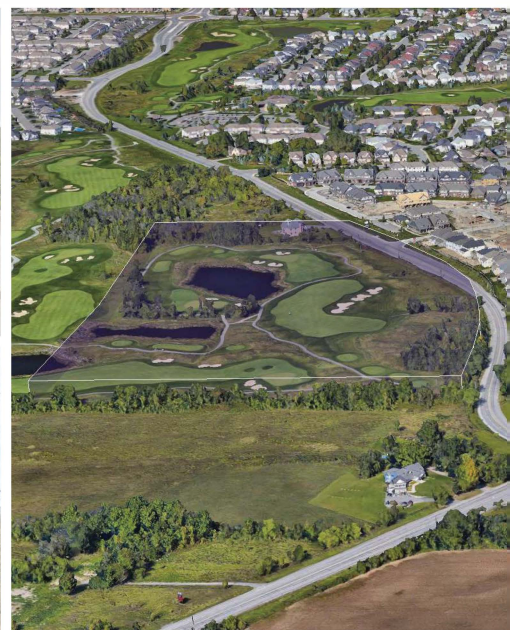




**Transportation Impact Assessment
Strategy Report**

Mattamy 2701 Longfields Drive



Mattamy 2701 Longfields Drive

TIA Strategy Report

Prepared for:
Mattamy Homes
50 Hines Road, Suite 100
Ottawa, ON K2K 2M5

prepared by:
PARSONS
1223 Michael Street North
Suite 100
Ottawa, ON K1J 7T2

October 16, 2019

476616 – 01000



TIA Plan Reports

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

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

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

CERTIFICATION


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

Dated at Ottawa this 16 day of October, 2019.
(City)

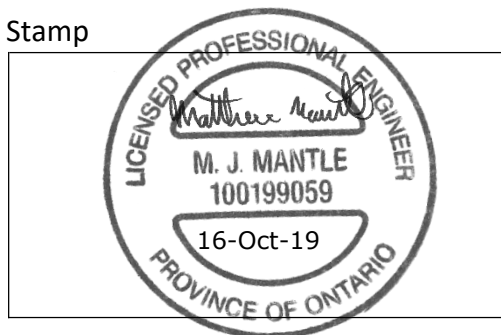
Name: Matthew Mantle
(Please Print)

Professional Title: Transportation Engineer


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

Office Contact Information (Please Print)
Address: 1223 Michael Street
City / Postal Code: Ottawa K1J 7T2
Telephone / Extension: 613 – 691 - 1528
E-Mail Address: matthew.mantle@parsons.com

Stamp



Document Control Page

CLIENT:	Mattamy Homes
PROJECT NAME:	Mattamy 2701 Longfields Drive
REPORT TITLE:	TIA Strategy Report
PARSONS PROJECT NO:	476616-01000
VERSION:	
DIGITAL MASTER:	\\XCCAN57FS01\Data\ISO\476616\1000\DOCS\4-Strategy\476616_2701_Longfields_Strategy_Report_09192019.docx
ORIGINATOR	Juan Lavin, E.I.T.
REVIEWER:	Matthew Mantle, P. Eng.
AUTHORIZATION:	
CIRCULATION LIST:	Rosanna Baggs, CET
HISTORY:	Previous TIA Step 4 Strategy Report – May 10 th , 2018 Resubmission TIA Step 4 Strategy Report – October 16 th , 2019

TABLE OF CONTENTS

1. SCREENING FORM.....	1
2. SCOPING REPORT.....	1
2.1. EXISTING AND PLANNED CONDITIONS.....	1
2.1.1. PROPOSED DEVELOPMENT.....	1
2.1.2. EXISTING CONDITIONS.....	3
2.1.3. PLANNED CONDITIONS.....	7
2.2. STUDY AREA AND TIME PERIODS.....	8
2.3. EXEMPTION REVIEW.....	9
3. FORECASTING REPORT.....	10
3.1. DEVELOPMENT-GENERATED TRAVEL DEMAND.....	10
3.1.1. TRIP GENERATION RATES AND MODE SHARES.....	10
3.1.2. TRIP DISTRIBUTION AND ASSIGNMENT.....	12
3.2. BACKGROUND NETWORK TRAVEL DEMANDS.....	12
3.2.1. TRANSPORTATION NETWORK PLANS.....	12
3.2.2. BACKGROUND GROWTH.....	12
3.2.3. OTHER DEVELOPMENTS.....	13
3.2.4. BACKGROUND TRAFFIC GROWTH.....	13
3.3. DEMAND RATIONALIZATION.....	15
3.3.1. EXISTING CAPACITY ISSUES.....	15
4. STRATEGY REPORT.....	15
4.1. DEVELOPMENT DESIGN.....	15
4.1.1. MULTI-MODAL FACILITIES.....	15
4.1.2. VEHICLE ACCESS.....	16
4.1.3. NEW STREET NETWORK.....	16
4.2. PARKING SUPPLY.....	16
4.3. BOUNDARY STREET DESIGN.....	16
4.4. ACCESS INTERSECTION DESIGN.....	17
4.5. TRANSPORTATION DEMAND MANAGEMENT.....	17
4.6. ROUTE CAPACITY.....	17
4.7. INTERSECTION DESIGN.....	18
4.7.1. MULTI-MODAL LEVEL OF SERVICE.....	18
4.7.2. PROJECTED BACKGROUND 2021 OPERATIONS.....	18
4.7.3. PROJECTED BACKGROUND 2026 OPERATIONS.....	19
4.7.4. FUTURE PROJECTED 2021 CONDITIONS.....	19
4.7.5. FUTURE PROJECTED 2026 CONDITIONS.....	20
5. SUMMARY OF FINDINGS.....	21

List of Tables

TABLE 1: EXEMPTIONS REVIEW SUMMARY	9
TABLE 2: ADDITIONAL RECOMMENDED EXEMPTIONS SUMMARY	9
TABLE 3: VEHICLE TRIP GENERATION RATES	10
TABLE 4: PROJECTED VEHICLE TRIP GENERATION	10
TABLE 5: SITE 'PERSON TRIPS' GENERATED – SINGLE FAMILY HOMES	10
TABLE 6: SITE 'PERSON TRIPS' GENERATED – TOWNHOMES	11
TABLE 7: TOTAL SITE 'PERSON TRIPS' GENERATED – COMBINED	11
TABLE 8: OD-SURVEY ESTIMATED	11
TABLE 9: 2011 OD-SURVEY TOTAL SITE 'VEHICLE TRIPS' GENERATED	11
TABLE 10: EXISTING INTERSECTION PERFORMANCE	15
TABLE 11: MMLOS –ROAD SEGMENTS ADJACENT TO THE SITE	17
TABLE 12: TRANSIT CAPACITY AT ADJACENT TRANSIT STOPS	18
TABLE 13: MMLOS – INTERSECTIONS	18
TABLE 14: PROJECTED BACKGROUND 2021 OPERATIONS AT STUDY AREA INTERSECTIONS	19
TABLE 15: PROJECTED BACKGROUND 2026 OPERATIONS AT STUDY AREA INTERSECTIONS	19
TABLE 16: FUTURE TOTAL PROJECTED INTERIM 2021 OPERATIONS AT STUDY AREA INTERSECTIONS	20
TABLE 17: FUTURE TOTAL PROJECTED ULTIMATE 2026 BUILDOUT OPERATIONS AT STUDY AREA INTERSECTIONS	21

LIST OF FIGURES

FIGURE 1: LOCAL CONTEXT	1
FIGURE 2: PROPOSED SITE PLAN	2
FIGURE 3: AREA TRANSIT NETWORK	5
FIGURE 4: EXISTING PEAK HOUR TRAFFIC VOLUMES	6
FIGURE 5: LONGFIELDS DRIVE WIDENING – PRELIMINARY DESIGN	7
FIGURE 6: STUDY AREA	9
FIGURE 7: SITE GENERATED TRAFFIC	12
FIGURE 8: PROJECTED BACKGROUND TRAFFIC VOLUMES FROM UNIFORM	13
FIGURE 9: 2021 BACKGROUND TRAFFIC VOLUMES	14
FIGURE 10: 2026 BACKGROUND TRAFFIC VOLUMES	14
FIGURE 11: FUTURE PROJECTED INTERIM 2021 CONDITIONS	20
FIGURE 12: FUTURE PROJECTED 2026 ULTIMATE CONDITIONS	21

List of Appendices

APPENDIX A – Screening Form
APPENDIX B – Traffic Counts
APPENDIX C – Collision Data
APPENDIX D – Existing Conditions SYNCHRO Analysis
APPENDIX E – Preliminary Design Sketch Longfields Drive Widening
APPENDIX F – MMLOS Segment Analysis
APPENDIX G – OC-Transpo Ridership Data
APPENDIX H – MMLOS Intersections
APPENDIX I – Background Conditions SYNCHRO Analysis
APPENDIX J – Future Conditions SYNCHRO Analysis

Strategy Report

Parsons has been retained by Mattamy Homes to prepare a Transportation Impact Assessment (TIA) in support of a Zoning By-Law Amendment application for a residential development located at 2701 Longfields Drive. The following report represents an updated Step 4 – TIA Strategy Report Submission, of the TIA process.

1. SCREENING FORM

The screening form was submitted in conjunction with the Scoping Report for the subject development to the City of Ottawa staff for review and confirmation of the need for a TIA. Trip generation triggers were met based on the size of the development. The safety triggers were met based on the proposed site access connection to a proposed roundabout on Longfields Drive at the Kilspindie Ridge intersection. The Screening Form is provided as Appendix A.

2. SCOPING REPORT

2.1. EXISTING AND PLANNED CONDITIONS

2.1.1. PROPOSED DEVELOPMENT

The proposed residential subdivision at 2701 Longfields Drive is an expansion of the Stonebridge Community. The current lot is occupied by a golf course. The lot is zoned as Parks and Open Space (O1A) with the permitted uses including park, environmental preserve, urban agriculture, farmer's market and golf course. The proposed development will include 184 residential units, with 94 single family homes and 90 executive townhomes, thus requiring to be rezoned prior to construction. The proposed site access is via a roundabout which will be located at the Kilspindie Ridge intersection with Longfields Drive. The estimated date of occupancy is 2021 with one phase of development. The local context of the site is provided as Figure 1 and the proposed Site Plan is provided as Figure 2.

Figure 1: Local Context








Figure 2 : Proposed Site Plan



Stonebridge

Lot Count

	21' Widelot TH	90
	32' Single	25
	38' Single	35
	38'C Single	9
	46' Single	25
Total		184

2.1.2. EXISTING CONDITIONS

Area Road Network

The following City owned roads are within the study area network:

Longfields Drive is a north-south arterial road in Barrhaven South, extending from Bill Leathem Drive, through Barrhaven to Prince of Wales Drive. Within the proposed Study Area, Longfields Drive is a two-lane rural roadway with a posted speed limit of 70km/h. Longfields Drive is also identified as a trucking route.

Prince of Wales Drive is a north-south arterial road in Barrhaven South, generally following the Rideau River to the north and extending to the southwest before ending in North Gower. Within the proposed Study Area, Prince of Wales is a four-lane rural roadway with a posted speed limit of 80km/h. South of the Longfields intersection, Prince of Wales Drive narrows to a two-lane roadway. Prince of Wales is also identified as a trucking route.

Golflinks Drive is a two-lane collector road that loops through the Stonebridge community on the east side of Longfields Drive, connecting to the Longfields Drive and Cambrian Road roundabout and a t-intersection between Cambrian Road and Prince of Wales Drive. The road has a posted speed of 40km/h.

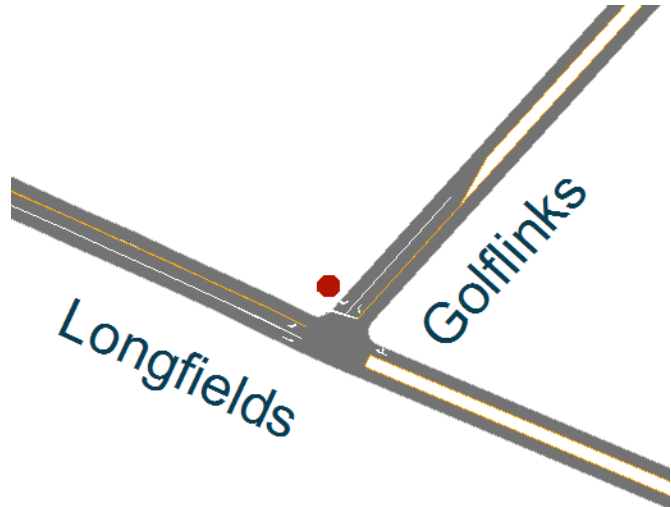
Kilspindie Ridge is an east-west local road that serves to provide access to the Orchard subdivision. The road has an unposted speed limit that is assumed to be 40km/h.

A residential driveway is located at 2741 Longfields Drive.

Existing Study Area Intersections

Golflinks/Longfields

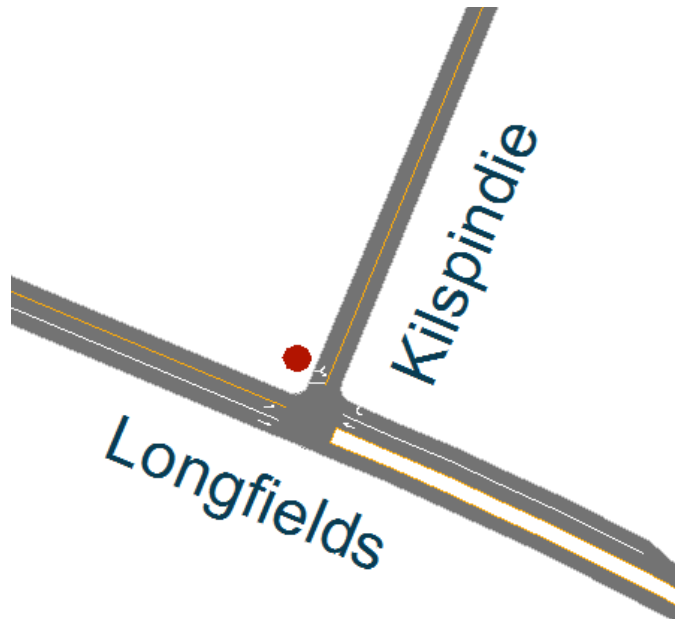
Golflinks/Longfields is an existing 3-legged intersection with stop-control on the minor approach. The southbound approach consists of a left-turn lane, through lane and a paved shoulder. The northbound approach is a shared through/right-turn lane and a paved shoulder. The westbound approach consists of a left-turn and right-turn lane.



PARSONS

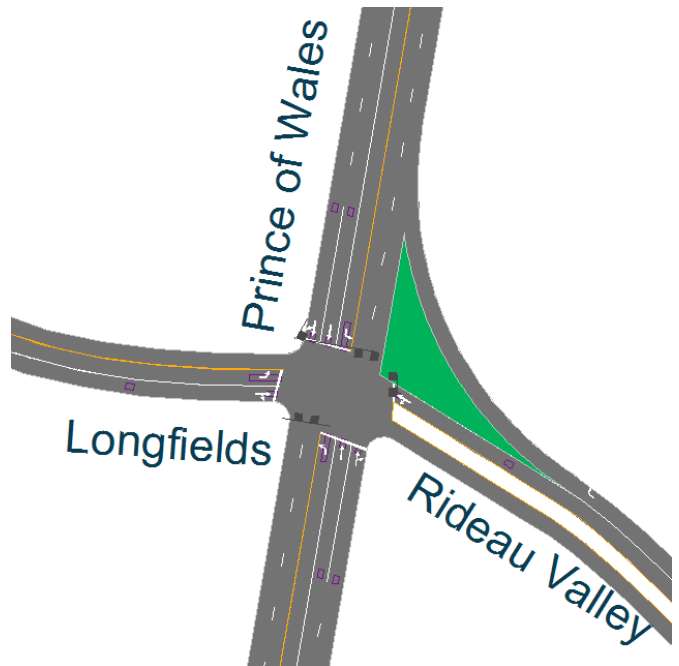
Kilspindie/Longfields

Kilspindie/Longfields is an existing 3-legged intersection with stop-control on the minor approach. The southbound approach consists of a left-turn lane, through lane and a paved shoulder. The northbound approach consists of a right-turn lane and through lane. The westbound approach consists of a left-turn and right-turn lane. A bike pocket is provided in the northbound direction.



Prince of Wales/Longfields

Prince of Wales/Longfields is a 4-legged signalized intersection. The northbound and southbound approaches consist of a left-turn lane, a through lane and a shared through/right-turn lane. The eastbound approach consists of a left-turn lane and a shared through/right-turn lane, and the westbound approach consists of a shared through/left-turn lane and a free-flow right turn channel. Bike pockets are provided in all directions.



Existing Driveways to Adjacent Developments

There is one driveway on the south side of Longfields Drive between Golflinks Drive the Prince of Wales/Longfields intersection. There are four driveways on the north side of Longfields Drive between Golflinks Drive the Prince of Wales/Longfields intersection.

Pedestrian/Cycling Network

Currently, no pedestrian facilities are provided along Longfields Drive, with the exception of paved/gravel shoulders. Similarly, Prince of Wales Drive only provides pave shoulders on both sides. Golflinks Drive and Kilspindie Ridge have sidewalks along both sides of the roadway.

Paved shoulders for cyclists are provided on Longfields Drive and Prince of Wales Drive. Both paved shoulders become cycle-tracks further north; starting at Golflinks Drive and north for Longfields Drive; starting at Woodroffe Avenue and north for Prince of Wales Drive. There is a pocket bike lane with a lane shifting to the left of right turn at Kilspindie/Longfields intersection. Prince of Wales/Longfields intersection provides bicycle facilities at all legs. Drive and Kilspindie Ridge allow for shared-use cycling facilities.

The ultimate cycling network identifies Prince of Wales Drive as a spine route and both Longfields Drive and Golflinks Drive as local routes.

No major pathways are located within the study area, as they are located adjacent to the Rideau and Jock Rivers, and along Cambrian Road.

