47.2 47.2 Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.7 4.6 Approach LOS B A A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starge C	Recall Mode	None	C-Max	C-Max	C-Max	C-Max		
Actuated g/C Ratio 0.17 0.79 0.79 0.79 0.79 v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.8 0.7 4.6 Approach LOS B A A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 58.0 Turm Bay Length (m) 40.0 0 0 0 0 59 58.4 58.0 <td< td=""><td>Act Effct Green (s)</td><td>10.0</td><td>47.2</td><td>47.2</td><td>47.2</td><td>47.2</td><td></td><td></td></td<>	Act Effct Green (s)	10.0	47.2	47.2	47.2	47.2		
v/c Ratio 0.21 0.08 0.13 0.38 0.06 Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.7 4.6 Approach LOS B A A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 58.0 Turn Bay Length (m) 40.0 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 0 1.4 Spillback Cap Reductn <td< td=""><td>Actuated g/C Ratio</td><td>0.17</td><td>0.79</td><td>0.79</td><td>0.79</td><td>0.79</td><td></td><td></td></td<>	Actuated g/C Ratio	0.17	0.79	0.79	0.79	0.79		
Control Delay 15.8 0.8 0.7 5.1 1.4 Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.7 4.6 Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 10 Turm Bay Length (m) 40.0 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 1209 Starvation Cap Reductn 0	v/c Ratio	0.21	0.08	0.13	0.38	0.06		
Queue Delay 0.0 0.0 0.0 0.0 0.0 Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A Approach Delay 15.8 0.7 4.6 Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 50th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 100 Base Capacity (vph) 522 63.6 1404 1209 Starvation Cap Reductn 0 0 0 0 0 0 0 Spillback Cap Reductn 0	Control Delay	15.8	0.8	0.7	5.1	1.4		
Total Delay 15.8 0.8 0.7 5.1 1.4 LOS B A A A A Approach Delay 15.8 0.7 4.6 Approach LOS B A A Oueue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 100 Turn Bay Length (m) 40.0 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Intersection Summary Intersection LOS: A Intersection LOS: A Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level o	Queue Delay	0.0	0.0	0.0	0.0	0.0		
LOS B A A A A A Approach Delay 15.8 0.7 4.6 Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Sugnal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC Solits and Phases: 2: Merivale & Westgate SC	Total Delay	15.8	0.8	0.7	5.1	1.4		
Approach Delay 15.8 0.7 4.6 Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary E E E E E E E E E E E E E E E E	LOS	В	А	А	А	А		
Approach LOS B A A Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 58.0 Turn Bay Length (m) 40.0 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary	Approach Delay	15.8		0.7	4.6			
Queue Length 50th (m) 3.1 0.2 0.8 24.2 0.0 Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 58.0 Turn Bay Length (m) 40.0 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 0 0 0 0 0 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 0 0 0 0 0 0 0 0 0 1 0.38 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 <	Approach LOS	В		А	А			
Queue Length 95th (m) 11.7 0.8 2.0 40.7 3.1 Internal Link Dist (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 Stary Cap Reductn 0 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 0 0 0 0 0 144 <td>Queue Length 50th (m)</td> <td>3.1</td> <td>0.2</td> <td>0.8</td> <td>24.2</td> <td>0.0</td> <td></td> <td></td>	Queue Length 50th (m)	3.1	0.2	0.8	24.2	0.0		
Internal Link Dist (m) 40.8 88.4 58.0 Turn Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Staryation Cap Reductn 0 0 0 0 0 Reduced V/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 0 0 0 0 0 0 0 0 0 1 1 1 0 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1<	Queue Length 95th (m)	11.7	0.8	2.0	40.7	3.1		
Turn Bay Length (m) 40.0 40.0 Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Reduced V/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 0 0 0 0 0 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 0 0 0 0 144 </td <td>Internal Link Dist (m)</td> <td>40.8</td> <td></td> <td>88.4</td> <td>58.0</td> <td></td> <td></td> <td></td>	Internal Link Dist (m)	40.8		88.4	58.0			
Base Capacity (vph) 522 636 1404 1404 1209 Starvation Cap Reductn 0 0 0 0 0 Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced V/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary	Turn Bay Length (m)		40.0			40.0		
Starvation Cap Reductn 0 0 0 0 Spillback Cap Reductn 0 0 0 0 Storage Cap Reductn 0 0 0 0 Reduced V/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection LOS: A Intersection Signal Delay: 4.4 Intersection LOS: A Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC 2 2 2 Image: Section Section Colsect Colse	Base Capacity (vph)	522	636	1404	1404	1209		
Spillback Cap Reductn 0 0 0 0 0 Storage Cap Reductn 0 0 0 0 0 Reduced V/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection LOS: A Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC Image: 2 CR 24 s	Starvation Cap Reductn	0	0	0	0	0		
Storage Cap Reductn 0 0 0 0 0 Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC Intersection LOS: A	Spillback Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio 0.12 0.08 0.13 0.38 0.06 Intersection Summary Cycle Length: 60 </td <td>Storage Cap Reductn</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td>	Storage Cap Reductn	0	0	0	0	0		
Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 58.8% Intersection Capacity Utilization 58.8% IcU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC Image: 2 (R) 36 s	Reduced v/c Ratio	0.12	0.08	0.13	0.38	0.06		
Intersection Summary Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 58.8% Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC Image: 2 (R) 36 s	Interception Summony							
Cycle Length: 60 Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC ✓ ØZ (R) 36 s 24 s	Intersection Summary							
Actuated Cycle Length: 60 Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC	Cycle Length: 60							
Offset: 13 (22%), Referenced to phase 2:NBTL and 6:SBT, Start of Green Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection Capacity Utilization 58.8% IcU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC ✓ Ø2 (R) ✓ Ø 36 s 24 s	Actuated Cycle Length: 60							
Natural Cycle: 60 Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC \$\sum_{Q2} (R) \sum_{Q2} (Offset: 13 (22%), Referenced to phas	e 2:NBTL a	nd 6:SB1, S	Start of Gree	en			
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC \$\sum_g2 (R) \$\sum_g2 (R) \$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\sum_g2 (R) \$	Natural Cycle: 60							
Maximum v/c Ratio: 0.38 Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC ✓ Ø2 (R) 36 s	Control Type: Actuated-Coordinated							
Intersection Signal Delay: 4.4 Intersection LOS: A Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC	Maximum v/c Ratio: 0.38							
Intersection Capacity Utilization 58.8% ICU Level of Service B Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC	Intersection Signal Delay: 4.4				In	tersection L	JS: A	
Analysis Period (min) 15 Splits and Phases: 2: Merivale & Westgate SC Ø2 (R) 36 s 24 s	Intersection Capacity Utilization 58.89	6			IC	U Level of S	ervice B	
Splits and Phases: 2: Merivale & Westgate SC	Analysis Period (min) 15							
Splits and Phases: 2: Merivale & Westgate SC								
∫ ¶ Ø2 (R) 36 s 24 s	Splits and Phases: 2: Merivale & W	/estgate SC						
36 s 24 s								• ···
36 s 24 s	1 Ø2 (K)							- jØ4
	36 s						24	:4 s