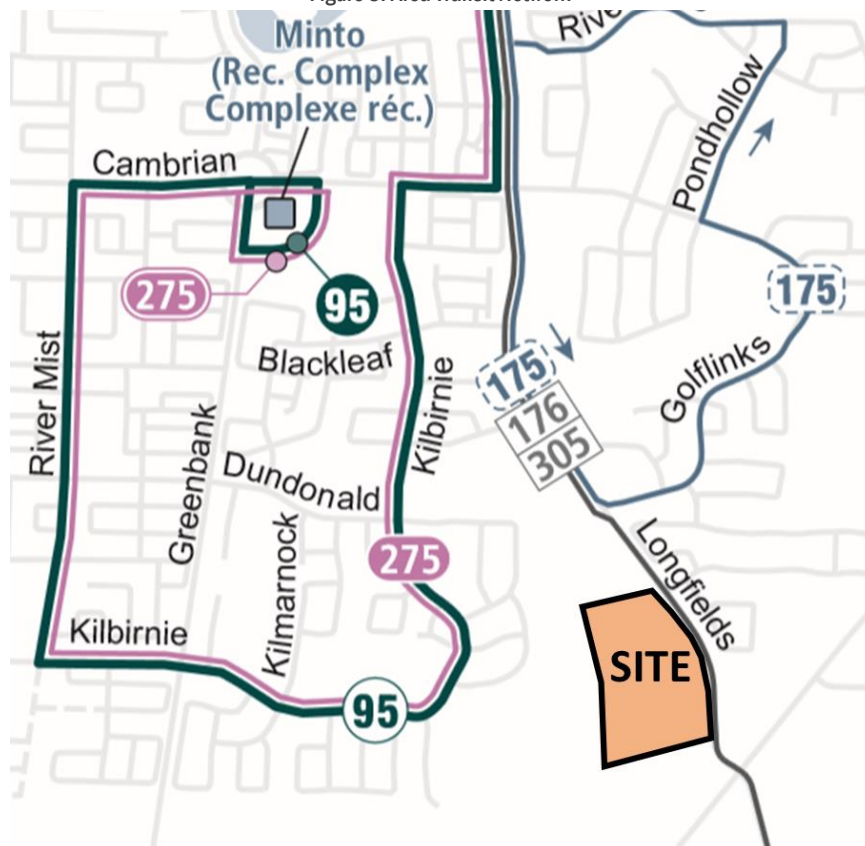
Transit Network

Transit service within the vicinity of the site is currently provided by OC Transpo Route #176 which provides peak hour service in the morning and afternoon between Manotick and Barrhaven Centre. Route #176 arrives approximately every hour between 6 to 8am, and 4 to 7pm. Bus stops are located north of Kilspindie Ridge, north of Golflinks Drive, and south of Prince of Wales Drive.

Route #175 provides AM Midday and PM service along Golflinks Drive and along Longfields Drive north of Golflinks Drive, between Golflinks Drive and Barrhaven Centre. Route #175 arrives approximately every 30 minutes between 6:45 to 8:45am, every hour between 11am and 1pm, and 3:15 to 10pm. Bus stops are located on Golflinks Drive and on Longfields Drive north of the Golflinks Drive intersection.

High frequency bus route #95 is located approximately 1.2km north of site or approximately 500 meters west of site granted pedestrian connectivity is provided.

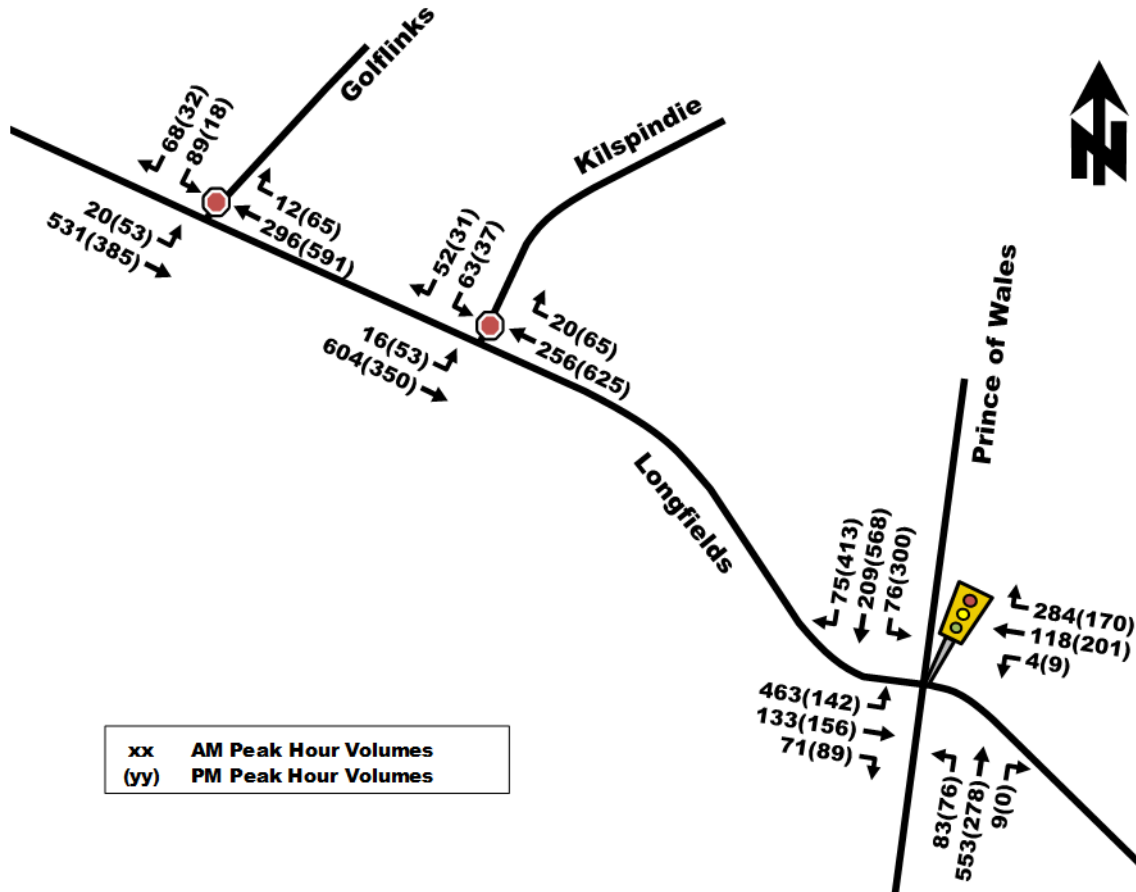
Figure 3: Area Transit Network



Peak hour travel demands

The existing peak hour traffic volumes within the study area were completed in 2015 and 2016, obtained from the City of Ottawa and are illustrated in Figure 4. The peak hour traffic volume count data is included as Appendix B.

Figure 4: Existing Peak Hour Traffic Volumes



Existing Road Safety Conditions

Collision history for study area roads (2012 to 2016, inclusive) was obtained from the City of Ottawa, and the collisions involved property damage (70%), and the remaining (30%) collisions involved non-fatal injuries indicating low impact speeds.

Over the five-year period, the types of collisions cited by police include: rear end (41% or 15 collisions), turning movement (32% or 12 collisions), angle (14% or 5 collisions), approaching (5% of 2 collisions, and sideswipe, single vehicle (other) and other (3% or 1 collision each).

A standard unit of measure for assessing collisions at an intersection is based on the number collisions per million entering vehicles (MEV). At intersection and road segment within the study area, reported collisions per MEV is as follows:

- 0.09 collisions/MEV at the Golflinks/Longfields intersection
- 0.60 collisions/MEV at the Prince of Wales/Longfields intersection
- 0.31 collisions/MEV on Longfields Drive between Golflinks and Prince of Wales Drive

With respect to the subject site, there does not appear to be any prevailing safety issues along the Longfields Drive, although the geometry at Prince of Wales Drive may be a contributing factor to the 11 rear end and 11 turning movement

collisions observed at this intersection. The widening of Longfields Drive will alter this alignment and the proposed roundabout will likely improve the safety conditions at the intersection.

The collision data as provided by the City of Ottawa and related analysis has been provided in Appendix C.

It should be noted that with the realignment and addition of the roundabouts at the intersections of Golflinks/Longfields and Prince of Wales/Longfields, the collision history may not reflect the future operations at the study intersection locations.

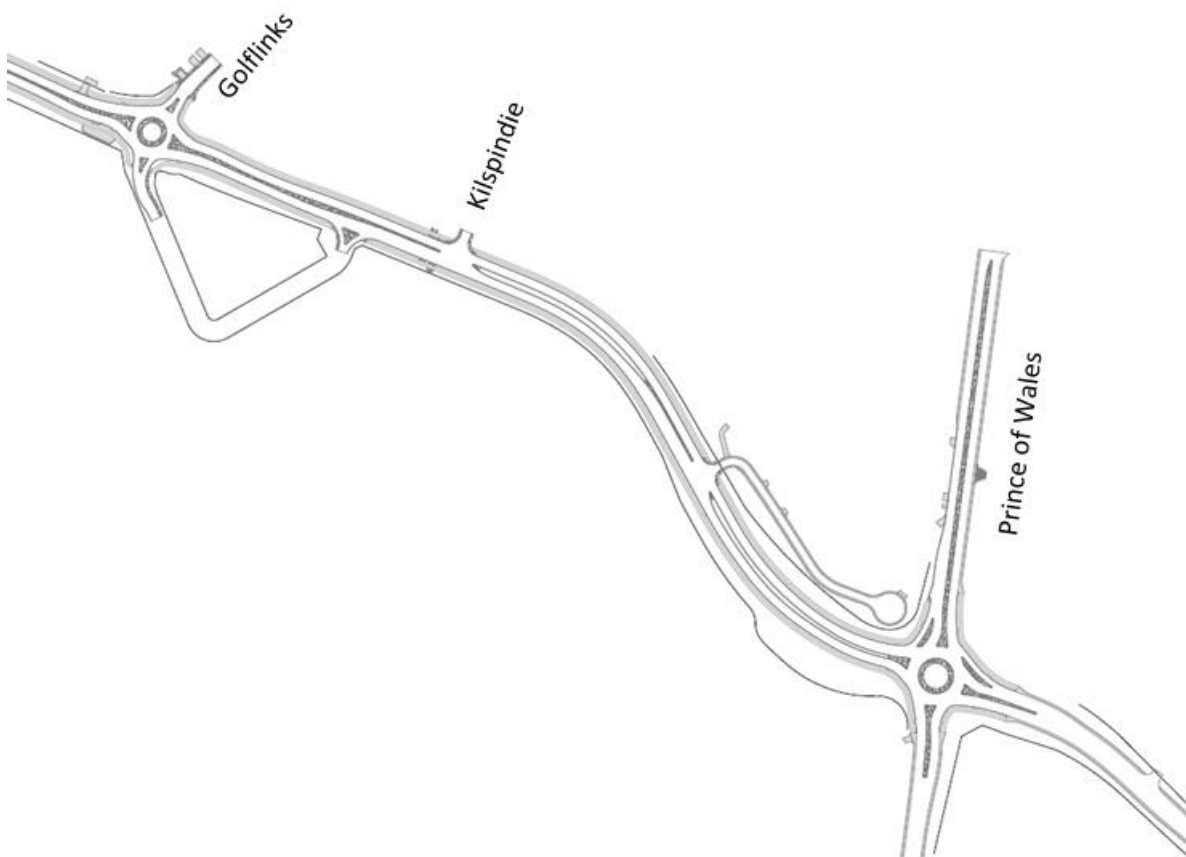
2.1.3. PLANNED CONDITIONS

Planned Study Area Transportation Network Changes

As outlined within the Ottawa Transportation Master Plan Affordable Network and the Wards 3, 21, and 22 Planned Construction Projects map, the only study area improvement is the Longfields Drive Widening (formerly Jockvale Road) from Cambrian Road to Prince of Wales Drive. The project has undergone detailed design and is planned to be constructed by the year 2021.

As part of the design, Longfields Drive will be widened to 4-lanes, including a centre median to accommodate auxiliary lanes at Kilspindie Ridge and to an access for local residents once the road alignment shifts to the west. Roundabouts are proposed at Blackleaf Drive, Golflinks Drive and Prince of Wales Drive. Figure 5 illustrates the preliminary design of the Longfields Drive widening.

Figure 5: Longfields Drive Widening – Preliminary Design



Since the widening of Longfields Drive is anticipated at a similar horizon time as the proposed development, all future analysis will be done assuming a widened Longfields Drive and roundabout intersections at study area intersections.

Other Area Development

According to the City's development application search tool, the following developments are planned within the vicinity of the subject site.

Uniform – 2741 Longfields Drive

A Plan of Subdivision and Zoning By-Law Amendment application for the 2741 Longfields Drive property has been submitted for a proposed residential subdivision consisting of 90 residential units comprised of 34 semi-detached bungalow dwellings and four (4) 14-unit low-rise condominium apartments and a community parkette (TBC). The development includes proposed connections to Longfields Drive at Golflinks Drive (future roundabout) and approximately 185m south of Golflinks Drive (a right-in/right-out).

Barnsdale Lands Rezoning

Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) applications are currently proposing a re-designation of approximately 116 ha of land within the City of Ottawa from an 'Agricultural Resource Area' designation to a 'General Rural Area' designation and to rezone the lands from the current 'Agricultural Zone – Subzone 2 (AG2)', 'Agricultural Zone – Subzone 3 (AG3)', 'Mineral Aggregate Resource Zone', and 'Mineral Aggregate Resource Zone – Subzone 1 (MR1)', to appropriate 'Rural Countryside (RU) Zones'.

The proposed re-zoning lands include 3552, 3680, 3806, 3818 and 3882 Barnsdale Road, 3872, 3971 and 3976 Greenbank Road, and 3894, 3910 and 3972 Prince of Wales Drive.

2.2. STUDY AREA AND TIME PERIODS

For the purposes of the operational analysis it is assumed that the subject development will be fully built and occupied by 2021, at a similar timeline as the anticipated widening of Longfields Drive. This will necessitate the analysis of 2021 and 2026 horizons.

As the proposed site is a residential development, the time periods assessed will be the weekday morning and afternoon peak hours. The proposed study area is outlined below and highlighted in Figure 6.

- Golflinks/Longfields;
- Kilspindie/Longfields;
- Prince of Wales/Longfields;
- Longfields from Kilspindie to Prince of Wales;

Figure 6: Study Area



2.3. EXEMPTION REVIEW

Based on the City's TIA guidelines and the subject site, the following modules/elements of the TIA process, summarized in Table 1, are recommended to be exempt in the subsequent steps of the TIA process:

Table 1: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 Development Design	4.1.2 Circulation and Access	Not required for plan of subdivision.
4.2 Parking	4.2.1 Parking Supply	Not required for plan of subdivision.
	4.2.2 Spillover Parking	Not required for plan of subdivision.
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Proposed development connects directly to arterial road network and does not connect to adjacent neighbourhoods.
4.8 Network Concept	-	Proposed development will not generate more than 200-person trips during the peak hours in excess of permitted zoning.

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
4.7 Transit	4.7.2 Transit Priority	Transit priority is not designated along Longfields Drive.

3. FORECASTING REPORT

3.1. DEVELOPMENT-GENERATED TRAVEL DEMAND

3.1.1. TRIP GENERATION RATES AND MODE SHARES

Trip generation rates for the proposed development, consisting of 94 single family homes and 90 townhouses, were obtained from the City's 2009 TRANS Trip Generation Report. Table 3 provides the appropriate trip generation rates for both land uses.

Table 3: Vehicle Trip Generation Rates

Land Use	Data Source	Trip Rates	
		AM Peak	PM Peak
Single Family Homes	TRANS	T = 0.70(du)	T = 0.90(du)
Townhomes	TRANS	T = 0.54(du)	T = 0.71(du)
Notes: T = Average Vehicle Trip Ends			

Using the TRANS Trip Generation rates, the total amount of vehicle trips generated by the proposed development was calculated. The results are summarized in Table 4.

Table 4: Projected Vehicle Trip Generation

Land Use	Source	Units	AM Peak (veh/h)			PM Peak(veh/h)		
			In	Out	Total	In	Out	Total
Single Family Homes	TRANS	94 units	19	47	66	52	33	85
Townhomes	TRANS	90 units	18	31	49	33	31	64
Total Residential Vehicle Trips			37	81	115	86	64	149

As shown in Table 4, the total projected number of vehicle trips expected to be generated by the residential development is approximately 115 and 150 veh/h during the morning and afternoon peak hours, respectively. Using the TRANS Report and table 3.13, the person trips were calculated and shown in Table 5 and Table 6 for single family homes and townhomes respectively.

Table 5: Site 'Person Trips' Generated – Single Family Homes

Travel Mode	AM Mode Share	AM Peak (persons/h)			PM Mode Share	PM Peak (persons/h)		
		In	Out	Total		In	Out	Total
Auto Driver	55%	19	47	66	64%	52	33	85
Auto Passenger	11%	3	10	13	11%	10	5	15
Transit	25%	8	22	30	19%	15	10	25
Non-motorized	9%	3	8	11	6%	4	4	8
Total Person Trips	100%	33	87	120	100%	81	52	133

Table 6: Site 'Person Trips' Generated – Townhomes

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	55%	18	31	49	61%	33	31	64
Auto Passenger	10%	4	5	9	11%	7	5	12
Transit	27%	8	16	24	22%	12	11	23
Non-motorized	8%	2	5	7	6%	3	3	6
Total Person Trips	100%	32	57	89	100%	55	50	105

Table 7: Total Site 'Person Trips' Generated – Combined

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Mode Share	PM Peak (veh/h)		
		In	Out	Total		In	Out	Total
Auto Driver	-	37	78	115	-	85	64	149
Auto Passenger	-	7	15	22	-	17	10	27
Transit	-	16	38	54	-	27	21	48
Non-motorized	-	5	13	18	-	7	7	14
Total Person Trips	100%	65	144	209	100%	136	102	238

As the Trans Report focuses on unit type to estimate modal shares, the estimated rates may not reflect the regions travel habits. To better estimate the modal shares for the proposed location the 2011 OD-Survey for the South Nepean area will be used. Table 8 summarizes the estimated modal rates

Table 8: OD-Survey Estimated Modal Shares

Travel Mode	Mode Share
Auto Driver	60%
Auto Passenger	15%
Transit	20%
Non-motorized	5%
Total Person Trips	100%

The estimated 2011 OD-Survey modal share rates are applied using the 2009 Trans Report Total Site generated person trips. The summarized Total Site Trip rates are displayed in Table 9.

Table 9: Total Site 'Vehicle Trips' Generated using 2011 OD-Survey

Travel Mode	AM Mode Share	AM Peak (veh/h)			PM Peak (veh/h)		
		In	Out	Total	In	Out	Total
Auto Driver	60%	36	89	125	89	54	143
Auto Passenger	15%	9	22	31	22	14	36
Transit	20%	12	30	42	30	18	48
Non-motorized	5%	3	7	10	7	5	12
Total Person Trips	100%	61	148	209	148	90	238
Total Vehicle Trips		36	89	125	89	54	143

As shown in Table 9 above, the development is projected to generate a total of approximately 125 and 145 'new' vehicle trips per hour and 40 and 50 'new' transit trips during the morning and afternoon peak hours, respectively.

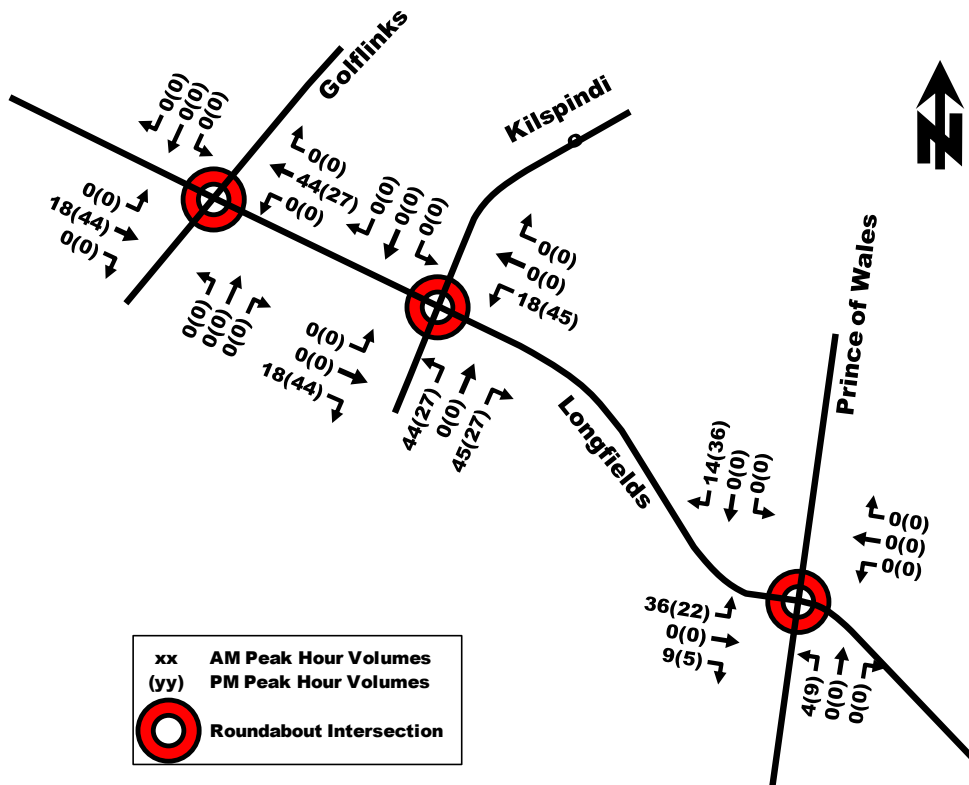
3.1.2. TRIP DISTRIBUTION AND ASSIGNMENT

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.

- 50% to/from the north via Longfields Drive
- 40% to/from the north via Prince of Wales Drive
- 10% to/from the south via Prince of Wales Drive

Based on the foregoing distribution, 'new' projected site-generated trips were assigned to the study area, which is illustrated as Figure 7.

Figure 7: Site Generated Traffic



3.2. BACKGROUND NETWORK TRAVEL DEMANDS

3.2.1. TRANSPORTATION NETWORK PLANS

See Section 2.1.3.

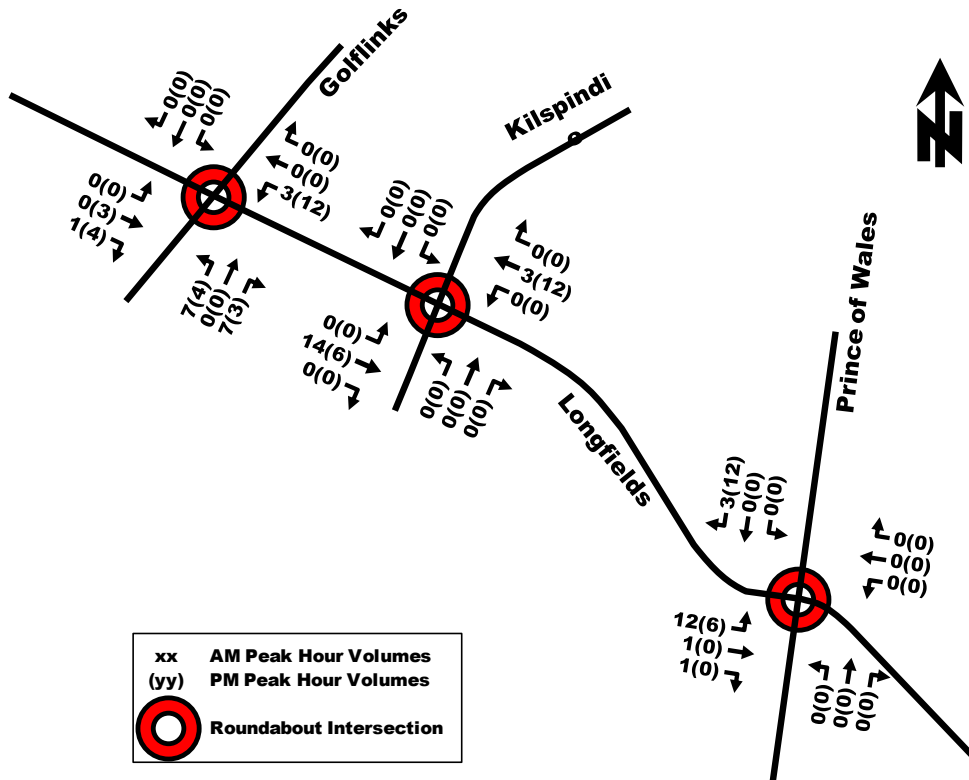
3.2.2. BACKGROUND GROWTH

The background traffic volumes along Longfields Drive and Prince of Wales Drive are expected to increase at a constant rate. To account for anticipated development beyond the urban boundary (e.g. Manotick), a 4% traffic growth rate per annum was assumed for the 2021 and 2026 horizon years.

3.2.3. OTHER DEVELOPMENTS

Trips generated by other area developments were accounted within the study area. See Section 2.1.3 for more detail of each development. It has been determined that only Uniform Development will have impacts to study area intersections.

Figure 8: Projected Background Traffic Volumes from Uniform



3.2.4. BACKGROUND TRAFFIC GROWTH

The future background volumes were calculated by superimposing other area developments on to the network and adding a background growth of 4%. Background volumes were created for the buildout year 2021 and for horizon 2026. The resulting background traffic volumes are depicted in Figure 9 and Figure 10, respectively.

Figure 9: 2021 Background Traffic Volumes

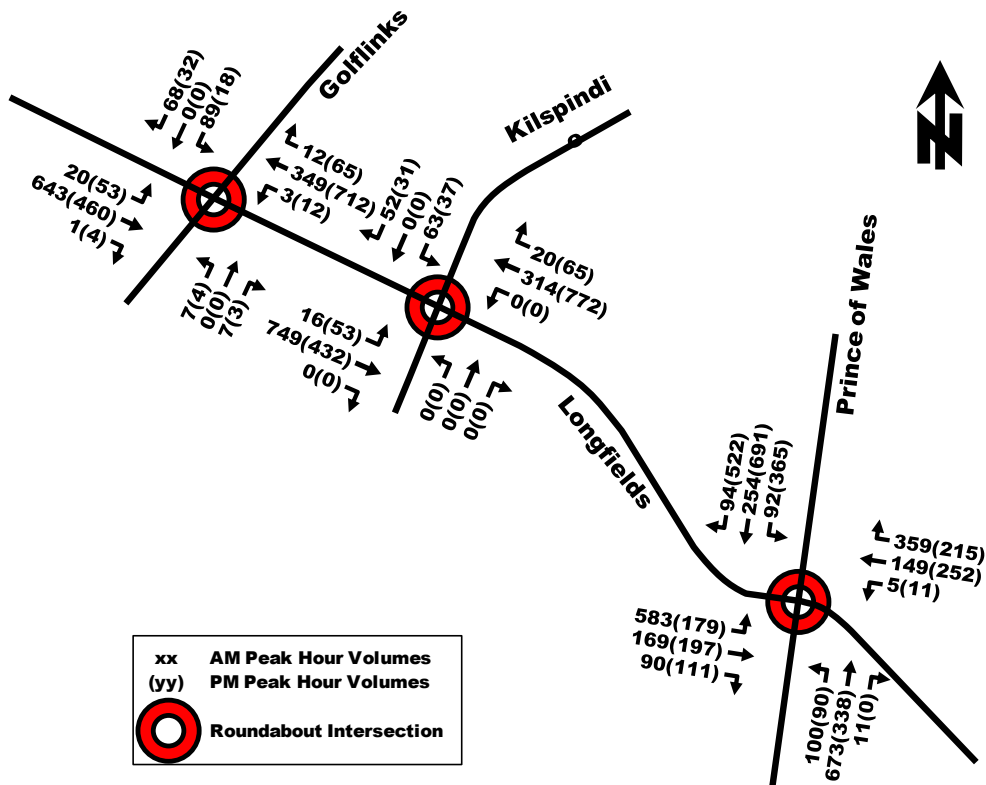
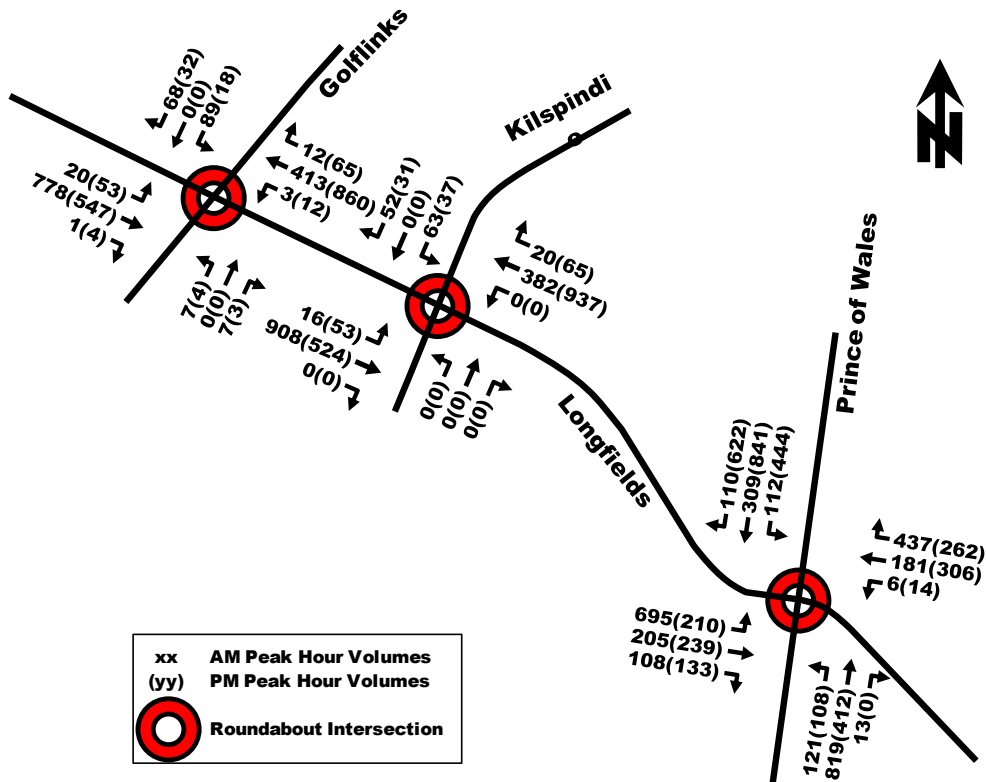


Figure 10: 2026 Background Traffic Volumes



3.3. DEMAND RATIONALIZATION

3.3.1. EXISTING CAPACITY ISSUES

The following Table 10 provides a summary of the existing traffic operations at the study area intersection based on the SYNCHRO (V10) traffic analysis software. The subject intersections were assessed in terms of the volume-to-capacity (v/c) ratio and the corresponding Level of Service (LoS) for the critical movement(s). The SYNCHRO model outputs of existing conditions are provided within Appendix D.

Table 10: Existing Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Signalized						
Prince of Wales/Longfields	E(B)	0.98(0.70)	EBL(WBT)	30.9(20.7)	B(A)	0.65(0.53)
Unsignalized						
Golflinks/Longfields	C(C)	19(19)	WB(WB)	3(1)	A(A)	-
Kilspindie/Longfields	C(D)	19(25)	WB(WB)	2(2)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 0.90 and a saturation flow rate of 1800 veh/h/lane.						

As shown in Table 10, all intersections within the subject area are currently operating 'as a whole' at a good LoS 'B' or better during both peak hours.

The majority of the 'critical movements' at study area intersections are currently operating at an acceptable LoS 'D' or better during both peak hours with the exception of the eastbound left-turn movement at the Prince of Wales/Longfields intersection in the AM peak hour.

It is anticipated that additional turning capacity will be added to turning movements at Prince of Wales/Longfields intersection after the widening on Longfields occurs and the intersection becomes a roundabout.

The foregoing SYNCHRO analysis indicates that there are currently some capacity constraints for particular movements at Prince of Wales/Longfields intersection, but overall, there will be added capacity to the network once Longfields Drive is widened and study area intersections are upgraded to roundabouts.

4. STRATEGY REPORT

4.1. DEVELOPMENT DESIGN

4.1.1. MULTI-MODAL FACILITIES

Within the proposed site, the 18.0m right-of-ways (local roads) will require sidewalks along a single side of the roadway, and the 14.5m right-of-way window street will require a sidewalk on one side, either within the 14.5m right-of-way or on the adjacent section of Longfields Drive. If the pedestrian facility is provided along Longfields Drive, connections into the development will be required.

The local road network within the proposed site does not require specific cycling facilities and cyclists are anticipated to operate within the shared vehicle lanes.

Transit stops are currently located north of Kilspindie Ridge and the proposed future stops once Longfields Drive is widened, will be on the north side of the Kilspindie Ridge intersection.

If pedestrian connectivity is provided to the golf pathway located south-west of the site, OC-Transpo bus stop #1276 and #3384 located at Kilbirnie/Stromness would be between 450 to 900 meter walk depending on site location, which provides access to high frequency bus route #95.

4.1.2. VEHICLE ACCESS

The proposed development access will be provided through a new south leg added to the Kilspindie/Longfields intersection. As part of the widening of Longfields Drive from 1 lane per direction to 2 lanes per direction, major intersections will be upgraded to roundabout design. The development is anticipated to be constructed at a similar time as the widening of Longfields Drive, and as such, the development will be accessed by a new roundabout.

The Kilspindie/Longfields roundabout intersection is anticipated to have pedestrian facilities with medians between the roadways. A multi-use pathway is proposed on both sides of Longfields Drive.

4.1.3. NEW STREET NETWORK

The street network within the proposed site consists of local roadways. The block lengths are short and traffic calming measures will likely not be required. The potential for narrowed intersections/bulb-outs to be located at pedestrian crossings would be a recommended feature to reduce crossing distances.

4.2. PARKING SUPPLY

Based on the City of Ottawa parking bylaws, the location of the development and the type of development (four or less storeys high), no off-street motor vehicle parking is required as per Part 4 – Parking, Queuing and Loading Provisions clause 4a in section 101 for City of Ottawa Guidelines. It is assumed that residents will park their vehicles and bicycles inside their private garage or on their driveways.

4.3. BOUNDARY STREET DESIGN

The boundary street for the development is Longfields Drive. Longfields Drive has no existing sidewalks. As part of the Longfields Drive widening, a multi-use pathway (MUP) is proposed on both sides of the roadway.

A preliminary design sketch for the proposed widening, including the proposed MUP is included in Appendix E.

The existing/proposed roadway geometry consists of the following features:

- Existing Longfields Drive
 - 1 vehicle travel lane in each direction;
 - No sidewalk on either side of the roadway; and,
 - More than 3,000 vehicles per day.
- Widened Longfields Drive
 - 2 vehicle travel lanes in each direction;
 - MUP greater than 2 meters wide with boulevard between 0.5-2 meters; and,
 - More than 3,000 vehicles per day.

The multi-modal level of service analysis for the subject road segments adjacent to the site is summarized in Table 11 with detail analysis provided in Appendix F.

Table 11: MMLOS – Road Segments Adjacent to the Site

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Existing Longfields Drive between Kilspindie & Prince of Wales	F	C	F	B	D	D	B	D
Widened Longfields Drive between Kilspindie & Prince of Wales	E	C	A	B	D	D	A	D

Pedestrian PLOS targets were not met on Longfields Drive for existing or future conditions. The triggers were due to high vehicle volumes, high operating speeds and lack of sidewalks in existing conditions. To meet the PLOS targets for the widened Longfields Drive, Longfields Drive would require the operating speed to 50km/h or lower to achieve the PLOS ‘C’ target.

The physically separated bike lanes as part of the MUP would significantly improve BLOS from existing ‘F’ to ‘A’.

Transit TLOS and Truck TkLOS targets were all met for existing and future analysis.

4.4. ACCESS INTERSECTION DESIGN

The proposed development will be accessed via a four-legged roundabout intersection at Kilspindie/Longfields. The roundabout will be built as part of the Longfields Drive widening anticipated to occur at a similar time as buildout for this development.

As part of an arterial widening, private driveways that feed into Longfields Drive will be provided access to local roadways which feed into the larger arterial. The adjacent driveway and house to the west of the site on Longfields Drive will be demolished, while the houses and driveways located to the east of the site on Longfields Drive will be provided direct access to a local roadway which then connects to Longfields Drive. Preliminary design drawings for the widening of Longfields Drive are included as Appendix E.

Wide cross-sections, crescent style roads and bulb ends allow for easy turnaround for emergency/heavy vehicles as well as snow storage in winter months.

4.5. TRANSPORTATION DEMAND MANAGEMENT

Given the development is an infill of a golf course community, and following the context for TDM measures, there is limited opportunity for effective TDM measures until the City widens Longfields Drive. By this time, the resident behaviour will be set for their travel mode and any TDM strategy identified in the checklists will no longer be valid.

4.6. ROUTE CAPACITY

Table 12 summarizes the average available seats on-vehicle for the corresponding transit routes.

Given the average loads and residual capacity of routes 175 and 176, no capacity constraints are noted for the transit routes in the area.

Transit information was provided by the City of Ottawa in May 2018 and is included in Appendix G.

Table 12: Transit Capacity at Adjacent Transit Stops

Intersection	Stop	Direction	Route		Average Boarding and Alighting	Average Load at Departure	Available Seats (%)
Longfields Drive	0434	Southbound	175	AM	0	1	98%
				PM	1	1	98%
	1990	Northbound	176	AM	1	6	89%
				PM	0	3	95%
	1990	Northbound	305	AM	N/A		
				PM			
	1113	Southbound	176	AM	1	3	95%
				PM	1	5	91%
	1113	Southbound	305	AM	N/A		
				PM			

4.7. INTERSECTION DESIGN

4.7.1. MULTI-MODAL LEVEL OF SERVICE

As stated in the MMLoS Guidelines, only signalized intersections are considered for the intersection level of service measures. The nearest signalized intersection is located at Prince of Wales/Longfields. As mentioned previously, the intersection of Prince of Wales/Longfields will be modified to a roundabout. The MMLoS analysis for the nearest Prince of Wales/Longfields is summarized in Table 13, with detailed analyses provided in Appendix H.

Table 13: MMLoS - Intersections

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TKLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TKLOS	Target
Existing Prince of Wales/Longfields	F	C	F	B	F	D	B	D

As shown in Table 13, the nearest existing pedestrian crossing point located at Prince of Wales/Longfields does not meet PLOS targets due to the number of travel lanes crossed per leg. The proposed Kilspindie/Longfields roundabout intersection will provide the nearest crossing point for pedestrians and cyclists from the proposed site.

4.7.2. PROJECTED BACKGROUND 2021 OPERATIONS

The 2021 background volumes from Section 3.2.2 and Figure 9 were evaluated using Synchro. Results are summarized in Table 14 with detailed analyses provided in Appendix I.

Table 14: Projected Background 2021 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Roundabout Intersection						
Golflinks/Longfields	B(B)	11(11)	NB(SB)	5(4)	A(A)	-
Kilspindie/Longfields	B(B)	11(11)	NB(SB)	4(4)	A(A)	-
Prince of Wales/Longfields	C(B)	15(13)	NB(EB)	8(6)	A(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane.						