Ø6 (R)

Future 2025 AM 3: Merivale & Carling

	+	\mathbf{F}	4	+	×.	•	Ť	1	1	ţ	~	
Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u></u>	1	1	<u></u>	1	ľ	•	1	ľ	1	1	
Traffic Volume (vph)	861	71	149	663	32	224	207	237	26	238	208	
Future Volume (vph)	861	71	149	663	32	224	207	237	26	238	208	
Lane Group Flow (vph)	906	75	157	698	34	236	218	249	27	251	219	
Turn Type	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2		1	6		3	8		7	4		
Permitted Phases		2	6		6	-		8	_		4	
Detector Phase	2	2	1	6	6	3	8	8	7	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	29.0	29.0	10.4	29.0	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Total Split (s)	49.0	49.0	12.0	61.0	61.0	21.0	38.0	38.0	21.0	38.0	38.0	
Total Split (%)	40.8%	40.8%	10.0%	50.8%	50.8%	17.5%	31.7%	31.7%	17.5%	31.7%	31.7%	
Yellow Lime (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	2.3	1.7	2.3	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
Lost Time Adjust (s)	-2.0	0.0	-1.4	-2.0	0.0	-2.3	-2.7	-2.7	-2.3	-2.7	-2.7	
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None	
Act Effct Green (s)	50.6	48.6	65.7	65.7	63.7	17.0	37.4	37.4	9.8	25.3	25.3	
Actuated g/C Ratio	0.42	0.40	0.55	0.55	0.53	0.14	0.31	0.31	0.08	0.21	0.21	
v/c Ratio	0.63	0.12	0.56	0.38	0.04	0.98	0.39	0.40	0.20	0.67	0.54	
Control Delay	25.4	0.5	24.1	17.1	0.1	105.8	35.3	5.7	51.3	47.3	17.2	
Queue Delay	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	
Total Delay	26.2	0.5	24.1	17.1	0.1	105.8	35.3	5.7	51.3	47.7	17.4	
LOS	С	A	С	В	A	F	D	A	D	D	В	
Approach Delay	24.2			1/./			48.5			34.5		
Approach LOS	С		17.5	В			D			C	45.7	
Queue Length 50th (m)	89.0	0.3	17.5	46.7	0.0	56.1	42.9	0.0	6.2	45.0	15.7	
Queue Length 95th (m)	67.4	0.0	#37.3	/0.5	0.0	#106.3	61.1	17.7	15.6	57.6	28.5	
Internal Link Dist (m)	89.4	25.0	00.0	139.3	25.0	10.0	131.8		40.0	88.4	70.0	
Turn Bay Length (m)	1400	25.0	90.0	1055	25.0	40.0	F/4	(00	40.0	FOF	/0.0	
Base Capacity (vpn)	1430	640	282	1855	119	240	561	629	240	505	504	
Starvation Cap Reductn	245	0	0	0	0	0	0	0	0	46	33	
Spillback Cap Reductin	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductin	0 76	0 10	0 54	0 20	0.04	0 00	0 20	0 40	0 11		0.46	
Reduced V/C Rallo	0.70	0.12	0.00	0.38	0.04	0.98	0.39	0.40	0.11	0.55	0.40	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 113 (94%), Referenced to pha	ase 2:EBT a	nd 6:WBTL,	Start of Gr	een								
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.98												
Intersection Signal Delay: 29.6				In	ersection L	OS: C						
Intersection Capacity Utilization 81.39	%			IC	U Level of S	Service D						
Analysis Period (min) 15												
# 95th percentile volume exceeds c	apacity, que	eue may be	longer.									
Queue shown is maximum after tw	vo cycles.											
Splits and Phases: 3: Merivale & C	arling											
🖌 Ø1 🔮 🐨 Ø2 (R)					1	Ø3		🕴 Ø4				
12 s 49 s					21 s			38 s				
🖗 Ø6 (R) 🏮					<u> </u>	Ø7		Ø8				
61 s					21 s			38 s				

Future 2025 AM 4: Carling & Westgate SC E

	•	≯	+	*	4	ł	۹.	•	t	×	ŧ	- √
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		3	* *	1	۲	44	1		\$		ب اً	1
Traffic Volume (vph)	99	108	1295	14	7	868	58	12	2	28	1	43
Future Volume (vph)	99	108	1295	14	7	868	58	12	2	28	1	43
Lane Group Flow (vph)	0	218	1363	15	7	914	61	0	29	0	30	45
Turn Type	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases			2			6			8		4	
Permitted Phases	2	2		2	6		6	8		4		4
Detector Phase	2	2	2	2	6	6	6	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	23.6	23.6	23.6	23.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0
Total Split (s)	83.0	83.0	83.0	83.0	83.0	83.0	83.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	69.2%	69.2%	69.2%	69.2%	69.2%	69.2%	69.2%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	,	-1.6	-1.6	0.0	-1.6	-1.6	0.0		-3.0		-3.0	-3.0
Total Lost Time (s)		4.0	4.0	5.6	4.0	4.0	5.6		4.0		4.0	4.0
Lead/Lag		110		010	110		010					110
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	0 Max	99.2	99.2	97.9	99.2	99.2	97.9	None	17.0	None	17.0	17.0
Actuated q/C Ratio		0.83	0.83	0.82	0.83	0.83	0.82		0.14		0.14	0.14
v/c Ratio		0.50	0.49	0.02	0.03	0.33	0.05		0.14		0.16	0.18
Control Delay		10.4	4 9	0.01	2.6	21	0.00		26.8		44.2	12.4
Queue Delay		0.0	0.1	0.0	0.0	0.2	0.0		0.0		0.0	0.0
Total Delay		10.4	4.9	0.0	2.6	23	0.0		26.8		44.2	12.4
		B	Δ	Δ	Δ	Δ	Δ		20.0		тт. <u>2</u> D	12.4 R
Approach Delay		U	5.6	~	~	22	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		26.8		25.1	
Approach LOS			Δ			Δ			20.0		20.1	
Oueue Length 50th (m)		05	21.1	0.0	0.0	82	03		3.2		6.6	0.0
Oueue Length 95th (m)		/2.5	108.1	m0.2	0.0 m0.5	m10.2	m0.4		10.0		12.0	8.0
Internal Link Dist (m)		72.2	112.0	110.2	110.5	QQ /	110.4		10.0		12.7	0.7
Turn Bay Length (m)		100.0	112.0	25.0	<i>4</i> 5 0	07.4	25.0		10.0		40.4	
Base Canacity (ynh)		100.0	2802	1100	250	2802	11/10		103		323	130
Stanuation Can Poductn		434	2002	0	2.37	2002	0		403		0	437
Snillback Can Reductin		0	157	0	0	002	0		0		0	0
Storage Can Reductin		0	157	0	0	0	0		0		0	0
Poducod v/c Patio		0 50	0 55	0.01	0.02	0 40	0.05		0 07		0	0 10
		0.00	0.55	0.01	0.03	0.40	0.05		0.07		0.00	0.10
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 108 (90%), Referenced to ph	ase 2:EBTL	and 6:WBT	L, Start of C	Green								
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.50												
Intersection Signal Delay: 5.1				In	tersection L	OS: A						
Intersection Capacity Utilization 79.4	%			IC	CU Level of S	Service D						
Analysis Period (min) 15												
m Volume for 95th percentile queu	e is metered	l by upstrea	m signal.									
Splits and Phases: 4: Carling & W	estgate SC	E										
-44								4				

≠ø2 (R)	∯⊳ø4
83 s	37 s
Ø6 (R)	↑ø8
83 s	37 s

Future 2025 AM 5: Carling & Westgate SC W

	-	-	•	- \
Lane Group	FBT	WBT	WBR	SBI
Lane Configurations	**	**	1	N/
Traffic Volume (uph)	1008	1101	12	12
Future Volume (vph)	1096	1101	13	13
Lana Croup Flow (uph)	1090	1101	13	13
	OCII	1243	14 Derm	34 Dret
Turn Type	NA	NA	Perm	Prot
Protected Phases	2	6	,	4
Permitted Phases			6	
Detector Phase	2	6	6	4
Switch Phase				
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	24.0	48.3	48.3	37.1
Total Split (s)	83.0	83.0	83.0	37.0
Total Split (%)	69.2%	69.2%	69.2%	30.8%
Yellow Time (s)	3.7	3.7	3.7	3.0
All-Red Time (s)	1.6	1.6	1.6	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	6.1
	J.J	5.5	J.J	0.1
Load Lag Optimizo?				
	C May	C Mov	C May	Mone
Recall MODE	C-IMAX	U-IVIAX	U-IVIAX	None
Act Elict Green (S)	107.2	107.2	107.2	10.0
Actuated g/C Ratio	0.89	0.89	0.89	0.08
v/c Ratio	0.38	0.41	0.01	0.22
Control Delay	2.4	1.1	0.2	32.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.4	1.1	0.2	32.6
LOS	А	А	А	С
Approach Delay	2.4	1.1		32.6
Approach LOS	А	А		C.
Oueue Length 50th (m)	30.0	5.2	0.0	21
Oueue Length 95th (m)	26.7	9.2 8.8	m0.2	12.1
Intornal Link Dist (m)	20.7	0.0	110.2	13.2
Turn Pay Longth (m)	32.0	112.0	25.0	92.1
Turri Bay Lerigin (III)	2027	2027	25.0	400
Base Capacity (vph)	3027	3027	1355	429
Starvation Cap Reductn	0	343	0	0
Spillback Cap Reductn	80	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.46	0.01	0.08
Intersection Summany				
Cycle Longth: 120				
Cycle Length: 120				
Actuated Cycle Length: 120				
Offset: 119 (99%), Referenced to p	phase 2:EBT a	nd 6:WBT,	Start of Gree	en
Natural Cycle: 90				
Control Type: Actuated-Coordinate	ed			
Maximum v/c Ratio: 0.41				
Intersection Signal Delay: 2.1				Ir
Intersection Capacity Utilization 52	2.3%			10
Analysis Period (min) 15				
m Volume for 95th percentile que	eue is metered	by upstrea	m signal	
tolume for your percentile que		~j apsired	signui.	
Splits and Phases: 5. Carling &	Westgate SC V	N		
Splits and Phases: 5: Carling &	Westgate SC V	N		