As shown in Table 14, all the intersections within the subject area are projected to operate ‘as a whole’ at good LoS ‘A’ during the AM and PM peak hours. The ‘critical movements’ at study area intersections are projected to operate at LoS ‘C’ or better during both peak hours. Overall, intersections will perform better than existing conditions.

4.7.3. PROJECTED BACKGROUND 2026 OPERATIONS

The background 2026 volumes from Section 3.2.4 and Figure 10 were evaluated using Synchro. Results are summarized in Table 15 with detailed analyses provided in Appendix I.

Table 15: Projected Background 2026 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Roundabout Intersection						
Golflinks/Longfields	B(B)	12(12)	NB(SB)	5(4)	A(A)	-
Kilspindie/Longfields	B(B)	12(12)	NB(SB)	4(4)	A(A)	-
Prince of Wales/Longfields	C(C)	20(15)	NB(EB)	10(7)	B(A)	-
Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane.						

As shown in Table 15, all the intersections within the subject area are projected to operate ‘as a whole’ at good LoS ‘B’ or better during the AM and PM peak hours. The ‘critical movements’ at study area intersections are projected to operate at LoS ‘C’ or better during both peak hours. Overall, intersections will perform better than existing conditions.

4.7.4. FUTURE PROJECTED 2021 CONDITIONS

The total future projected 2021 conditions were derived by superimposing the 2021 background volumes onto the site-generated volumes and are illustrated in Figure 11. Synchro results for study area intersection performance are summarized in Table 16 with detailed analyses provided in Appendix J.

Figure 11: Future Projected Interim 2021 Conditions

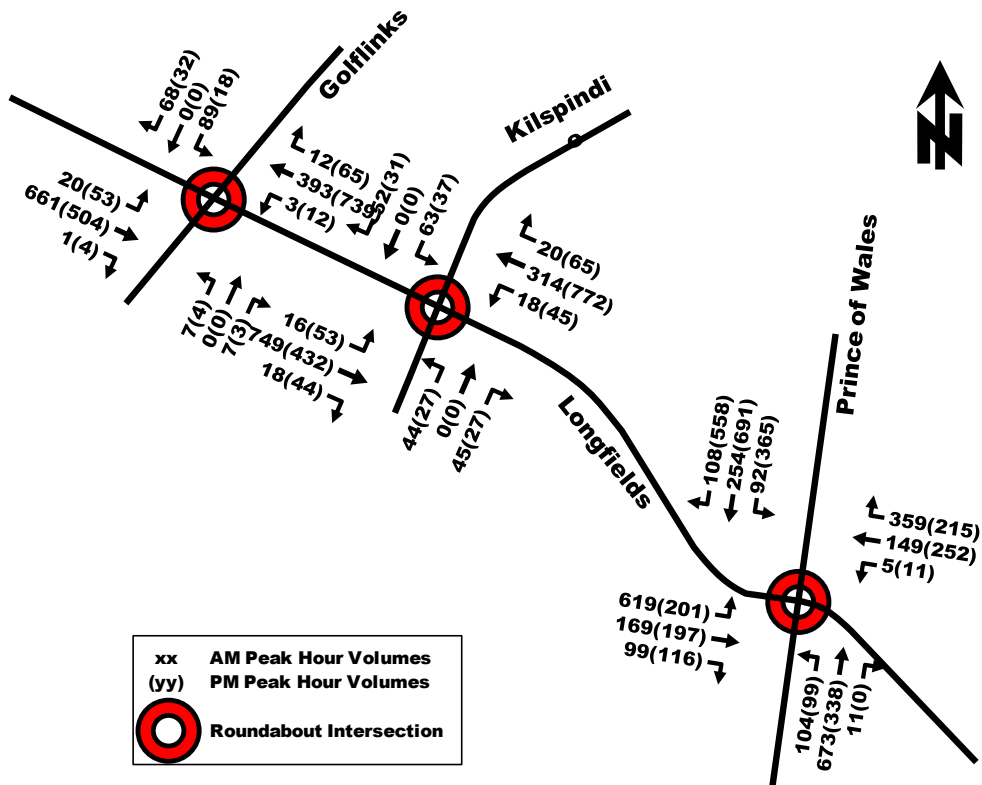


Table 16: Future Total Projected Interim 2021 Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Roundabout Intersection						
Golflinks/Longfields	B(B)	11(11)	NB(SB)	5(4)	A(A)	-
Kilspindie/Longfields	B(B)	12(12)	NB(SB)	5(5)	A(A)	-
Prince of Wales/Longfields	C(B)	15(13)	NB(EB)	8(6)	A(A)	-

Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane.

As shown in Table 16, all the intersections within the subject area are projected to operate 'as a whole' at good LoS 'A' during the AM and PM peak hours. The 'critical movements' at study area intersections are projected to operate at LoS 'C' or better during both peak hours. Overall, intersections will perform better than existing conditions.

4.7.5. FUTURE PROJECTED 2026 CONDITIONS

The total future projected 2026 conditions were derived by superimposing the 2026 background volumes onto the site-generated volumes and are illustrated in Figure 12. Synchro results for study area intersection performance are summarized in Table 17 with detailed analyses provided in Appendix J.

Figure 12: Future Projected 2026 Ultimate Conditions

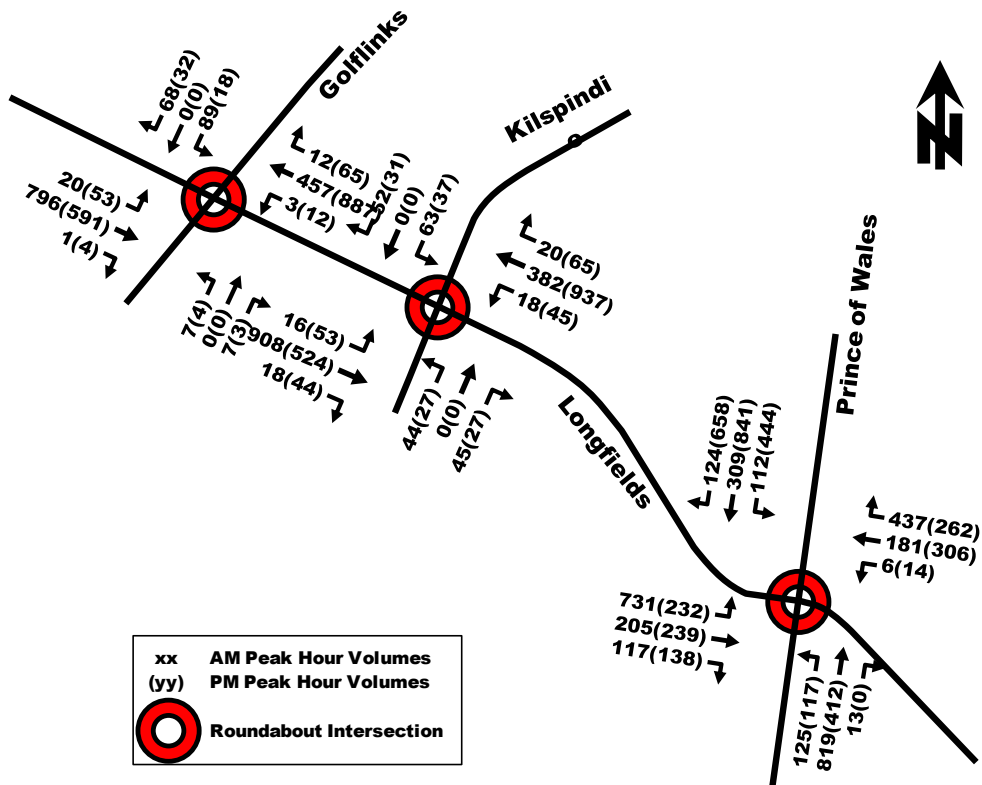


Table 17: Future Total Projected Ultimate 2026 Buildout Operations at Study Area Intersections

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Roundabout Intersection						
Golflinks/Longfields	B(B)	12(12)	NB(SB)	5(4)	A(A)	-
Kilspindie/Longfields	B(B)	12(12)	NB(SB)	5(5)	A(A)	-
Prince of Wales/Longfields	C(C)	22(15)	NB(EB)	10(7)	B(A)	-

Note: Analysis of signalized intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane.

As shown in Table 17

Table 17, all the intersections within the subject area are projected to operate ‘as a whole’ at good LoS ‘A’ during the AM and PM peak hours. The ‘critical movements’ at study area intersections are projected to operate at LoS ‘C’ or better during both peak hours. Overall, intersections will perform better than existing conditions.

5. SUMMARY OF FINDINGS

Proposed Development

- The proposed development is located at 2701 Longfields Drive

- The site is currently a golf course
- The proposed development will consist of a single phase which consists of approximately 94 single family homes and 90 executive townhomes expected to have occupancy by 2021

Existing Conditions

- Overall, all intersections operate at good LoS 'B' or better
- The critical movements all operate at LoS 'D' or better with the exception of the eastbound left movement at Prince of Wales/Longfields which operates at LoS 'E' in the AM peak hour

Background Conditions

- A 4% annual growth rate was applied to study area intersections
- Other nearby developments were manually superimposed on background volumes

Trip Generation and Parking

- The proposed development was expected to generate approximately 125 and 145 vehicle trips in the weekday morning and afternoon peak hours respectively based on TRANS Trip Generation and OD-Survey Mode Share
- On site vehicle and bicycle parking will be satisfied by private driveways and private parking garages. Since the development will have units equal to or less than 4 storeys in height, no off-street parking is necessary

Projected Conditions

- Most intersections in the future operate better than existing conditions despite growing volumes from background and site generated traffic due the widening of Longfields Drive and the upgrade of all study intersections to roundabouts
- Future Projected 2026 conditions operate similarly to 2026 background operations, indicating that most of the traffic and congestion added to the network comes from background volume growth
- Overall, all intersections are projected to operate at good LoS 'B' or better and having a critical movement of LoS 'C' or better for all study intersections
- The MMLOS road segment analysis shows that neither existing or future road segments would meet minimum targets for pedestrians due to high operating speeds and high vehicle volumes. A reduction of speed to 50km/h or less would satisfy the PLoS. Cyclist BLoS, Transit TLoS and Truck TkLoS targets were met for future conditions
- The future roundabout at Kilspindie/Longfields would provide pedestrian and cyclist crossing facilities

Transit

- Site-generated transit trips is approximately 40 and 50 'new' trips during the weekday morning and afternoon peak hour, respectively
- The estimated transit trips could be accommodated by existing OC-Transpo bus routes
- If a pedestrian connection from the south quadrant of the site to the existing golf course trails was made, high frequency route #95 would be between 450 to 900 meters walk from the development

Site Access, Circulation and Connectivity

- The proposed development will be accessed via a roundabout to an arterial road located at Kilspindie/Longfields once Longfields Drive is widened. It is anticipated that the widening will happen at a similar time to the buildout of this development
- Multi-use pathways are proposed on both sides of Longfields Drive
- Wide cross-sections, crescent style roads and bulb ends allow for turnaround of emergency/heavy vehicles
- No off-site roadway or intersection modifications are required to support the development

PARSONS

Based on the foregoing, the proposed Zoning By-Law Amendment for Mattamy Homes for the development located at 2701, is recommended from a transportation perspective.

Prepared By:

Reviewed By:

A handwritten signature in black ink, appearing to read 'J. Lavin', with a double underline beneath the signature.

Juan Lavin, E.I.T.

A handwritten signature in black ink, appearing to read 'Matthew Mantle', written in a cursive style.

Matthew Mantle, P.Eng.
Transportation Engineer

Appendix A

Screening Form

City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date

26-Apr-18

Project

Mattamy - 2701 Longfields

Project Number

476616-01000

Results of Screening	Yes/No
Development Satisfies the Trip Generation Trigger	Yes
Development Satisfies the Location Trigger	No
Development Satisfies the Safety Trigger	Yes

Module 1.1 - Description of Proposed Development	
Municipal Address	2701 Longfields Drive
Description of location	NEPEAN CON 2 RF PT LOT 7 RP;4R14256 PT PART 1
Land Use	Residential
Development Size	189 Units (Mixed Single and Towns)
Number of Accesses and Locations	One
Development Phasing	Single Phase
Buildout Year	2021
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Single-Family Homes	
Development Size	189	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)	No	
Location Trigger Met?	No	

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;	Yes	
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	No	
The development includes a drive-thru facility	No	
Safety Trigger Met?	Yes	

Appendix B

Traffic Counts

35759

Turning Movement Count - 15 Minute Summary Report

Total Observed U-Turns

Comment:

2018-Apr-30



Work Order 25750

Start Time: 07:00

Comment:

2018-Apr-30



GOLFLINKS DR E @ JOCKVALE RD

Survey Date: Tuesday, March 01, 2016

WO#:	35759
Device:	Miovision

Survey Date: Tuesday, March 01, 2016

GOLFLINKS DRIVE @ JOCKVALE RD

JOCKVALE RD										GOLFLINKS DRE											
Northbound					Southbound					Eastbound					Westbound						
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W STR TOT	Grand Total			
07:00	08:00	0	20	7	27	4	14	0	18	45	0	0	0	0	0	2	2	2	47		
08:00	09:00	0	22	6	28	7	12	0	19	47	0	0	0	0	1	0	3	4	51		
09:00	10:00	0	12	0	12	0	10	0	10	22	0	0	0	0	1	0	2	3	25		
11:30	12:30	0	6	2	8	0	7	0	7	15	0	0	0	0	0	0	1	1	16		
12:30	13:30	0	6	0	6	1	7	0	8	14	0	0	0	0	0	0	2	2	16		
15:00	16:00	0	15	0	15	3	8	0	11	26	0	0	0	0	5	0	2	7	33		
16:00	17:00	0	11	0	11	2	10	0	12	23	0	0	0	0	2	0	2	4	27		
17:00	18:00	0	4	0	4	2	4	0	6	10	0	0	0	0	0	0	0	0	10		
Sub Total		0	96	15	111	19	72	0	91	202	0	0	0	0	9	0	14	23	225		
U-Turns (Heavy Vehicles)		0					0					0					0				
Total		0	96	15	0	19	72	0	91	202	0	0	0	0	9	0	14	23	225		
Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.																					

Heavy Vehicles include Buses, Single-Unit Trucks and Articulated Trucks. Further, they ARE included in the Turning Movement Count Summary.

Comments

2018-Apr-30

Page 1 of 1

2018-Apr-30

Page 1 of 1



Transportation Services - Traffic Services

Work Order
35759

Turning Movement Count - Full Study Summary Report

GOLFLINKS DR E @ JOCKVALE RD

Survey Date: Tuesday, March 01, 2016

Total Observed U-Turns

AA/T Factor
1.00

Northbound: 1
Southbound: 4
Eastbound: 0
Westbound: 0

Full Study

Period	JOCKVALE RD							GOLFLINKS DR E										Grand TOT
	Northbound				Southbound			Eastbound					Westbound					
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	ST	RT	WB TOT		
07:00 08:00	0	244	12	256	20	515	0	535	791	0	0	0	0	89	0	68	157	948
08:00 09:00	0	291	15	306	19	447	0	466	772	0	0	0	0	49	0	54	103	875
09:00 10:00	0	214	15	229	11	289	0	300	529	0	0	0	0	35	0	26	61	590
11:30 12:30	0	263	22	285	20	226	0	246	531	0	0	0	0	16	0	19	35	566
12:30 13:30	0	235	21	256	24	253	0	277	533	0	0	0	0	25	0	15	40	573
15:00 16:00	0	388	42	430	49	297	0	346	776	0	0	0	0	17	0	27	44	820
16:00 17:00	0	560	65	625	53	332	0	385	1010	0	0	0	0	18	0	32	50	1060
17:00 18:00	0	529	50	579	57	301	0	358	937	0	0	0	0	20	0	25	45	982
Sub Total	0	2724	242	2966	253	2660	0	2913	5879	0	0	0	0	269	0	266	535	6414
U Turns	1			4			5			0			0			0		
Total	0	2724	242	2967	253	2660	0	2917	5884	0	0	0	0	269	0	266	535	6419
EQ 12Hr	0	3786	336	4124	352	3697	0	4055	8179	0	0	0	0	374	0	370	744	8923
Note:	These values are calculated by multiplying the totals by the appropriate expansion factor. 1.39																	
AVG 12Hr	0	3786	336	4124	352	3697	0	4055	8179	0	0	0	0	374	0	370	744	8923
Note:	These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AAD T factor. 1.00																	
AVG 24Hr	0	4960	441	5403	461	4844	0	5312	10715	0	0	0	0	490	0	484	974	11689
Note:	These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. 1.31																	

Note: These values are calculated by multiplying the totals by the appropriate expansion factor.

AVG 12Hr 0 3786 336 4124 352 3697 0 4055 8179 0 0 0 0 374 0 370 744 8923

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.

AVG 24Hr 0 4960 441 5403 461 4844 0 5312 10715 0 0 0 0 490 0 484 974 11689

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.