∎ → Ø2 (R)	Ø4	
83 s	37 s	
Ø6 (R)		
83 s		

Future 2025 AM 6: Kirkwood & Carling WB

	4	-	1	Ť	Ļ	~	
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR	
Lane Configurations	ካካ	<u> </u>	5	•	* *	1	
Traffic Volume (vph)	215	1666	280	339	425	360	
Future Volume (vph)	215	1666	280	339	425	360	
Lane Group Flow (vph)	226	2020	295	357	447	379	
Turn Type	Perm	NA	pm+pt	NA	NA	Perm	
Protected Phases		6	3	8	4		
Permitted Phases	6		8			4	
Detector Phase	6	6	3	8	4	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	35.3	35.3	11.0	29.0	29.0	29.0	
Total Split (s)	58.0	58.0	24.0	62.0	38.0	38.0	
Total Split (%)	48.3%	48.3%	20.0%	51.7%	31.7%	31.7%	
Yellow Time (s)	37	3.7	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.6	2.6	27	27	2.7	2.7	
Lost Time Adjust (s)	-23	-2.3	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	U.F	ч.u	De l	ч.u	l ead	l ead	
Lead-Lag Ontimize?			Vas		Vac	Vac	
Recall Mode	C_May	C-May	None	Dod	Dod	Dod	
Act Effet Green (s)	62.0	62.0	10 NOTE	/Q Q	21 F	21 5	
Actuated a/C Datio	03.Z	05.2	40.0 0.41	40.0 0.41	0.16	0.10	
NCLUAIEU Y/C KAIIU	0.03	0.03	0.41	0.41	0.20	0.20	
V/C RallU	0.13	0.01	0.70	0.49	0.00	0.00	
Cullino Delay	10.2	21.1	43.0	21.9	39.3	0.10	
Queue Delay	0.0	0.0	0.0	0.0	0.0	U.U E1.0	
Total Delay	10.2	21.1	43.0	21.9	39.3	51.0	
LUS	В	24.4	D	247	D	D	
Approach Delay		20.0		34.7	44.7		
Approach LUS	10.0	0	01 (005	U	(5.7	
Queue Length 50th (m)	13.8	141.1	31.6	38.5	45.7	65./	
Queue Length 95th (m)	23.5	#198.4	M39. I	M46.3	61.2	#113.6	
Internal Link Dist (m)	40.0	110.3		152.2	/3.8	22.0	
Turn Bay Length (m)	40.0	0.407	470	0/0	0/0	22.0	
Base Capacity (vph)	1/19	2496	4/2	862	960	4/2	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.81	0.63	0.41	0.47	0.80	
Intersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 16 (13%). Referenced to pha	ase 6:WBTL	Start of Gre	en				
Natural Cycle: 80	130 0.WDTE,		011				
Control Type: Actuated-Coordinated	1						
Maximum v/c Ratio: 0.85							
Intersection Signal Delay: 32.0				Ini	tersection I	05.0	
Intersection Capacity Litilization 100	8%				III evel of 9	Service G	
Analysis Period (min) 15				10	5 20101 01 0		
# 95th percentile volume exceeds	capacity our	eue may he	longer				
Oueue shown is maximum after	two cyclos	cae may be	iongoi.				
m Volume for 95th percentile queu	ue is metered	l by upstrea	m signal.				
Solits and Phases 6. Kirkwood &	Carling WR						
					4 04		▲ (72)
					▼ 0/4		1 03
-					38 8		24 S
Ø6 (R)					1 08		
50 -					67.0		

58 :

Future 2025 AM 7: Kirkwood & Carling EB

	٨	+	*	1	*	×	ţ
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations	5	441	1	**	1	ň	*
Traffic Volume (vph)	187	2187	422	407	399	484	252
Future Volume (vph)	187	2187	422	407	399	484	252
Lane Group Flow (vph)	177	2322	444	428	420	509	265
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA
Protected Phases		2		8		7	4
Permitted Phases	2	-	2		8	4	•
Detector Phase	2	2	2	8	8	7	4
Switch Phase	-	-	-	Ū	Ū	•	•
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1
Total Split (s)	58.0	58.0	58.0	38.0	38.0	24.0	62.0
Total Split (%)	48.3%	48.3%	48.3%	31.7%	31.7%	20.0%	51.7%
Vellow Time (s)	37	37	37	33	2 3	20.070	33
All-Red Time (s)	2.5	2.5	2.5	2.8	2.8	1.8	2.8
Lost Time Adjust (s)	_2.3	-2.5	-2.3	-2.0	-2.0	-11	-2.0
Total Lost Time (s)	1.0	1.0	1.0	10	1.0	1.1	1.0
	4.0	4.0	4.0	0. P	0. P	0.P	4.0
Lead-Lag Ontimize?				Vac	Vac	Vac	
	C May	C Max	C Max	Min	Min	Min	Min
Act Effet Green (s)	51 0	51 0	51 0	24.0	24.0	1VIII 1 5.2 0	58.0
Actuated a/C Datio	0.45	0.45	0.45	0.20	0 20	0.10	0.10
v/c Patio	0.40	0.40	0.45	0.20	0.20	0.40	0.40
Control Dolay	0.27	1.12	10.00	0.40	0.70	0.10	12 7
	22.1	73.7	10.2	37.1	01.0	00.9	13.7
Queue Delay	0.0	0.0	10.0	0.0	0.0	0.0	0.0 12 7
	22.1	93.7 F	10.Z	37.1	01.0 F	00.9 F	I.J. /
LUS Approach Dolou	U	F 74 0	В	D	F	F	61 O
Approach LOS		/0.ŏ		39.Z			01.0
Approach LOS	20 (L	21.0	L () L	00.1	100.0	12 D
Queue Length SUIN (M)	29.6	~244.3	21.8	43.5	98.1 #141.0	~123.0	22.8
Queue Lengin 95in (m)	48.2	#2/4.3	51.8	58./	#101.8	#204.6	32.0
Internal LINK DISt (M)	40.0	101.0		158.6	00.0		152.2
Turn Bay Length (m)	40.0	0071	000	0/0	90.0	171	0/0
Base Capacity (vph)	655	20/1	808	960	429	4/1	862
Starvation Cap Reductin	0	0	0	0	0	0	0
Spillback Cap Reductin	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	1.12	0.55	0.45	0.98	1.08	0.31
Intersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120							
Offset: 16 (13%) Referenced to pha	se 2·FBTL 4	Start of Gree	'n				
Natural Cycle: 110	50 Z.LDTL, (
Control Type: Actuated-Coordinated							
Maximum v/c Patio: 1.12							
Intersection Signal Delay: 71.0				In	orsoction L	UC E	
Intersection Capacity Litilization 100	00/					US. E Sonvico C	
Analysis Daried (min) 15	.0 /0			IC	U Level UI	Service G	
Analysis Periou (IIIII) 15	la theoretia	ally infinito					
~ Volume exceeds capacity, queue		any minine.					
	wo cycles.						
# 95th percentile volume exceeds	capacity, que	eue may be	longer.				
Queue shown is maximum after t	wo cycles.						
Splits and Phases: 7: Kirkwood &	Carling EB						
402 (R)					04		
58 s					62 s		
					Ø7		