Comments: 1.31

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



Transportation Services - Traffic Services

Work Order
35759

Turning Movement Count - Pedestrian Volume Report

GOLFLINKS DR E @ JOCKVALE RD

Count Date: Tuesday, March 01, 2016

Start Time: 07:00

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0
07:30 07:45	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0
07:00 08:00	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0
08:00 09:00	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0
09:00 10:00	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0
11:30 12:30	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0
12:45 13:00	0	0	0	1	1	1
13:00 13:15	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0
12:30 13:30	0	0	0	1	1	1
15:00 15:15	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0
15:45 16:00	0	0	0	1	1	1
15:00 16:00	0	0	0	1	1	1
16:00 16:15	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0
16:00 17:00	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0
17:00 18:00	0	0	0	0	0	0
Total	0	0	0	2	2	2

Comment:



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

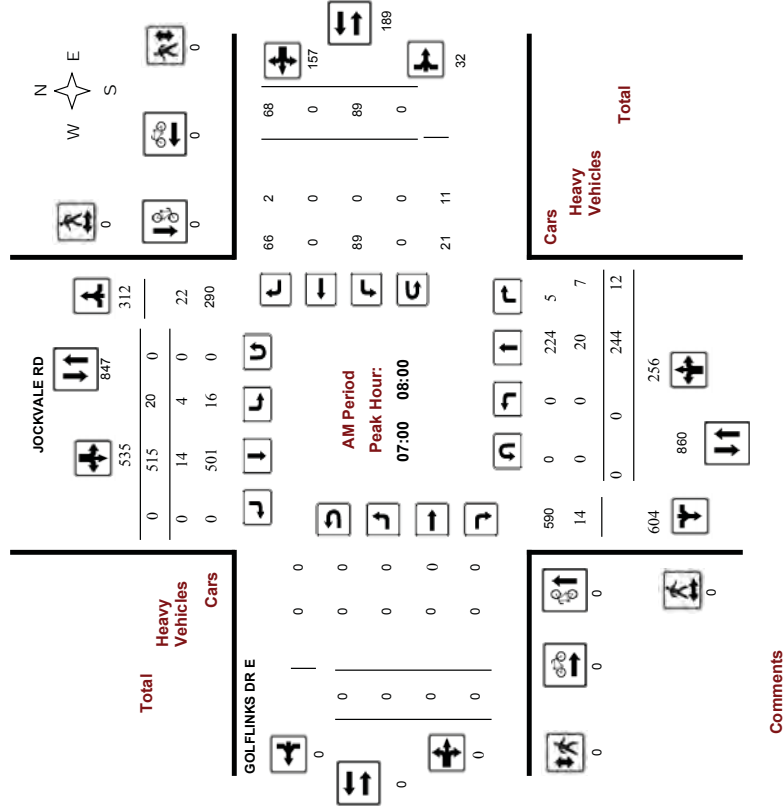
GOLFLINKS DR E @ JOCKVALE RD

Survey Date: Tuesday, March 01, 2016

Start Time: 07:00

WO No: 35759

Device: Miovision



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

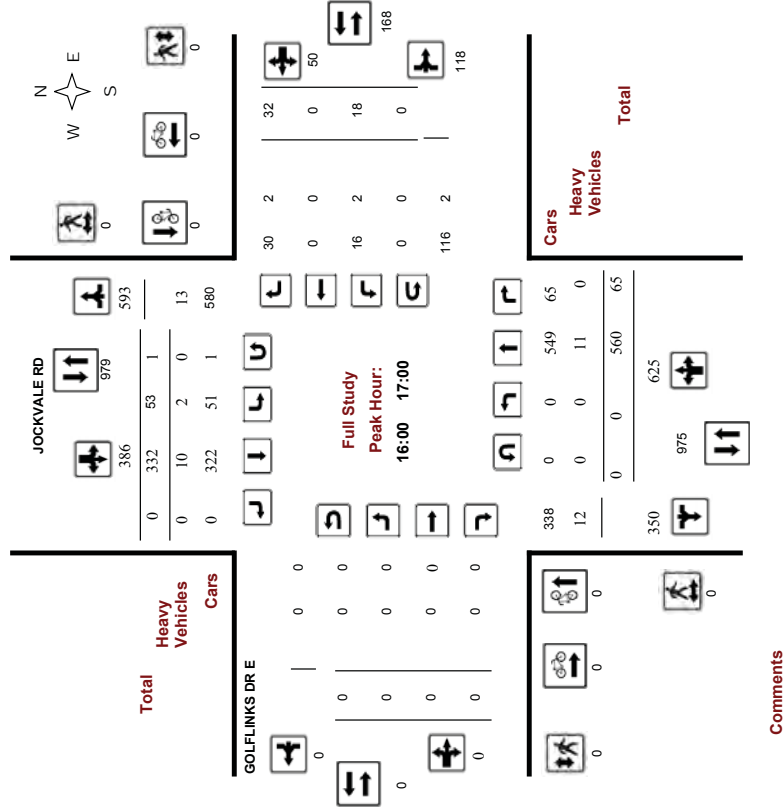
GOLFLINKS DR E @ JOCKVALE RD

Survey Date: Tuesday, March 01, 2016

Start Time: 07:00

WO No: 35759

Device: Miovision





Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

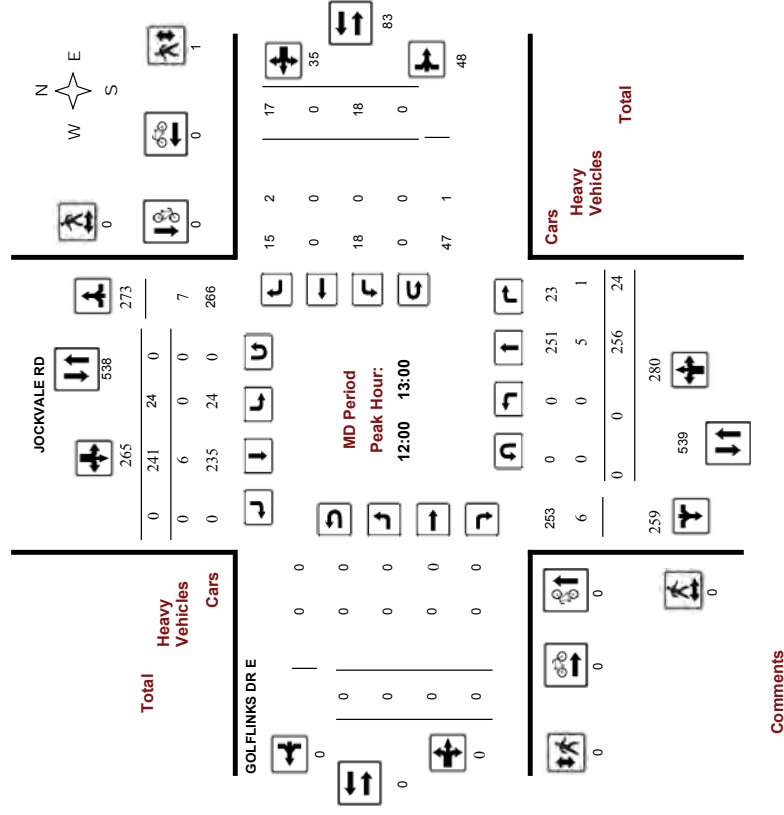
GOLFLINKS DR E @ JOCKVALE RD

Survey Date: Tuesday, March 01, 2016

Start Time: 07:00

WO No: 35759

Device: Miovision



Transportation Services - Traffic Services

Turning Movement Count - Full Study Peak Hour Diagram

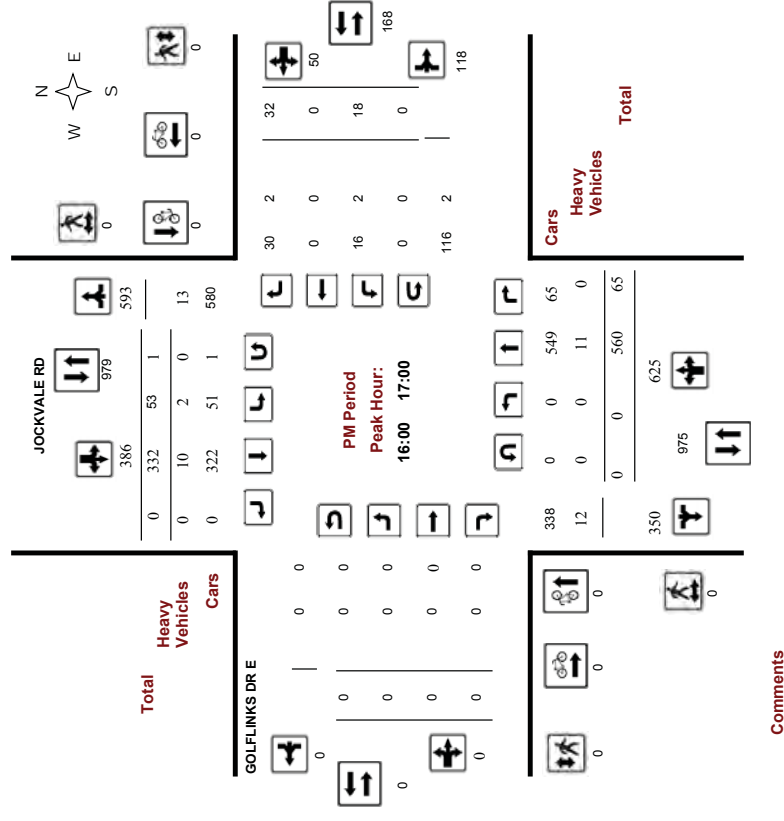
GOLFLINKS DR E @ JOCKVALE RD

Survey Date: Tuesday, March 01, 2016

Start Time: 07:00

WO No: 35759

Device: Miovision



Turning Movement Count - 15 Min U-Turn Total Report

Survey Date: Tuesday, March 01, 2016

Time Period		Northbound		Southbound		Eastbound		Westbound		Total
		U-Turn	Total	U-Turn	Total	U-Turn	Total	U-Turn	Total	
07:00	07:15	0		0		0		0		0
07:15	07:30	0		0		0		0		0
07:30	07:45	0		0		0		0		0
07:45	08:00	0		0		0		0		0
08:00	08:15	0		1		0		0		1
08:15	08:30	0		0		0		0		0
08:30	08:45	0		0		0		0		0
08:45	09:00	1		0		0		0		1
09:00	09:15	0		1		0		0		1
09:15	09:30	0		0		0		0		0
09:30	09:45	0		0		0		0		0
09:45	10:00	0		0		0		0		0
11:30	11:45	0		0		0		0		0
11:45	12:00	0		0		0		0		0
12:00	12:15	0		0		0		0		0
12:15	12:30	0		0		0		0		0
12:30	12:45	0		0		0		0		0
12:45	13:00	0		0		0		0		0
13:00	13:15	0		0		0		0		0
13:15	13:30	0		0		0		0		0
15:00	15:15	0		0		0		0		0
15:15	15:30	0		0		0		0		0
15:30	15:45	0		0		0		0		0
15:45	16:00	0		0		0		0		0
16:00	16:15	0		0		0		0		0
16:15	16:30	0		0		0		0		0
16:30	16:45	0		1		0		0		1
16:45	17:00	0		0		0		0		0
17:00	17:15	0		0		0		0		0
17:15	17:30	0		1		0		0		1
17:30	17:45	0		0		0		0		0
17:45	18:00	0		0		0		0		0
Total		1		4		0		0		5



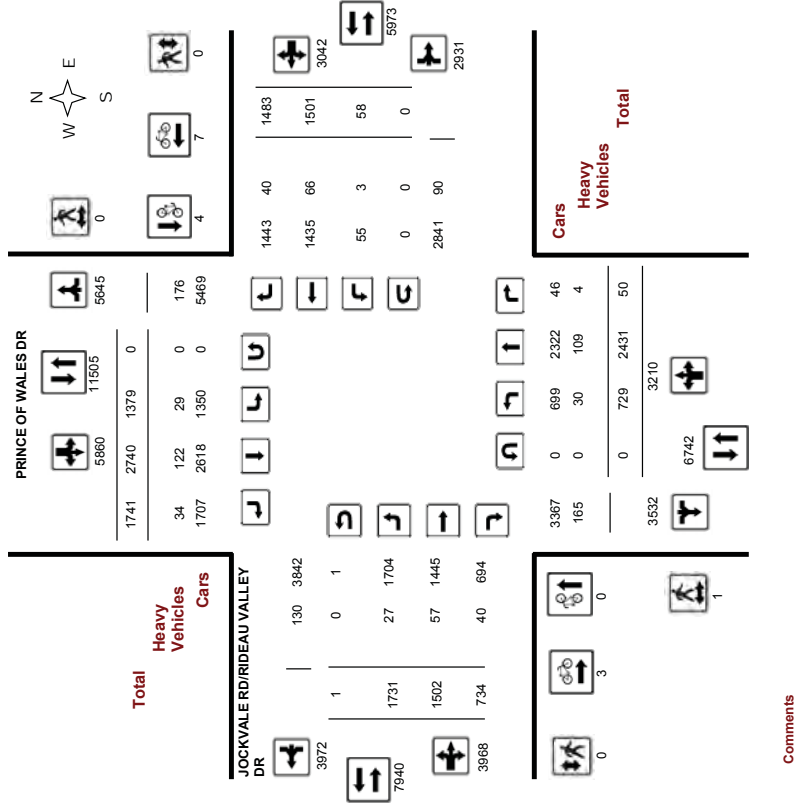
Public Works - Traffic Services

JOCKVALE RD/RIDEAU VALLEY DR @ PRINCE OF WALES

Survey Date: Thursday, October 01, 2015

WO#: 35438

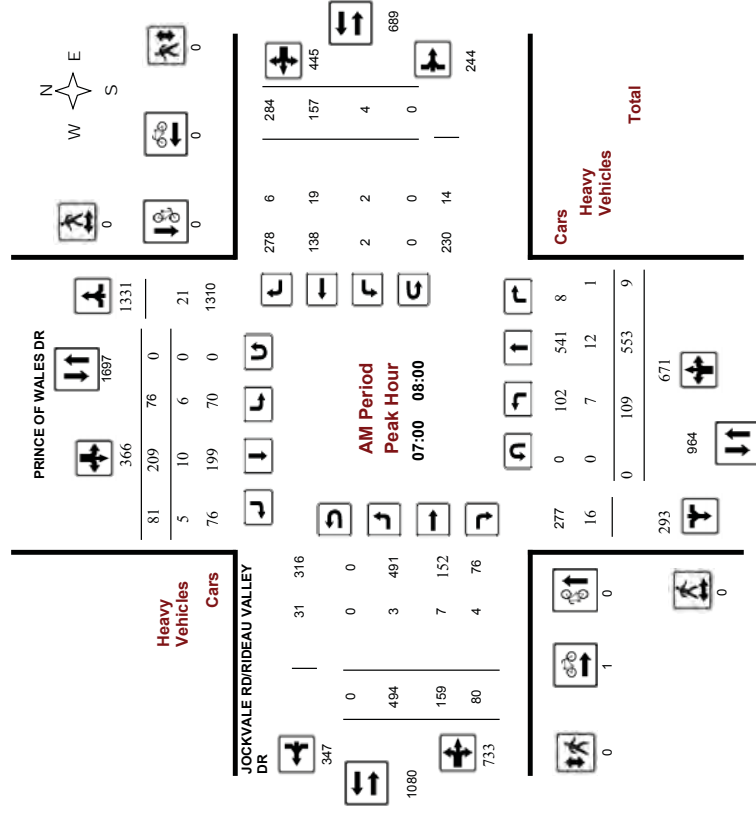
Device: Miovision



2016-Jul-06

Page 1 of 1

WO No:	35438
Device:	Miovision

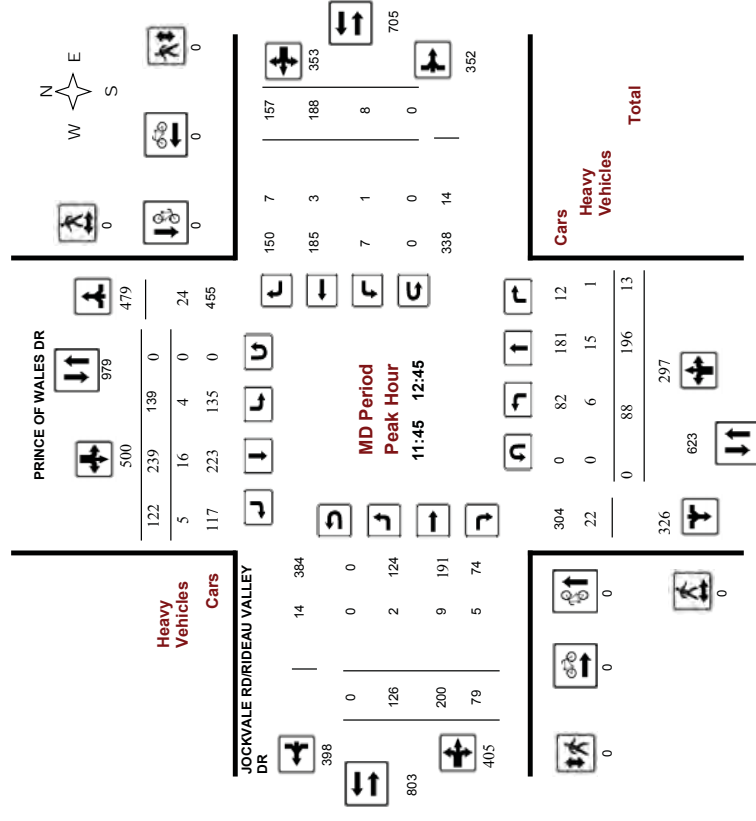


Comments

2016-Jul-06

2016-Jul-06

Page 2 of 3



Comments

2016-Jul-06

2016-Jul-06

Page 2 of 3



Public Works - Traffic Services

Work Order
35438

Turning Movement Count - Full Study Summary Report

JOCKVALE RD/RIDEAU VALLEY DR @ PRINCE OF WALES

Survey Date: Thursday, October 01, 2015 **Total Observed U-Turns** **AADT Factor**
Northbound: 0 Southbound: 0 90
Eastbound: 1 Westbound: 0

Survey Date: Thursday, October 01, 2015 **WO No:** 35438

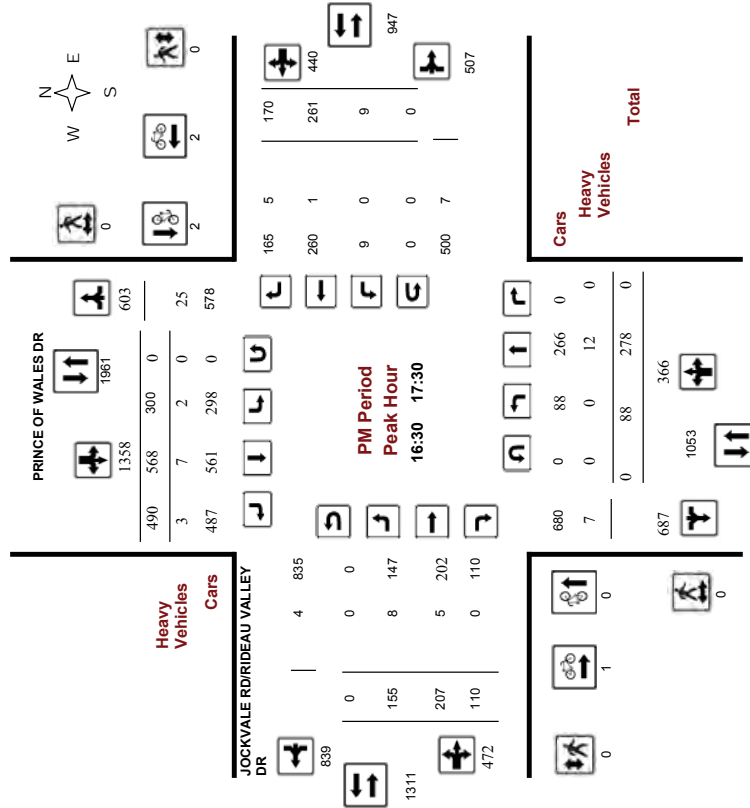
Start Time: 07:00 **Device:** Miovision



Public Works - Traffic Services

Turning Movement Count - Peak Hour Diagram

JOCKVALE RD/RIDEAU VALLEY DR @ PRINCE OF WALES



Full Study

JOCKVALE RD/RIDEAU VALLEY DR

Period	Northbound					Southbound					Eastbound					Westbound					Grand TOT
	LT	ST	RT	NB	TOT	LT	ST	RT	SB	TOT	LT	ST	RT	EB	TOT	LT	ST	RT	WB	TOT	
07:00 08:00	109	553	9	671	7	209	81	366	1037	494	159	80	733	4	157	284	445	1778	2215		
08:00 09:00	89	403	10	502	123	207	78	408	910	362	191	92	645	4	169	244	417	1062	1972		
09:00 10:00	76	348	2	426	112	212	100	424	850	218	131	78	427	4	145	158	307	734	1584		
11:30 12:30	83	205	12	300	145	226	122	493	793	129	192	79	400	6	178	159	343	743	1536		
12:30 13:30	68	204	11	283	141	260	114	515	798	105	168	82	355	6	152	159	317	672	1470		
15:00 16:00	97	194	5	296	216	524	336	1076	1372	125	249	93	467	17	202	161	380	847	2219		
16:00 17:00	105	278	1	384	284	597	405	1286	1670	141	201	114	456	14	242	160	416	872	2542		
17:00 18:00	102	246	0	348	282	505	505	1292	1640	157	211	116	484	3	256	158	417	901	2541		
Sub Total	729	2431	50	3210	1379	2740	1741	5860	9070	1731	1502	734	3967	58	1501	1483	3042	7009	16079		
U-Turns	0					0					1					0					
Total	729	2431	50	3210	1379	2740	1741	5860	9070	1731	1502	734	3968	58	1501	1483	3042	7010	16080		
EQ 12hr	1013	3379	70	4462	1917	3809	2420	8145	12607	2406	2088	1020	5516	81	2086	2061	4228	9744	22351		
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																					
												1.39									
AVG 12hr	912	3041	63	4016	1725	3428	2178	7331	11347	2165	1879	918	4964	73	1878	1855	3806	8770	20117		
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																					
AVG 24hr	1195	3984	82	5261	2260	4490	2853	9603	14864	2837	2461	1203	6503	95	2460	2430	4985	11488	26352		
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.																					
Comments:																					
Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.																					



Public Works - Traffic Services

W.O. 35438

Turning Movement Count - 15 Minute Summary Report
JOCKVALE RD/IDEAU VALLEY DR @ PRINCE OF WALES

Survey Date: Thursday, October 01, 2015										Total Observed U-Turns										
										Northbound: 0					Southbound: 0					
										Eastbound: 1					Westbound: 0					
										JOCKVALE RD/IDEAU VALLEY DR										
										Eastbound					Westbound					
PRINCE OF WALES DR										S					E					
Northbound					Southbound					TOT		TOT		TOT		TOT		TOT		
LT	ST	RT	N		LT	ST	RT	S		LT	ST	RT	E		LT	ST	RT	W		
Time Period																				
07:00	07:15	28	163	1	192	13	48	16	77	269	118	23	16	157	0	33	72	105	262	
07:15	07:30	22	142	0	164	18	56	18	92	256	131	53	22	186	1	48	72	121	307	
07:30	07:45	28	139	4	171	22	55	25	102	273	138	52	18	208	1	41	74	116	324	
07:45	08:00	31	109	4	144	23	50	22	95	239	107	51	24	182	2	35	66	103	285	
08:00	08:15	15	115	0	130	26	51	19	96	226	94	40	18	152	0	39	63	102	254	
08:15	08:30	24	112	7	143	35	44	27	106	249	91	51	25	167	1	50	49	100	267	
08:30	08:45	23	89	1	113	22	53	16	91	204	84	47	17	148	2	43	65	110	258	
08:45	09:00	27	87	2	116	40	59	16	115	231	93	53	32	178	1	37	67	105	293	
09:00	09:15	25	97	1	123	34	53	25	112	235	83	33	18	134	1	33	45	79	213	
09:15	09:30	15	93	1	109	30	57	24	111	220	43	37	18	98	1	34	35	70	168	
09:30	09:45	20	76	0	96	21	49	21	91	187	53	28	21	102	2	36	44	82	184	
09:45	10:00	16	82	0	98	27	53	30	110	208	39	33	21	93	0	42	34	76	169	
10:00	10:15	17	54	4	75	37	60	28	125	200	25	34	18	77	0	33	41	74	151	
11:45	12:00	31	49	3	83	34	66	35	135	218	35	47	14	96	3	50	43	96	192	
12:00	12:15	16	45	2	63	37	52	29	118	181	35	59	21	115	2	50	33	85	200	
12:15	12:30	19	57	3	79	37	48	30	115	194	34	52	26	112	1	45	42	88	200	
12:30	12:45	22	45	5	72	31	73	28	132	204	22	42	18	82	2	43	39	84	166	
12:45	13:00	20	58	3	81	48	69	32	149	230	25	42	26	93	0	41	44	85	178	
13:00	13:15	14	59	1	74	21	62	29	112	186	21	40	23	84	2	37	42	81	165	
13:15	13:30	12	42	2	56	41	56	25	122	178	37	44	15	96	2	31	34	67	163	
15:00	15:15	26	51	2	79	48	101	70	219	298	40	46	24	110	4	52	37	93	203	
15:15	15:30	30	47	1	78	55	134	104	293	371	25	60	17	102	2	55	44	101	203	
15:30	15:45	21	64	0	55	60	142	81	283	338	25	65	26	116	5	48	33	86	202	
15:45	16:00	20	32	2	84	53	147	81	281	365	35	78	26	139	6	47	100	239	584	
16:00	16:15	24	58	1	83	63	149	82	294	372	27	57	33	136	5	47	37	89	205	
16:15	16:30	28	71	0	99	66	158	97	321	420	35	46	26	107	2	59	36	97	204	
16:30	16:45	24	70	0	94	75	160	122	357	451	40	59	37	136	5	69	49	123	259	
16:45	17:00	29	79	0	108	80	130	104	314	422	40	39	18	97	2	67	38	107	204	
17:00	17:15	12	64	0	76	72	133	143	348	424	35	50	25	110	2	69	45	116	226	
17:15	17:30	23	65	0	88	73	145	121	339	427	40	59	30	129	0	56	38	94	223	
17:30	17:45	34	59	0	93	71	142	132	324	417	33	46	31	110	1	58	35	94	204	
17:45	18:00	33	58	0	91	66	106	109	281	372	49	56	30	136	0	73	40	113	249	
TOTAL:		729	2431	50	3210	1379	2740	1741	8660	9070	1731	1502	734	3968	58	1501	1483	3042	7010	
																				10080



Public Works - Traffic Services

W.O.
35438

Turning Movement Count - Heavy Vehicle Report

JOCKVALE RD/RIDEAU VALLEY DR @ PRINCE OF WALES																								
Survey Date: Thursday, October 01, 2015																								
PRINCE OF WALES DR										JOCKVALE RD/RIDEAU VALLEY DR														
Northbound					Southbound					Eastbound					Westbound									
Time Period	LT	ST	RT	TOT	N	LT	ST	RT	TOT	S	STR	LT	ST	RT	TOT	E	LT	ST	RT	TOT	W	STR	TOT	Grand Total
07:00 08:00	7	12	1	20	6	10	5	21	41	3	7	4	14	2	19	6	27	41	82					
08:00 09:00	7	17	0	24	4	17	7	28	52	1	7	5	13	0	14	4	18	31	83					
09:00 10:00	1	14	0	15	5	17	7	29	44	2	7	7	16	0	5	6	11	27	71					
11:30 12:30	8	11	3	22	3	22	5	30	52	3	11	6	20	1	7	10	18	38	90					
12:30 13:30	3	17	0	20	4	17	3	24	44	4	3	5	12	0	4	5	9	21	65					
15:00 16:00	3	13	0	16	1	20	2	23	39	3	12	3	18	0	9	1	10	28	67					
16:00 17:00	1	16	0	17	6	11	4	21	38	9	5	8	22	0	3	4	7	29	67					
17:00 18:00	0	9	0	9	0	8	1	9	18	2	5	2	9	0	5	4	9	18	36					
Sub Total	30	109	4	143	29	122	34	185	328	27	57	40	124	3	66	40	109	233	561					
U-Turns (Heavy Vehicles)					0					0	0					0					0	0		
Total	30	109	4	0	29	122	34	185	328	27	57	40	124	3	66	40	109	233	561					
Heavy Vehicles are vehicles having one rear axle with four or more wheels, or having two or more rear axles. These vehicles include most O.C. Transpo, school and inter-city buses. Further, they ARE included in the Turning Movement Count Summary.																								



Public Works - Traffic Services

Turning Movement Count - Cyclist Volume Report

Work Order
35438

JOCKVALE RD/RIDEAU VALLEY DR @ PRINCE OF WALES									
Count Date: Thursday, October 01, 2015									
Start Time: 07:00									
PRINCE OF WALES DR					JOCKVALE RD/RIDEAU VALLEY DR				
Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total		
07:00 08:00	0	0	0	1	0	1	1	1	
08:00 09:00	0	0	0	0	2	2	2	2	
09:00 10:00	0	0	0	0	0	0	0	0	
11:30 12:30	0	0	0	0	0	0	0	0	
12:30 13:30	0	0	0	0	0	0	0	0	
15:00 16:00	0	2	2	1	0	1	1	3	
16:00 17:00	0	1	1	1	3	4	4	5	
17:00 18:00	0	1	1	0	2	2	2	3	
Total	0	4	4	3	7	10	14	14	
Comment:									

Appendix C

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	12	6	1	4	1	1	0	1	26
Non-fatal injury	3	6	0	1	1	0	0	0	11
Non reportable	0	0	0	0	0	0	0	0	0
Total	15	12	1	5	2	1	0	1	37
	#1 or 41%	#2 or 32%	#5 or 3%	#3 or 14%	#4 or 5%	#5 or 3%	#8 or 0%	#5 or 3%	

70%
30%
0%
100%

LONGFIELDS DR, GOLFLINKS DR to PRINCE OF WALES DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	6	10,750	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	0	0	0	1	1	0	0	4
Non-fatal injury	1	0	0	0	1	0	0	0	2
Non reportable	0	0	0	0	0	0	0	0	0
Total	3	0	0	0	2	1	0	0	6
	50%	0%	0%	0%	33%	17%	0%	0%	

67%
33%
0%
100%

LONGFIELDS DR/PRINCE OF WALES DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	29	26,350	1825	0.60

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total
P.D. only	9	5	1	4	0	0	0	1	20
Non-fatal injury	2	6	0	1	0	0	0	0	9
Non reportable	0	0	0	0	0	0	0	0	0
Total	11	11	1	5	0	0	0	1	29
	38%	38%	3%	17%	0%	0%	0%	3%	

69%
31%
0%
100%

LONGFIELDS DR/GOLFLINKS DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2012-2016	2	11,700	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	1	0	0	0	0	0	0	2
Non-fatal injury	0	0	0	0	0	0	0	0	0
Non reportable	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	0	0	0	0	2
	50%	50%	0%	0%	0%	0%	0%	0%	






















100%
0%
0%
100%

Appendix D

Existing Traffic SYNCHRO Analysis

Lanes, Volumes, Timings
3: Prince of Wales & Longfields/Rideau Valley

Existing AM
09/17/2019

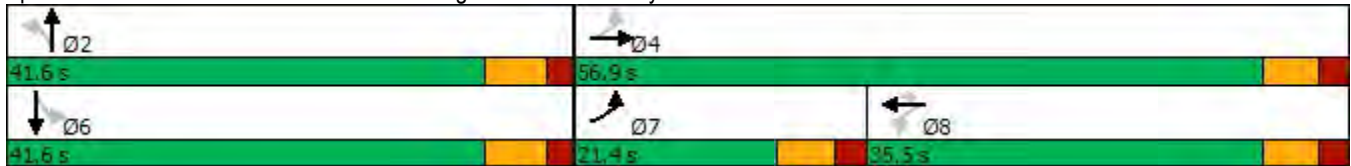
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	463	133	71	4	118	284	83	553	9	76	209	75
Future Volume (vph)	463	133	71	4	118	284	83	553	9	76	209	75
Satd. Flow (prot)	1658	1654	0	0	1743	1483	1658	3309	0	1658	3183	0
Flt Permitted	0.493				0.988		0.561			0.355		
Satd. Flow (perm)	860	1654	0	0	1724	1483	979	3309	0	620	3183	0
Satd. Flow (RTOR)		40				122		2			57	
Lane Group Flow (vph)	514	227	0	0	135	316	92	624	0	84	315	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4	4		8		8	2			6		
Detector Phase	7	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		10.0	10.0	
Minimum Split (s)	11.5	35.5		35.5	35.5	35.5	41.6	41.6		41.6	41.6	
Total Split (s)	21.4	56.9		35.5	35.5	35.5	41.6	41.6		41.6	41.6	
Total Split (%)	21.7%	57.8%		36.0%	36.0%	36.0%	42.2%	42.2%		42.2%	42.2%	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.6	4.6		4.6	4.6	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5			6.5	6.5	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	
Act Effct Green (s)	39.4	39.4			17.9	17.9	35.2	35.2		35.2	35.2	
Actuated g/C Ratio	0.45	0.45			0.20	0.20	0.40	0.40		0.40	0.40	
v/c Ratio	0.98	0.30			0.38	0.79	0.23	0.47		0.34	0.24	
Control Delay	58.5	13.2			32.6	34.5	21.7	22.0		25.7	15.9	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.5	13.2			32.6	34.5	21.7	22.0		25.7	15.9	
LOS	E	B			C	C	C	C		C	B	
Approach Delay		44.6			33.9			21.9			17.9	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	66.3	18.8			19.7	31.1	9.8	38.8		9.4	14.2	
Queue Length 95th (m)	#130.6	32.8			34.9	59.5	24.6	65.5		25.8	28.2	
Internal Link Dist (m)		525.8			356.5			519.8			1117.7	
Turn Bay Length (m)	85.0					75.0	90.0			240.0		
Base Capacity (vph)	522	971			572	573	392	1327		248	1309	
Starvation Cap Reductn	0	0			0	0	0	0		0	0	
Spillback Cap Reductn	0	0			0	0	0	0		0	0	
Storage Cap Reductn	0	0			0	0	0	0		0	0	
Reduced v/c Ratio	0.98	0.23			0.24	0.55	0.23	0.47		0.34	0.24	
Intersection Summary												
Cycle Length: 98.5												
Actuated Cycle Length: 87.8												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.98												






Lanes, Volumes, Timings 3: Prince of Wales & Longfields/Rideau Valley






Existing AM
09/17/2019

Intersection Signal Delay: 30.9 Intersection LOS: C
Intersection Capacity Utilization 78.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prince of Wales & Longfields/Rideau Valley
























Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	89	68	296	12	20	531
Future Vol, veh/h	89	68	296	12	20	531
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	400	0	-	-	1000	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	76	329	13	22	590
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	970	336	0	0	342	0
Stage 1	336	-	-	-	-	-
Stage 2	634	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	281	706	-	-	1217	-
Stage 1	724	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	276	706	-	-	1217	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.9	0	0.3			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 276 706	1217	-		
HCM Lane V/C Ratio	-	- 0.358 0.107	0.018	-		
HCM Control Delay (s)	-	- 25.2 10.7	8	-		
HCM Lane LOS	-	- D B	A	-		
HCM 95th %tile Q(veh)	-	- 1.6 0.4	0.1	-		

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	52	256	20	16	604
Future Vol, veh/h	63	52	256	20	16	604
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	750	1200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	58	284	22	18	671
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	991	284	0	0	306	0
Stage 1	284	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	273	755	-	-	1255	-
Stage 1	764	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	269	755	-	-	1255	-
Mov Cap-2 Maneuver	269	-	-	-	-	-
Stage 1	753	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	19.3	0		0.2		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	379	1255	-
HCM Lane V/C Ratio		-	-	0.337	0.014	-
HCM Control Delay (s)		-	-	19.3	7.9	-
HCM Lane LOS		-	-	C	A	-
HCM 95th %tile Q(veh)		-	-	1.5	0	-

Lanes, Volumes, Timings
3: Prince of Wales & Longfields/Rideau Valley

Existing PM
09/17/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	156	89	9	201	170	76	278	0	300	568	413
Future Volume (vph)	142	156	89	9	201	170	76	278	0	300	568	413
Satd. Flow (prot)	1658	1649	0	0	1742	1483	1658	3316	0	1658	3107	0
Flt Permitted	0.341				0.977		0.262			0.476		
Satd. Flow (perm)	595	1649	0	0	1705	1483	457	3316	0	831	3107	0
Satd. Flow (RTOR)		35				189					245	
Lane Group Flow (vph)	158	272	0	0	233	189	84	309	0	333	1090	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		8	8	8	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0	10.0	10.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	35.5		35.5	35.5	35.5	38.6	38.6		11.0	38.6	
Total Split (s)	11.5	47.0		35.5	35.5	35.5	39.0	39.0		14.0	53.0	
Total Split (%)	11.5%	47.0%		35.5%	35.5%	35.5%	39.0%	39.0%		14.0%	53.0%	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.6	4.6		4.0	4.6	
All-Red Time (s)	2.3	2.3		2.3	2.3	2.3	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5			6.5	6.5	6.6	6.6		6.0	6.6	
Lead/Lag	Lead			Lag	Lag	Lag	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Recall Mode	None	None		None	None	None	Max	Max		None	Max	
Act Effct Green (s)	28.8	28.8			17.3	17.3	32.5	32.5		47.2	46.6	
Actuated g/C Ratio	0.33	0.33			0.20	0.20	0.37	0.37		0.53	0.53	
v/c Ratio	0.62	0.49			0.70	0.43	0.50	0.25		0.64	0.62	
Control Delay	34.4	23.5			44.8	7.7	36.5	21.1		21.0	13.6	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.4	23.5			44.8	7.7	36.5	21.1		21.0	13.6	
LOS	C	C			D	A	D	C		C	B	
Approach Delay		27.5			28.2			24.4			15.3	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	19.7	31.5			37.1	0.0	10.8	18.7		30.8	49.0	
Queue Length 95th (m)	34.2	52.7			60.1	15.5	#31.6	32.3		59.2	83.2	
Internal Link Dist (m)		525.8			356.5			519.8			1117.7	
Turn Bay Length (m)	85.0					75.0	90.0			240.0		
Base Capacity (vph)	254	776			560	614	167	1217		517	1750	
Starvation Cap Reductn	0	0			0	0	0	0		0	0	
Spillback Cap Reductn	0	0			0	0	0	0		0	0	
Storage Cap Reductn	0	0			0	0	0	0		0	0	
Reduced v/c Ratio	0.62	0.35			0.42	0.31	0.50	0.25		0.64	0.62	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 88.5

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

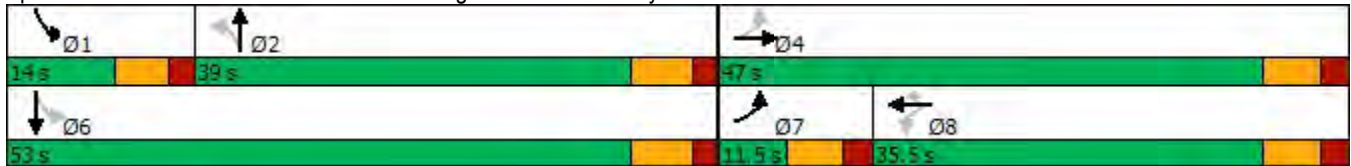
Maximum v/c Ratio: 0.70






Lanes, Volumes, Timings 3: Prince of Wales & Longfields/Rideau Valley






Existing PM
09/17/2019

Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 86.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Prince of Wales & Longfields/Rideau Valley



Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	32	591	65	53	385
Future Vol, veh/h	18	32	591	65	53	385
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	400	0	-	-	1000	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	36	657	72	59	428
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1239	693	0	0	729	0
Stage 1	693	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	194	443	-	-	875	-
Stage 1	496	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	181	443	-	-	875	-
Mov Cap-2 Maneuver	181	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.7	0	1.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 181 443	875	-		
HCM Lane V/C Ratio	-	- 0.11 0.08	0.067	-		
HCM Control Delay (s)	-	- 27.3 13.8	9.4	-		
HCM Lane LOS	-	- D B	A	-		
HCM 95th %tile Q(veh)	-	- 0.4 0.3	0.2	-		