Synchro 9 - Report

Lane Group	
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Lane Group Flow (vph)	
Sign Control	
Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 0.0%	ICU Level of Service A

Analysis Period (min) 15

Future 2025 PM 2: Merivale & Westgate SC

	۶	•	1	Ŧ	4	
Lane Group	EBL	NBL	NBT	SBT	SBR	
Lane Configurations	W	*	٨	٨	1	
Traffic Volume (vph)	82	84	200	491	99	
Future Volume (vph)	82	84	200	491	99	
Lane Group Flow (vph)	185	88	211	517	104	
Turn Type	Prot	Perm	NΔ	NΔ	Perm	
Protected Phases	4	1 GHH	2	6	T GHH	
Permitted Phases	-	2	2	0	6	
Detector Phase	4	2	2	6	6	
Switch Phase	т	2	2	0	0	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	24.0	24.0	24.0	25 Q	25 Q	
Total Split (s)	24.0	24.0	24.0	26.0 26.0	30.0	
Total Split (%)	24.0	50.0 60.0%	50.0 60.0%	50.0 60.0%	50.0 60.0%	
Vollow Timo (s)	40.070	00.070	00.070	00.070	00.070	
All Dod Time (s)	3.3	3.3	3.3	3.3	3.3 DE	
All-Red Time (S)	2.2	2.5	2.5	2.5	2.5	
LUST TIME AUJUST (S)	0.0	0.0	0.0	0.0	0.0	
I OTAI LOST I IME (S)	5.5	5.8	5.8	5.8	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	10.9	37.8	37.8	37.8	37.8	
Actuated g/C Ratio	0.18	0.63	0.63	0.63	0.63	
v/c Ratio	0.49	0.18	0.19	0.46	0.10	
Control Delay	15.7	2.9	2.5	7.8	1.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.7	2.9	2.5	7.8	1.6	
LOS	В	А	А	А	А	
Approach Delay	15.7		2.6	6.8		
Approach LOS	В		А	А		
Queue Length 50th (m)	8.5	0.7	1.7	23.5	0.0	
Queue Length 95th (m)	22.0	1.6	3.1	49.6	4.7	
Internal Link Dist (m)	28.7		87.9	55.1		
Turn Bay Length (m)		40.0			40.0	
Base Capacity (vph)	567	486	1122	1122	993	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	11	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.18	0.19	0.47	0.10	
	0.00	0.10	0.17	0.17	0.10	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60						
Offset: 6 (10%), Referenced to phase	e 2:NBTL an	d 6:SBT, St	art of Greer	ı		
Natural Cycle: 60		,				
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.49						
Intersection Signal Delay: 7.1				In	tersection I (<u>λ</u> .Σ
Intersection Capacity Litilization 60.7	%					ervice R
Analysis Period (min) 15	/0			10		
Analysis r enou (min) 15						
Splits and Dhasas 2: Mariuala 8 M	Voctanto SC					
	vesiyale SC	,				
Ø2 (R)						<u> </u>
36 s						24 4
4						