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	31	625	65	53	350
Future Vol, veh/h	37	31	625	65	53	350
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	750	1200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	34	694	72	59	389
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1201	694	0	0	766	0
Stage 1	694	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	204	443	-	-	847	-
Stage 1	496	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	190	443	-	-	847	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	24.7	0	1.3			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	257	847	-	
HCM Lane V/C Ratio	-	-	0.294	0.07	-	
HCM Control Delay (s)	-	-	24.7	9.6	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	1.2	0.2	-	

Appendix E

Preliminary Design Sketch Longfields Drive Widening





PRELIMINARY DESIGN
JOCKVALE ROAD / PRINCE OF WALES DRIVE
WIDENING
JUNE 2017
SCALE 1:500

Appendix F

MMLOS Road Segment Analysis

Multi-Modal Level of Service - Segments Form

Consultant	Parsons	Project	476616
Scenario	2701 Longfields Drive	Date	8-May-18
Comments			

SEGMENTS		Street A	Longfields Existing 1	Longfields Widened 2
Pedestrian	Sidewalk Width	E	no sidewalk	≥ 2 m
	Boulevard Width		n/a	0.5 - 2 m
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000
	Operating Speed		> 60 km/h	> 60 km/h
	On-Street Parking		no	no
	Exposure to Traffic PLoS		F	E
	Effective Sidewalk Width			3.0 m
	Pedestrian Volume			250 ped/hr
	Crowding PLoS		-	A
	Level of Service		-	E
Bicycle	Type of Cycling Facility	F	Mixed Traffic	Physically Separated
	Number of Travel Lanes		≤ 2 (no centreline)	
	Operating Speed		≥ 60 km/h	
	# of Lanes & Operating Speed LoS		F	-
	Bike Lane (+ Parking Lane) Width			
	Bike Lane Width LoS		-	-
	Bike Lane Blockages			
	Blockage LoS		-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge	
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes	
	Sidestreet Operating Speed		>40 to 50 km/h	
	Unsignalized Crossing - Lowest LoS		B	A
	Level of Service		F	A
Transit	Facility Type	D	Mixed Traffic	Mixed Traffic
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8	Vt/Vp ≥ 0.8
	Level of Service		D	D
Truck	Truck Lane Width	B	> 3.7 m	> 3.7 m
	Travel Lanes per Direction		1	> 1
	Level of Service		B	A

Appendix G

OC-Transpo Ridership Data

Harte, Andrew

From: Stefanoff, Genya <genya.stefanoff@ottawa.ca>
Sent: Tuesday, May 08, 2018 1:24 PM
To: Harte, Andrew
Subject: RE: Transit Ridership Information - Longfields Drive Routes 175, 176 and 305

Hi Andrew,

Please find below ridership information for the requested routes/stops for the Sept. 2017 booking. Note that Route 305 is a shoppers route and only operates one inbound trip and one outbound trip on Fridays.

In terms of bus assignment, Routes 175 and 176 are planned to operate with 40-foot buses.

AM Peak Period (6:00 to 9:00)

Stop	Route	Boardings	Alightings	Average Load at Departure
0434	175	0	0	1
1990	176	1	0	6
1990	305	N/A	N/A	N/A
1113	176	1	0	3
1113	305	N/A	N/A	N/A

Note: Route 305 is a shopper route operating once a week, stop level data is not available.

PM Peak Period (15:00 to 18:00)

Stop	Route	Boardings	Alightings	Average Load at Departure
0434	175	0	1	1
1990	176	0	0	3
1990	305	N/A	N/A	N/A
1113	176	0	1	5
1113	305	N/A	N/A	N/A

Let me know if you have any questions, or need more information.

Best regards,
Genya

Genya Stefanoff, MCIP, RPP
Senior Transit Planner, Service Strategy

City of Ottawa | OC Transpo | Transportation Services Department
1500 St. Laurent Blvd., Ottawa, ON K1G 0Z8

tel: 613-580-2424 ext. 52294
genya.stefanoff@ottawa.ca

Appendix H

MMLOS Intersection Analysis

Multi-Modal Level of Service - Intersections Form

Consultant	Parsons	Project	476616
Scenario	2701 Longfields Drive	Date	17-Sep-19
Comments			

INTERSECTIONS		Prince of Wales/Longfields (Existing)				Kilspindie/Longfields (Roundabout)							
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST				
Pedestrian	Lanes	6	5	3	3								
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m								
	Conflicting Left Turns	Permissive	Permissive	Permissive	Permissive								
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control								
	Right Turns on Red (RTor) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed								
	Ped Signal Leading Interval?	No	No	No	No								
	Right Turn Channel	No Channel	No Channel	Conventional with Receiving Lane	No Channel								
	Corner Radius	10-15m	10-15m	>25m	10-15m								
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings								
	PETSI Score	20	37	68	70								
	Ped. Exposure to Traffic LoS	F	E	C	C	-	-	-	-				
	Cycle Length												
Effective Walk Time													
Average Pedestrian Delay													
Pedestrian Delay LoS	-	-	-	-	-	-	-	-					
Level of Service	F	E	C	C	-	-	-	-					
		F				-							
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	0	0	0	0
Bicycle	Bicycle Lane Arrangement on Approach	Pocket Bike Lane	Pocket Bike Lane	Pocket Bike Lane	Pocket Bike Lane								
	Right Turn Lane Configuration	≤ 50 m Introduced right turn lane	> 50 m Introduced right turn lane	Bike lane shifts to the left of right turn	≤ 50 m Introduced right turn lane								
	Right Turning Speed	≤ 25 km/h	≤ 25 km/h	>25 to 30 km/h	≤ 25 km/h								
	Cyclist relative to RT motorists	B	D	F	B	-	-	-	-	-	-	-	-
	Separated or Mixed Traffic	Separated	Separated	Separated	Separated	-	-	-	-	-	-	-	-
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	No lane crossed	1 lane crossed								
	Operating Speed	≥ 60 km/h	≥ 60 km/h	> 50 to < 60 km/h	> 50 to < 60 km/h								
	Left Turning Cyclist	F	F	C	D	-	-	-	-	-	-	-	-
	Level of Service	F	F	F	D	-	-	-	-	-	-	-	-
		F				-				-			
Transit	Average Signal Delay	≤ 20 sec	≤ 30 sec	≤ 40 sec	> 40 sec								
	Level of Service	C	D	E	F	-	-	-	-	-	-	-	-
		F				-				-			
Truck	Effective Corner Radius	10 - 15 m	10 - 15 m	> 15 m	10 - 15 m								
	Number of Receiving Lanes on Departure from Intersection	≥ 2	≥ 2	≥ 2	≥ 2								
	Level of Service	B	B	A	B	-	-	-	-	-	-	-	-
		B				-				-			
Auto	Volume to Capacity Ratio												
	Level of Service	-				-				-			

Appendix I

Future Background Traffic SIDRA Analysis

MOVEMENT SUMMARY

 **Site: 101 [Golflinks BG2021 AM]**

Golflinks Background 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	7	0.0	0.020	11.2	LOS B	0.1	0.5	0.51	0.67	0.51	54.0
2	T1	1	0.0	0.020	6.0	LOS A	0.1	0.5	0.51	0.67	0.51	53.8
3	R2	7	0.0	0.020	5.9	LOS A	0.1	0.5	0.51	0.67	0.51	52.5
Approach		16	0.0	0.020	8.4	LOS A	0.1	0.5	0.51	0.67	0.51	53.3
East: Longfields												
4	L2	3	0.0	0.121	9.0	LOS A	0.6	4.5	0.13	0.37	0.13	57.0
5	T1	367	0.0	0.121	3.8	LOS A	0.6	4.5	0.12	0.37	0.12	57.0
6	R2	13	0.0	0.121	3.9	LOS A	0.6	4.5	0.12	0.37	0.12	55.2
Approach		383	0.0	0.121	3.9	LOS A	0.6	4.5	0.12	0.37	0.12	56.9
North: Golflinks												
7	L2	94	0.0	0.169	10.4	LOS B	0.7	4.6	0.41	0.67	0.41	54.1
8	T1	1	0.0	0.169	5.2	LOS A	0.7	4.6	0.41	0.67	0.41	53.9
9	R2	72	0.0	0.169	5.1	LOS A	0.7	4.6	0.41	0.67	0.41	52.7
Approach		166	0.0	0.169	8.1	LOS A	0.7	4.6	0.41	0.67	0.41	53.5
West: Longfields												
10	L2	21	0.0	0.238	9.4	LOS A	1.5	10.3	0.29	0.43	0.29	56.0
11	T1	677	0.0	0.238	4.2	LOS A	1.5	10.5	0.28	0.41	0.28	56.1
12	R2	1	0.0	0.238	4.2	LOS A	1.5	10.5	0.28	0.40	0.28	54.5
Approach		699	0.0	0.238	4.3	LOS A	1.5	10.5	0.28	0.41	0.28	56.1
All Vehicles		1264	0.0	0.238	4.7	LOS A	1.5	10.5	0.25	0.44	0.25	55.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Golflinks BG2021 PM]**

Golflinks Background 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	4	0.0	0.009	10.6	LOS B	0.0	0.2	0.43	0.61	0.43	54.2
2	T1	1	0.0	0.009	5.4	LOS A	0.0	0.2	0.43	0.61	0.43	54.0
3	R2	3	0.0	0.009	5.3	LOS A	0.0	0.2	0.43	0.61	0.43	52.8
Approach		8	0.0	0.009	7.9	LOS A	0.0	0.2	0.43	0.61	0.43	53.6
East: Longfields												
4	L2	13	0.0	0.268	9.2	LOS A	1.6	11.2	0.22	0.39	0.22	56.5
5	T1	749	0.0	0.268	4.0	LOS A	1.6	11.2	0.21	0.39	0.21	56.5
6	R2	68	0.0	0.268	4.1	LOS A	1.6	11.2	0.20	0.39	0.20	54.9
Approach		831	0.0	0.268	4.1	LOS A	1.6	11.2	0.21	0.39	0.21	56.4
North: Golflinks												
7	L2	19	0.0	0.065	11.2	LOS B	0.2	1.7	0.51	0.71	0.51	54.5
8	T1	1	0.0	0.065	6.0	LOS A	0.2	1.7	0.51	0.71	0.51	54.2
9	R2	34	0.0	0.065	5.9	LOS A	0.2	1.7	0.51	0.71	0.51	53.0
Approach		54	0.0	0.065	7.8	LOS A	0.2	1.7	0.51	0.71	0.51	53.5
West: Longfields												
10	L2	56	0.0	0.171	9.1	LOS A	1.0	6.9	0.15	0.44	0.15	56.1
11	T1	484	0.0	0.171	3.9	LOS A	1.0	6.9	0.14	0.40	0.14	56.6
12	R2	4	0.0	0.171	4.0	LOS A	1.0	6.9	0.14	0.37	0.14	55.2
Approach		544	0.0	0.171	4.4	LOS A	1.0	6.9	0.14	0.40	0.14	56.5
All Vehicles		1437	0.0	0.268	4.4	LOS A	1.6	11.2	0.19	0.41	0.19	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie BG2021 AM]**

Kilspindie Background 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	1	0.0	0.004	11.2	LOS B	0.0	0.1	0.48	0.59	0.48	54.4
2	T1	1	0.0	0.004	5.9	LOS A	0.0	0.1	0.48	0.59	0.48	54.2
3	R2	1	0.0	0.004	5.8	LOS A	0.0	0.1	0.48	0.59	0.48	53.0
Approach		3	0.0	0.004	7.6	LOS A	0.0	0.1	0.48	0.59	0.48	53.9
East: Longfields												
4	L2	1	0.0	0.109	9.0	LOS A	0.5	3.8	0.09	0.37	0.09	57.2
5	T1	331	0.0	0.109	3.8	LOS A	0.5	3.8	0.09	0.37	0.09	57.2
6	R2	21	0.0	0.109	3.9	LOS A	0.5	3.8	0.08	0.37	0.08	55.4
Approach		353	0.0	0.109	3.8	LOS A	0.5	3.8	0.09	0.37	0.09	57.1
North: Kilspindie												
7	L2	1	0.0	0.003	10.0	LOS A	0.0	0.1	0.35	0.52	0.35	55.1
8	T1	1	0.0	0.003	4.8	LOS A	0.0	0.1	0.35	0.52	0.35	54.9
9	R2	1	0.0	0.003	4.7	LOS A	0.0	0.1	0.35	0.52	0.35	53.6
Approach		3	0.0	0.003	6.5	LOS A	0.0	0.1	0.35	0.52	0.35	54.5
West: Longfields												
10	L2	17	0.0	0.236	8.9	LOS A	1.4	10.0	0.04	0.38	0.04	57.4
11	T1	788	0.0	0.236	3.7	LOS A	1.4	10.0	0.04	0.37	0.04	57.4
12	R2	1	0.0	0.236	3.9	LOS A	1.4	10.0	0.03	0.37	0.03	55.7
Approach		806	0.0	0.236	3.9	LOS A	1.4	10.0	0.04	0.37	0.04	57.4
All Vehicles		1165	0.0	0.236	3.9	LOS A	1.4	10.0	0.05	0.37	0.05	57.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie BG2021 PM]**

Kilspindie Background 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	1	0.0	0.003	10.5	LOS B	0.0	0.1	0.43	0.55	0.43	54.7
2	T1	1	0.0	0.003	5.3	LOS A	0.0	0.1	0.43	0.55	0.43	54.5
3	R2	1	0.0	0.003	5.2	LOS A	0.0	0.1	0.43	0.55	0.43	53.3
Approach		3	0.0	0.003	7.0	LOS A	0.0	0.1	0.43	0.55	0.43	54.2
East: Longfields												
4	L2	1	0.0	0.284	9.2	LOS A	1.7	12.2	0.22	0.38	0.22	56.6
5	T1	813	0.0	0.284	4.0	LOS A	1.7	12.2	0.21	0.39	0.21	56.6
6	R2	68	0.0	0.284	4.1	LOS A	1.7	12.2	0.20	0.39	0.20	54.9
Approach		882	0.0	0.284	4.0	LOS A	1.7	12.2	0.21	0.39	0.21	56.4
North: Kilspindie												
7	L2	39	0.0	0.090	11.4	LOS B	0.3	2.3	0.53	0.75	0.53	53.6
8	T1	1	0.0	0.090	6.2	LOS A	0.3	2.3	0.53	0.75	0.53	53.4
9	R2	33	0.0	0.090	6.1	LOS A	0.3	2.3	0.53	0.75	0.53	52.2
Approach		73	0.0	0.090	8.9	LOS A	0.3	2.3	0.53	0.75	0.53	53.0
West: Longfields												
10	L2	56	0.0	0.164	9.1	LOS A	1.0	6.9	0.17	0.44	0.17	55.9
11	T1	455	0.0	0.164	3.9	LOS A	1.0	7.1	0.17	0.40	0.17	56.4
12	R2	1	0.0	0.164	4.0	LOS A	1.0	7.1	0.16	0.37	0.16	55.0
Approach		512	0.0	0.164	4.5	LOS A	1.0	7.1	0.17	0.40	0.17	56.4
All Vehicles		1469	0.0	0.284	4.4	LOS A	1.7	12.2	0.21	0.41	0.21	56.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Background 2021 AM]**

Prince of Wales Background 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	105	0.0	0.514	14.6	LOS B	3.4	23.5	0.77	0.94	0.94	53.2
2	T1	708	0.0	0.514	8.4	LOS A	3.5	24.7	0.77	0.89	0.92	53.7
3	R2	12	0.0	0.514	8.2	LOS A	3.5	24.7	0.77	0.85	0.91	52.6
Approach		825	0.0	0.514	9.2	LOS A	3.5	24.7	0.77	0.89	0.92	53.7
East: Rideau Valley												
4	L2	5	0.0	0.099	13.6	LOS B	0.5	3.6	0.76	0.79	0.76	54.4
5	T1	157	0.0	0.099	7.2	LOS A	0.6	4.3	0.78	0.72	0.78	54.1
6	R2	378	0.0	0.196	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.9
Approach		540	0.0	0.196	4.6	LOS A	0.6	4.3	0.23	0.51	0.23	56.0
North: Prince of Wales												
7	L2	97	0.0	0.127	9.9	LOS A	0.6	4.0	0.36	0.58	0.36	54.7
8	T1	267	0.0	0.127	4.1	LOS A	0.6	4.1	0.34	0.44	0.34	56.0
9	R2	99	0.0	0.051	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		463	0.0	0.127	5.1	LOS A	0.6	4.1	0.27	0.47	0.27	55.9
West: Longfields												
10	L2	614	0.0	0.485	10.5	LOS B	2.8	19.3	0.52	0.73	0.52	52.4
11	T1	178	0.0	0.284	5.1	LOS A	1.3	9.0	0.47	0.55	0.47	56.1
12	R2	95	0.0	0.284	5.2	LOS A	1.3	9.0	0.47	0.55	0.47	54.3
Approach		886	0.0	0.485	8.9	LOS A	2.8	19.3	0.51	0.68	0.51	53.3
All Vehicles		2715	0.0	0.514	7.5	LOS A	3.5	24.7	0.49	0.67	0.54	54.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Background 2021 PM]**

Prince of Wales Background 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	95	0.0	0.259	12.2	LOS B	1.2	8.7	0.63	0.75	0.63	53.8
2	T1	356	0.0	0.259	6.2	LOS A	1.3	9.1	0.63	0.65	0.63	54.5
3	R2	1	0.0	0.259	6.1	LOS A	1.3	9.1	0.63	0.60	0.63	53.3
Approach		452	0.0	0.259	7.4	LOS A	1.3	9.1	0.63	0.67	0.63	54.4
East: Rideau Valley												
4	L2	12	0.0	0.113	10.7	LOS B	0.5	3.4	0.51	0.53	0.51	55.7
5	T1	265	0.0	0.113	4.8	LOS A	0.5	3.7	0.50	0.48	0.50	55.6
6	R2	226	0.0	0.118	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		503	0.0	0.118	4.3	LOS A	0.5	3.7	0.28	0.45	0.28	56.2
North: Prince of Wales												
7	L2	384	0.0	0.404	10.5	LOS B	2.1	15.0	0.50	0.69	0.50	53.5
8	T1	727	0.0	0.404	4.5	LOS A	2.2	15.6	0.47	0.48	0.47	55.5
9	R2	549	0.0	0.285	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.8
Approach		1661	0.0	0.404	5.5	LOS A	2.2	15.6	0.32	0.50	0.32	55.4
West: Longfields												
10	L2	188	0.0	0.316	12.7	LOS B	1.5	10.4	0.70	0.87	0.71	52.2
11	T1	207	0.0	0.316	6.3	LOS A	1.6	11.2	0.70	0.70	0.70	54.4
12	R2	117	0.0	0.316	6.3	LOS A	1.6	11.2	0.70	0.67	0.70	53.3
Approach		513	0.0	0.316	8.7	LOS A	1.6	11.2	0.70	0.76	0.70	53.3
All Vehicles		3128	0.0	0.404	6.1	LOS A	2.2	15.6	0.42	0.56	0.42	55.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Golflinks BG2026 AM]**