Ø6 (R) 36 s

Future 2025 PM 3: Merivale & Carling

	→	\mathbf{r}	4	←	•	•	Ť	1	>	Ļ	4	
Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	<u></u>	1	ľ	<u></u>	1	ľ	•	1	ľ	•	1	
Traffic Volume (vph)	927	114	349	1543	40	176	218	185	51	292	188	
Future Volume (vph)	927	114	349	1543	40	176	218	185	51	292	188	
Lane Group Flow (vph)	976	120	367	1624	42	185	229	195	54	307	198	
Turn Type	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	2		1	6		3	8		7	4		
Permitted Phases		2	6		6			8			4	
Detector Phase	2	2	1	6	6	3	8	8	7	4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	29.0	29.0	10.4	29.0	29.0	11.3	37.7	37.7	11.3	37.7	37.7	
Total Split (s)	39.6	39.6	25.0	64.6	64.6	17.7	41.8	41.8	13.6	37.7	37.7	
Total Split (%)	33.0%	33.0%	20.8%	53.8%	53.8%	14.8%	34.8%	34.8%	11.3%	31.4%	31.4%	
Yellow Lime (s)	3.7	3.7	3.7	3.7	3.7	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.3	2.3	1.7	2.3	2.3	3.0	3.4	3.4	3.0	3.4	3.4	
Lost Time Adjust (s)	-2.0	0.0	-1.4	-2.0	0.0	-2.3	-2.7	-2.7	-2.3	-2.7	-2.7	
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lead	Lag			Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None	
Act Effct Green (s)	41.1	39.1	66.1	66.1	64.1	13.7	35.1	35.1	9.3	28.2	28.2	
Actuated g/C Ratio	0.34	0.33	0.55	0.55	0.53	0.11	0.29	0.29	0.08	0.24	0.24	
v/c Ratio	0.84	0.22	1.00	0.87	0.05	0.96	0.44	0.35	0.42	0.73	0.44	
Control Delay	34.5	1.4	90.7	30.7	0.1	108.1	37.5	6.0	59.9	46.8	13.0	
Queue Delay	15.2	0.0	0.0	12.7	0.0	0.0	0.0	0.0	0.0	1.1	0.7	
I otal Delay	49.7	1.4	90.7	43.4	0.1	108.1	37.5	6.0	59.9	48.0	13.8	
LOS	D	A	F	D	A	F	D	A	E	D	В	
Approach Delay	44.4			51.1			48.9			37.0		
Approach LOS	D	0.0	70.0	D	0.0	11.0	D	0.0	40 (D	10.0	
Queue Length 50th (m)	115.7	0.3	~/0.0	169.8	0.0	44.0	44.7	0.0	12.6	55.5	10.9	
Queue Length 95th (m)	#154.8	0.9	#135.5	#240.3	0.0	#88.3	64.9	16.2	26.0	/3.0	24.2	
Internal Link Dist (m)	81.2	25.0	00.0	139.3	25.0	40.0	110.3		10.0	87.9	70.0	
Turn Bay Lengin (m)	11/0	25.0	90.0	10//	25.0	40.0	F()	500	40.0	F.0.1	/0.0	
Base Capacity (vpn)	100	554	367	1800	/84	193	562	593	135	501	510	
Starvation Cap Reductn	191	0	0	0	0	0	0	0	0	63	110	
Spillback Cap Reductin	0	0	0	257	0	0	0	0	0	0	0	
Storage Cap Reductin	1 01	0 22	1 00	1 01	0.05	0.04	0 41	0 22	0 40	0 70	0 5 1	
Reduced V/C Rallo	1.01	0.22	1.00	1.01	0.05	0.90	0.41	0.55	0.40	0.70	0.01	
Intersection Summary												
Cycle Length: 120												
Actuated Cycle Length: 120												
Offset: 92 (77%), Referenced to phas	e 2:EBT an	d 6:WBTL,	Start of Gre	en								
Natural Cycle: 120												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.00												
Intersection Signal Delay: 47.2				In	tersection L	.OS: D						
Intersection Capacity Utilization 91.89	I.8% ICU Level of Service F											
Analysis Period (min) 15												
 Volume exceeds capacity, queue 	eue is theoretically infinite.											
Queue shown is maximum after tw	o cycles.											
# 95th percentile volume exceeds c	apacity, que	eue may be	longer.									
Queue shown is maximum after tw	o cycles.											
Splits and Phases: 3: Merivale & C.	arling											
→ Ø2 (R)			Ø1			1 Ø3		4 Ø4				
· · · · · · · · · · · · · · · · · · ·												

	√ Ø1	Ø3	🗳 Ø4
39.6 s	25 s	17.7 s	37.7 s
Ø6 (R)		Ø7	Ø8
64.6 s		13.6 s	41.8 s

Future 2025 PM 4: Carling & Westgate SC E

	•	٦	+	•	4	-	×.	•	Ť	1	ţ	~
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		2	<u>††</u>	1	ሻ	††	1		4		स ्	1
Traffic Volume (vph)	70	188	748	12	7	1889	120	10	5	115	1	96
Future Volume (vph)	70	188	748	12	7	1889	120	10	5	115	1	96
Lane Group Flow (vph)	0	272	787	13	7	1988	126	0	29	0	122	101
Turn Type	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	5	2			6			8		4	
Permitted Phases	2	2		2	6		6	8		4		4
Detector Phase	5	5	2	2	6	6	6	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.6	10.6	23.6	23.6	23.6	23.6	23.6	37.0	37.0	37.0	37.0	37.0
Total Split (s)	24.0	24.0	83.0	83.0	59.0	59.0	59.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	20.0%	20.0%	69.2%	69.2%	49.2%	49.2%	49.2%	30.8%	30.8%	30.8%	30.8%	30.8%
Yellow Lime (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.9	1.9	1.9	1.9	1.9	1.9	1.9	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)		-1.6	-1.6	0.0	-1.6	-1.6	0.0		-3.0		-3.0	-3.0
I otal Lost Time (s)	امم	4.0	4.0	5.6	4.0	4.0	5.6		4.0		4.0	4.0
Lead/Lag	Lag	Lag			Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	0.14-1	0.14-1	Yes	Yes	Yes	N.L	N.L	N	N.L	Nerre
Recall Mode	ivone	None	C-IVIAX	C-IVIAX	C-IVIAX	C-IVIAX		None	None	None	None	None
Act Elici Green (S)		90.7	90.7	89.1	00./	00./	05.1		21.3		21.3	21.3
Actualed g/C Rallo		0.70	0.70	0.74	0.50	0.50	0.54		0.18		0.18	0.18
V/C Rallo		0.80	0.31	0.01	0.02	I.U0 E1 0	0.10		0.11		0.00	0.30
Control Delay		59.7	3.0	0.3	12.3	51.2	3.9		25.0		53.4	9.2
Queue Delay		0.0	0.1	0.0	0.0	. ED D	0.0		0.0		U.I	0.0
		59.7 F	3.7	0.3	IZ.3	5Z.3	3.9		25.0		D 03.0	9.2
LUS Approach Dolay		E	17 0	А	В	10 2	A		25.0		22 F	А
Approach LOS			17.9 D			47.J			20.0		33.0 C	
Appilden LOS Queue Longth E0th (m)		10 E	D 4 4	0.0	0.2	U ۲ ۲ ۸	0.4		20		24.0	0.0
Queue Length 95th (m)		40.0 #02.0	62.0	0.0 m0.4	0.3 m0.9	~207.4 m#250.2	0.4 m2.0		3.Z 10.2		20.0	12.0
Internal Link Dict (m)		#73.0	112.0	1110.4	1110.0	01.0	1112.0		26.4		40.0	13.0
Turn Bay Length (m)		100.0	113.0	25.0	<i>4</i> 5 0	01.2	25.0		20.4		30.7	
Base Canacity (vnh)		3/12	2561	1017	4J.0 210	1883	780		/07		227	173
Starvation Can Reductn		0	753	0	0	5	09		407		0	473
Snillback Can Reductn		0	305	0	0	0	0		23		19	0
Storage Can Reductn		0	0	0	0	0	0		0		0	0
Reduced v/c Ratio		0.80	0.44	0.01	0.02	1.06	0.16		0.08		0.38	0.21
Interception Summon												
Cycle Length: 120												
Actuated Cycle Longth: 120												
Offset: 96 (80%) Referenced to phase	2.FBTL a	nd 6·WRTI	Start of Gr	oon								
Natural Cycle: 120	, 2.LDTL 0			CON								
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 1.06												
Intersection Signal Delay: 38.3				In	tersection	10S·D						
Intersection Capacity Utilization 118 49	%			IC	LL evel of	Service H						
Analysis Period (min) 15	0			10	O LEVELOI	Scivice II						
 Volume exceeds capacity, queue is 	s theoretic	ally infinite.										
Oueue shown is maximum after two	o cycles	any minito.										
 95th percentile volume exceeds ca 	nacity que	eue may he	longer									
Oueue shown is maximum after two	cycles.	oue may be	iongor.									
m Volume for 95th percentile queue i	is metered	by upstrea	m signal.									
Splits and Phases: 4: Carling & Wes	stgate SC I	E										
Ø2 (R)	<u> </u>							\$×ø4				
02 6								27.0				

₩ø2 (R)		∲ ø4	
83 s		37 s	
Ø6 (R)	⋬ _{Ø5}	≪ ¶ø8	
59 s	24 s	37 s	

Future 2025 PM 5: Carling & Westgate SC W

	-	-	•	1
Lane Group	FBT	WBT	WBR	SBL
Lane Configurations	**	**	1	M
Traffic Volume (vnb)	023	1858	7	25
Future Volume (vph)	723	1050	7	20
Lane Group Flow (vph)	723	1050	7	20
	972	1900	/ Dorm	00 Drot
Tulli Type	NA 2	NA 4	Perm	PIOL
Protected Phases	Z	0	1	4
Permitted Phases	2	/	0	
Delector Phase	2	6	0	4
Switch Phase		40.0	40.0	
Minimum Initial (s)	10.0	10.0	10.0	10.0
Minimum Split (s)	24.1	42.3	42.3	37.1
Total Split (s)	82.9	82.9	82.9	37.1
Total Split (%)	69.1%	69.1%	69.1%	30.9%
Yellow Time (s)	3.7	3.7	3.7	3.0
All-Red Time (s)	1.6	1.6	1.6	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.3	5.3	5.3	6.1
Lead/Lag	0.0	0.0	0.0	0.1
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	None
Act Effet Groop (s)	102.0	102.0	102.0	10.0
Actuated a/C Datio	0.05	0.05	0.05	10.9
Actualeu y/C Kallo	0.00	0.60	0.00	0.09
	0.34	0.68	0.01	0.42
Control Delay	3.1	3.9	0.3	46.8
Queue Delay	0.0	0.4	0.0	0.0
Total Delay	3.1	4.4	0.3	46.8
LOS	A	А	А	D
Approach Delay	3.1	4.4		46.8
Approach LOS	А	А		D
Queue Lenath 50th (m)	27.5	5.2	0.0	11.3
Oueue Length 95th (m)	50.1	m27.2	m0.0	25.1
Internal Link Dist (m)	42.6	113.0		40.2
Turn Bay Length (m)	12.0	113.0	25.0	10.2
Rase Canacity (unb)	2001	2001	100	107
Staniation Can Doducto	2001	2001	1209	427
Starvation Cap Reductin	0	419	0	0
Spiliback Cap Reducth	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.79	0.01	0.16
Intersection Summary				
Cycle Length: 120				
Actuated Cycle Longth: 120				
Actuated Cycle Length: 120			last of Ore	
Uffset: 95 (79%), Referenced to phase	se 2:EBT an	a 6:WBT, S	tart of Greei	n
Natural Cycle: 100				
Control Type: Actuated-Coordinated				
Maximum v/c Ratio: 0.68				
Intersection Signal Delay: 4.9				Ir
Intersection Capacity Utilization 72.09	%			10
Analysis Period (min) 15				
m Volume for 95th percentile queue	e is metered	by upstrea	m signal.	
Splits and Phases: 5: Carling & We	estaate SC \	N		

, → Ø2 (R)	▶ø4
82.9 s	37.1 s
Ø6 (R)	
82.9 s	

Future 2025 PM 6: Kirkwood & Carling WB

	∢	←	1	Ť	Ļ	1	
Lane Group	WBL	WBT	NBL	NBT	SBT	SBR	
Lane Configurations	ካካ	4 4 16	5	•	**	1	
Traffic Volume (vph)	234	2694	227	602	553	410	
Future Volume (vph)	234	2694	227	602	553	410	
Lane Group Flow (vph)	246	3170	239	634	582	432	
Turn Type	Perm	NA	pm+pt	NA	NA	Perm	
Protected Phases		6	3	8	4		
Permitted Phases	6		8			4	
Detector Phase	6	6	3	8	4	4	
Switch Phase							
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0	
Minimum Split (s)	35.3	35.3	11.0	29.0	29.0	29.0	
Total Split (s)	78.0	78.0	11.0	42.0	31.0	31.0	
Total Split (%)	65.0%	65.0%	9.2%	35.0%	25.8%	25.8%	
Yellow Time (s)	3.7	3.7	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.6	2.6	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	-2.3	-2.3	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes		Yes	Yes	
Recall Mode	C-Max	C-Max	None	Ped	Ped	Ped	
Act Effct Green (s)	74.0	74.0	38.0	38.0	27.0	27.0	
Actuated g/C Ratio	0.62	0.62	0.32	0.32	0.22	0.22	
V/c Ratio	0.12	1.08	1.37	1.12	0.76	1.12	
Control Delay	6.2	58.6	226.5	98.3	51.1	119.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.2	58.6	226.5	98.3	51.1	119.1	
LUS	А	E E	F	100 /	D	F	
Approach Delay		54.8		133.4	80.1		
Approach LOS	ΕO	20E 4	E4 0	175 7	F (7.0	101.2	
Queue Length 95th (m)	5.8 12.4	~305.4 #220 0	~50.8 m#10/ 2	~1/5./ #221 4	07.9	~101.3 #142 ⊑	
Internal Link Dist (m)	13.0	#JZ0.U	11#104.3	#ZJI.0	00.Z	#103.5	
Turn Bay Longth (m)	10.0	113.3		144.7	/3.0	22.0	
Rase Canacity (yph)	2015	202/	17/	564	760	22.0	
Starvation Can Reducto	2015	2734 0	0	0	102		
Snillback Can Reductn	0	0	0	0	0	0	
Storage Can Reductin	0	0	0	0	0	0	
Reduced v/c Ratio	0.12	1.08	1 37	1 1 2	0.76	1 13	
	0.12	1.00	1.37	1.12	0.70	1.15	
Intersection Summary							
Cycle Length: 120							
Actuated Cycle Length: 120	,						
Utrset: 119 (99%), Referenced to pha	ase 6:WBTL	, Start of G	reen				
Natural Cycle: 120							
Control Type: Actuated-Coordinated							
Interportion Signal Delaw 72.4				J., 1	orocollars		
Intersection Signal Delay: 72.6	0%			Int	LE outline L	US: E	
Analysis Deried (min) 15	U %			IC	U Level of S	Selvice H	
Milling avoads capacity guous	is theoretic	ally infinito					
Ouque shown is maximum after th		any minine					
# 95th percentile volume exceeds	no cycles.	alle may be	longer				
Oueue shown is maximum after th	vo cyclos	eue may De	ionger.				
m Volume for 95th percentile queue	e is matarad	hy unstrag	am signal				
m volume for sour percentile queur		by upsiled	ini siyilal.				
Splits and Phases: 6: Kirkwood &	Carling WB						
							▲ _{Ø2} ▲ _Ø
							11 c 31 c

Future 2025 PM 7: Kirkwood & Carling EB

	٦	+	*	1	1	*	ţ	
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT	
Lane Configurations	5	4412	1	**	1	5	•	
Traffic Volume (vph)	419	1457	405	362	308	441	338	
Future Volume (vph)	419	1457	405	362	308	441	338	
Lane Group Flow (vph)	392	1583	426	381	324	464	356	
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	
Protected Phases		2		8		7	4	
Permitted Phases	2		2		8	4		
Detector Phase	2	2	2	8	8	7	4	
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	29.2	29.2	29.2	26.1	26.1	10.1	26.1	
Total Split (s)	54.0	54.0	54.0	37.0	37.0	29.0	66.0	
Total Split (%)	45.0%	45.0%	45.0%	30.8%	30.8%	24.2%	55.0%	
Yellow Time (s)	3.7	3.7	3.7	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.5	2.5	2.5	2.8	2.8	1.8	2.8	
Lost Time Adjust (s)	-2.2	-2.2	-2.2	-2.1	-2.1	-1.1	-2.1	
Iotal Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead Log Optimized				Lead	Lead	Lag		
Leau-Lag Uptimize?	0.14	C Maria	C Maria	Yes	Yes	Yes	N 41	
Recall Mode	C-IVIAX	C-Max	C-IVIAX	Min	Min	Min	Min	
Actuated a/C Datic	DZ./	5Z.7	5Z.7	30.0	30.0	0.40	0.40	
Actualed y/C Kallo	0.44	0.44	0.44	0.20	0.20	0.49	0.49	
V/C RdIIU	21.0	22.0	0.01	20.0	0.04 61 7	0.05	0.40	
	0.0	33.0	7.0	30.0 0.2	01.7	20.1	7.0	
Total Delay	21.0	23.0	0.0	20.1	61.7	28.1	0.0	
	51.7 C	55.0 C	Λ.0	57.1 D	01.7 F	20.1	Λ.0	
Approach Delay	C	28.2	~	49.5	L	C	19.2	
Approach LOS		20.2		47.5 D			17.2 R	
Oueue Length 50th (m)	84 3	126.6	97	38.6	70 5	54.4	17 1	
Queue Length 95th (m)	124 5	147.5	35.1	52.8	#111 9	#94.0	m21.0	
Internal Link Dist (m)	12 110	161.6	0011	158.6			144.7	
Turn Bay Length (m)	40.0	10110		10010	90.0			
Base Capacity (vph)	639	2019	829	932	417	572	921	
Starvation Cap Reductn	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	155	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.61	0.78	0.51	0.49	0.78	0.81	0.39	
Intersection Summary								
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 120		Start of Cray	n					
Natural Cycle: 70	Se Z:EBTL, 3	Start of Gree	11					
Control Type: Actuated Coordinated								
Maximum v/c Datio: 0.94								
Intersection Signal Delay: 20.1				In	torcoction L			
Intersection Canacity Utilization 116	۵%					US. C Sonvico H		
Analysis Daried (min) 15	.0 /0			IC	U Level UI	DEIVICETT		
# 95th percentile volume exceeds	canacity que	eue may he	longer					
Oueue shown is maximum after the	wo cycles	eue may be	ionger.					
m Volume for 95th percentile queu	e is metered	by unstream	n signal					
		by upsilea	n signai.					
Splits and Phases: 7: Kirkwood &	Carling EB							
/ → Ø2 (R)				•	Ø4			
54 s				66 s	3			
				<u> </u> 1	08			
					90			

Future 2025 PM 10: Carling EB/Carling & Carling WB

	+	*	
Lane Group	EBT	WBR	
Lane Configurations	<u>^</u>	11	
Traffic Volume (vph)	1075	1868	
Future Volume (vph)	1075	1868	
Lane Group Flow (vph)	1132	1966	
Sign Control	Free		
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 72.3%			ICU Level of Service C
Analysis Period (min) 15			