Golflinks Background 2026 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	7	0.0	0.021	11.5	LOS B	0.1	0.5	0.55	0.70	0.55	53.8
2	T1	1	0.0	0.021	6.3	LOS A	0.1	0.5	0.55	0.70	0.55	53.6
3	R2	7	0.0	0.021	6.2	LOS A	0.1	0.5	0.55	0.70	0.55	52.3
Approach		16	0.0	0.021	8.7	LOS A	0.1	0.5	0.55	0.70	0.55	53.1
East: Longfields												
4	L2	3	0.0	0.142	9.0	LOS A	0.8	5.3	0.13	0.37	0.13	57.0
5	T1	435	0.0	0.142	3.8	LOS A	0.8	5.4	0.12	0.37	0.12	57.0
6	R2	13	0.0	0.142	3.9	LOS A	0.8	5.4	0.12	0.37	0.12	55.2
Approach		451	0.0	0.142	3.9	LOS A	0.8	5.4	0.12	0.37	0.12	56.9
North: Golflinks												
7	L2	94	0.0	0.174	10.6	LOS B	0.7	4.7	0.44	0.70	0.44	54.0
8	T1	1	0.0	0.174	5.4	LOS A	0.7	4.7	0.44	0.70	0.44	53.8
9	R2	72	0.0	0.174	5.3	LOS A	0.7	4.7	0.44	0.70	0.44	52.6
Approach		166	0.0	0.174	8.3	LOS A	0.7	4.7	0.44	0.70	0.44	53.4
West: Longfields												
10	L2	21	0.0	0.285	9.4	LOS A	1.9	13.0	0.31	0.43	0.31	55.9
11	T1	819	0.0	0.285	4.2	LOS A	1.9	13.3	0.30	0.41	0.30	56.0
12	R2	1	0.0	0.285	4.2	LOS A	1.9	13.3	0.29	0.40	0.29	54.4
Approach		841	0.0	0.285	4.3	LOS A	1.9	13.3	0.30	0.41	0.30	56.0
All Vehicles		1474	0.0	0.285	4.7	LOS A	1.9	13.3	0.26	0.43	0.26	55.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: \\XCCAN57FS01\Data\ISO\476616\1000\DATA\Sidra\Golflinks & Longfields.sip8

MOVEMENT SUMMARY

 **Site: 101 [Golflinks BG2026 PM]**

Golflinks Background 2026 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	4	0.0	0.010	10.8	LOS B	0.0	0.2	0.46	0.62	0.46	54.1
2	T1	1	0.0	0.010	5.6	LOS A	0.0	0.2	0.46	0.62	0.46	53.9
3	R2	3	0.0	0.010	5.5	LOS A	0.0	0.2	0.46	0.62	0.46	52.6
Approach		8	0.0	0.010	8.2	LOS A	0.0	0.2	0.46	0.62	0.46	53.5
East: Longfields												
4	L2	13	0.0	0.318	9.2	LOS A	2.0	14.0	0.23	0.39	0.23	56.4
5	T1	905	0.0	0.318	4.0	LOS A	2.0	14.1	0.22	0.39	0.22	56.5
6	R2	68	0.0	0.318	4.1	LOS A	2.0	14.1	0.21	0.39	0.21	54.8
Approach		986	0.0	0.318	4.1	LOS A	2.0	14.1	0.22	0.39	0.22	56.4
North: Golflinks												
7	L2	19	0.0	0.069	11.6	LOS B	0.3	1.8	0.54	0.74	0.54	54.2
8	T1	1	0.0	0.069	6.4	LOS A	0.3	1.8	0.54	0.74	0.54	54.0
9	R2	34	0.0	0.069	6.3	LOS A	0.3	1.8	0.54	0.74	0.54	52.7
Approach		54	0.0	0.069	8.2	LOS A	0.3	1.8	0.54	0.74	0.54	53.3
West: Longfields												
10	L2	56	0.0	0.200	9.1	LOS A	1.2	8.3	0.15	0.43	0.15	56.2
11	T1	576	0.0	0.200	3.9	LOS A	1.2	8.4	0.14	0.39	0.14	56.6
12	R2	4	0.0	0.200	4.0	LOS A	1.2	8.4	0.14	0.37	0.14	55.1
Approach		636	0.0	0.200	4.3	LOS A	1.2	8.4	0.14	0.40	0.14	56.6
All Vehicles		1684	0.0	0.318	4.3	LOS A	2.0	14.1	0.20	0.40	0.20	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: \\XCCAN57FS01\Data\ISO\476616\1000\DATA\Sidra\Golflinks & Longfields.sip8

MOVEMENT SUMMARY

 **Site: 101 [Kilspindie BG2026 AM]**

Kilspindie Background 2026 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	1	0.0	0.004	11.6	LOS B	0.0	0.1	0.56	0.62	0.56	54.1
2	T1	1	0.0	0.004	6.4	LOS A	0.0	0.1	0.56	0.62	0.56	53.8
3	R2	1	0.0	0.004	6.3	LOS A	0.0	0.1	0.56	0.62	0.56	52.6
Approach		3	0.0	0.004	8.1	LOS A	0.0	0.1	0.56	0.62	0.56	53.5
East: Longfields												
4	L2	1	0.0	0.131	9.0	LOS A	0.7	4.9	0.10	0.36	0.10	57.2
5	T1	402	0.0	0.131	3.8	LOS A	0.7	5.0	0.10	0.37	0.10	57.2
6	R2	21	0.0	0.131	3.9	LOS A	0.7	5.0	0.09	0.37	0.09	55.4
Approach		424	0.0	0.131	3.8	LOS A	0.7	5.0	0.10	0.37	0.10	57.1
North: Kilspindie												
7	L2	66	0.0	0.125	10.4	LOS B	0.5	3.3	0.41	0.67	0.41	54.2
8	T1	1	0.0	0.125	5.2	LOS A	0.5	3.3	0.41	0.67	0.41	54.0
9	R2	55	0.0	0.125	5.1	LOS A	0.5	3.3	0.41	0.67	0.41	52.7
Approach		122	0.0	0.125	8.0	LOS A	0.5	3.3	0.41	0.67	0.41	53.5
West: Longfields												
10	L2	17	0.0	0.318	9.3	LOS A	2.2	15.2	0.26	0.40	0.26	56.2
11	T1	956	0.0	0.318	4.1	LOS A	2.2	15.4	0.25	0.39	0.25	56.3
12	R2	1	0.0	0.318	4.1	LOS A	2.2	15.4	0.25	0.38	0.25	54.6
Approach		974	0.0	0.318	4.1	LOS A	2.2	15.4	0.25	0.39	0.25	56.3
All Vehicles		1523	0.0	0.318	4.4	LOS A	2.2	15.4	0.22	0.41	0.22	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie BG2026 PM]**

Kilspindie Background 2026 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	1	0.0	0.004	10.8	LOS B	0.0	0.1	0.46	0.57	0.46	54.6
2	T1	1	0.0	0.004	5.5	LOS A	0.0	0.1	0.46	0.57	0.46	54.4
3	R2	1	0.0	0.004	5.4	LOS A	0.0	0.1	0.46	0.57	0.46	53.1
Approach		3	0.0	0.004	7.2	LOS A	0.0	0.1	0.46	0.57	0.46	54.0
East: Longfields												
4	L2	1	0.0	0.338	9.2	LOS A	2.2	15.5	0.23	0.38	0.23	56.5
5	T1	986	0.0	0.338	4.0	LOS A	2.2	15.6	0.22	0.39	0.22	56.5
6	R2	68	0.0	0.338	4.1	LOS A	2.2	15.6	0.21	0.39	0.21	54.8
Approach		1056	0.0	0.338	4.0	LOS A	2.2	15.6	0.22	0.39	0.22	56.4
North: Kilspindie												
7	L2	39	0.0	0.096	11.8	LOS B	0.4	2.5	0.57	0.79	0.57	53.3
8	T1	1	0.0	0.096	6.6	LOS A	0.4	2.5	0.57	0.79	0.57	53.1
9	R2	33	0.0	0.096	6.5	LOS A	0.4	2.5	0.57	0.79	0.57	51.9
Approach		73	0.0	0.096	9.4	LOS A	0.4	2.5	0.57	0.79	0.57	52.7
West: Longfields												
10	L2	56	0.0	0.194	9.1	LOS A	1.2	8.5	0.18	0.43	0.18	56.0
11	T1	552	0.0	0.194	3.9	LOS A	1.2	8.7	0.18	0.39	0.18	56.4
12	R2	1	0.0	0.194	4.0	LOS A	1.2	8.7	0.17	0.37	0.17	55.0
Approach		608	0.0	0.194	4.4	LOS A	1.2	8.7	0.18	0.40	0.18	56.4
All Vehicles		1740	0.0	0.338	4.4	LOS A	2.2	15.6	0.22	0.41	0.22	56.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Background 2026 AM]**

Prince of Wales Background 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	127	0.0	0.726	20.2	LOS C	6.5	45.2	0.91	1.12	1.41	49.3
2	T1	862	0.0	0.726	13.6	LOS B	7.0	49.3	0.92	1.12	1.40	50.3
3	R2	14	0.0	0.726	13.1	LOS B	7.0	49.3	0.92	1.12	1.39	49.6
Approach		1003	0.0	0.726	14.4	LOS B	7.0	49.3	0.92	1.12	1.40	50.1
East: Rideau Valley												
4	L2	6	0.0	0.155	15.8	LOS B	0.9	6.1	0.85	0.91	0.85	53.2
5	T1	191	0.0	0.155	9.3	LOS A	1.1	7.8	0.90	0.87	0.90	53.2
6	R2	460	0.0	0.239	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.9
Approach		657	0.0	0.239	5.2	LOS A	1.1	7.8	0.27	0.55	0.27	55.7
North: Prince of Wales												
7	L2	118	0.0	0.160	10.1	LOS B	0.7	5.2	0.41	0.60	0.41	54.5
8	T1	325	0.0	0.160	4.2	LOS A	0.8	5.4	0.39	0.46	0.39	55.8
9	R2	116	0.0	0.060	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		559	0.0	0.160	5.3	LOS A	0.8	5.4	0.31	0.48	0.31	55.7
West: Longfields												
10	L2	732	0.0	0.602	11.5	LOS B	4.3	30.4	0.63	0.82	0.70	52.1
11	T1	216	0.0	0.359	5.5	LOS A	1.7	11.9	0.54	0.59	0.54	55.7
12	R2	114	0.0	0.359	5.6	LOS A	1.7	11.9	0.54	0.59	0.54	54.0
Approach		1061	0.0	0.602	9.7	LOS A	4.3	30.4	0.60	0.75	0.65	52.9
All Vehicles		3280	0.0	0.726	9.5	LOS A	7.0	49.3	0.58	0.78	0.75	53.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Background 2026 PM]**

Prince of Wales Background 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	114	0.0	0.354	13.2	LOS B	1.8	12.9	0.72	0.84	0.74	53.2
2	T1	434	0.0	0.354	7.1	LOS A	1.9	13.5	0.72	0.72	0.73	54.0
3	R2	1	0.0	0.354	6.9	LOS A	1.9	13.5	0.72	0.67	0.72	52.9
Approach		548	0.0	0.354	8.3	LOS A	1.9	13.5	0.72	0.75	0.73	53.8
East: Rideau Valley												
4	L2	15	0.0	0.147	11.1	LOS B	0.7	4.7	0.58	0.57	0.58	55.4
5	T1	322	0.0	0.147	5.0	LOS A	0.7	5.2	0.57	0.51	0.57	55.2
6	R2	276	0.0	0.143	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		613	0.0	0.147	4.4	LOS A	0.7	5.2	0.31	0.47	0.31	56.0
North: Prince of Wales												
7	L2	467	0.0	0.512	11.1	LOS B	3.1	22.0	0.59	0.75	0.62	53.1
8	T1	885	0.0	0.512	4.9	LOS A	3.1	22.0	0.56	0.51	0.57	55.0
9	R2	655	0.0	0.340	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.8
Approach		2007	0.0	0.512	5.8	LOS A	3.1	22.0	0.38	0.54	0.39	55.1
West: Longfields												
10	L2	221	0.0	0.446	14.9	LOS B	2.5	17.2	0.80	0.97	0.94	50.9
11	T1	252	0.0	0.446	8.0	LOS A	2.7	19.0	0.81	0.87	0.92	53.7
12	R2	140	0.0	0.446	7.8	LOS A	2.7	19.0	0.81	0.85	0.92	52.7
Approach		613	0.0	0.446	10.4	LOS B	2.7	19.0	0.80	0.90	0.93	52.4
All Vehicles		3781	0.0	0.512	6.7	LOS A	3.1	22.0	0.49	0.61	0.52	54.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Appendix J

Future Projected Traffic SIDRA Analysis

MOVEMENT SUMMARY

 **Site: 101 [Golflinks Proj2021 AM]**

Golflinks Projected 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	7	0.0	0.020	11.2	LOS B	0.1	0.5	0.52	0.68	0.52	54.0
2	T1	1	0.0	0.020	6.0	LOS A	0.1	0.5	0.52	0.68	0.52	53.8
3	R2	7	0.0	0.020	5.9	LOS A	0.1	0.5	0.52	0.68	0.52	52.5
Approach		16	0.0	0.020	8.4	LOS A	0.1	0.5	0.52	0.68	0.52	53.3
East: Longfields												
4	L2	3	0.0	0.135	9.0	LOS A	0.7	5.1	0.13	0.37	0.13	57.0
5	T1	414	0.0	0.135	3.8	LOS A	0.7	5.1	0.12	0.37	0.12	57.0
6	R2	13	0.0	0.135	3.9	LOS A	0.7	5.1	0.12	0.37	0.12	55.2
Approach		429	0.0	0.135	3.9	LOS A	0.7	5.1	0.12	0.37	0.12	56.9
North: Golflinks												
7	L2	94	0.0	0.173	10.5	LOS B	0.7	4.7	0.43	0.69	0.43	54.0
8	T1	1	0.0	0.173	5.3	LOS A	0.7	4.7	0.43	0.69	0.43	53.8
9	R2	72	0.0	0.173	5.2	LOS A	0.7	4.7	0.43	0.69	0.43	52.6
Approach		166	0.0	0.173	8.2	LOS A	0.7	4.7	0.43	0.69	0.43	53.4
West: Longfields												
10	L2	21	0.0	0.244	9.4	LOS A	1.5	10.7	0.30	0.43	0.30	56.0
11	T1	696	0.0	0.244	4.2	LOS A	1.6	10.9	0.29	0.41	0.29	56.1
12	R2	1	0.0	0.244	4.2	LOS A	1.6	10.9	0.28	0.40	0.28	54.4
Approach		718	0.0	0.244	4.3	LOS A	1.6	10.9	0.29	0.41	0.29	56.1
All Vehicles		1329	0.0	0.244	4.7	LOS A	1.6	10.9	0.26	0.44	0.26	56.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Golflinks Proj2021 PM]**

Golflinks Projected 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	4	0.0	0.009	10.7	LOS B	0.0	0.2	0.44	0.62	0.44	54.2
2	T1	1	0.0	0.009	5.5	LOS A	0.0	0.2	0.44	0.62	0.44	53.9
3	R2	3	0.0	0.009	5.4	LOS A	0.0	0.2	0.44	0.62	0.44	52.7
Approach		8	0.0	0.009	8.1	LOS A	0.0	0.2	0.44	0.62	0.44	53.6
East: Longfields												
4	L2	3	0.0	0.274	9.2	LOS A	1.6	11.4	0.22	0.39	0.22	56.6
5	T1	778	0.0	0.274	4.0	LOS A	1.6	11.5	0.21	0.39	0.21	56.6
6	R2	68	0.0	0.274	4.1	LOS A	1.6	11.5	0.20	0.39	0.20	54.9
Approach		849	0.0	0.274	4.0	LOS A	1.6	11.5	0.21	0.39	0.21	56.4
North: Golflinks												
7	L2	19	0.0	0.065	11.3	LOS B	0.2	1.7	0.51	0.71	0.51	54.4
8	T1	1	0.0	0.065	6.1	LOS A	0.2	1.7	0.51	0.71	0.51	54.2
9	R2	34	0.0	0.065	6.0	LOS A	0.2	1.7	0.51	0.71	0.51	53.0
Approach		54	0.0	0.065	7.8	LOS A	0.2	1.7	0.51	0.71	0.51	53.5
West: Longfields												
10	L2	56	0.0	0.183	9.0	LOS A	1.1	7.8	0.13	0.43	0.13	56.3
11	T1	531	0.0	0.183	3.8	LOS A	1.1	7.9	0.12	0.39	0.12	56.7
12	R2	4	0.0	0.183	3.9	LOS A	1.1	7.9	0.12	0.36	0.12	55.3
Approach		591	0.0	0.183	4.3	LOS A	1.1	7.9	0.12	0.40	0.12	56.7
All Vehicles		1502	0.0	0.274	4.3	LOS A	1.6	11.5	0.19	0.40	0.19	56.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie Proj2021 AM]**

Kilspindie Projected 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	46	0.0	0.121	11.6	LOS B	0.5	3.2	0.56	0.78	0.56	53.6
2	T1	1	0.0	0.121	6.4	LOS A	0.5	3.2	0.56	0.78	0.56	53.4
3	R2	47	0.0	0.121	6.3	LOS A	0.5	3.2	0.56	0.78	0.56	52.2
Approach		95	0.0	0.121	8.9	LOS A	0.5	3.2	0.56	0.78	0.56	52.9
East: Longfields												
4	L2	19	0.0	0.123	9.2	LOS A	0.7	4.8	0.21	0.41	0.21	56.2
5	T1	331	0.0	0.123	4.0	LOS A	0.7	4.9	0.20	0.40	0.20	56.4
6	R2	21	0.0	0.123	4.1	LOS A	0.7	4.9	0.20	0.38	0.20	54.9
Approach		371	0.0	0.123	4.2	LOS A	0.7	4.9	0.20	0.40	0.20	56.3
North: Kilspindie												
7	L2	66	0.0	0.126	10.4	LOS B	0.5	3.4	0.42	0.66	0.42	54.2
8	T1	1	0.0	0.126	5.2	LOS A	0.5	3.4	0.42	0.66	0.42	54.0
9	R2	55	0.0	0.126	5.1	LOS A	0.5	3.4	0.42	0.66	0.42	52.7
Approach		122	0.0	0.126	8.0	LOS A	0.5	3.4	0.42	0.66	0.42	53.5
West: Longfields												
10	L2	17	0.0	0.275	9.3	LOS A	1.7	12.2	0.28	0.41	0.28	56.1
11	T1	788	0.0	0.275	4.1	LOS A	1.8	12.3	0.27	0.40	0.27	56.2
12	R2	19	0.0	0.275	4.2	LOS A	1.8	12.3	0.26	0.40	0.26	54.5
Approach		824	0.0	0.275	4.2	LOS A	1.8	12.3	0.27	0.40	0.27	56.1
All Vehicles		1412	0.0	0.275	4.9	LOS A	1.8	12.3	0.28	0.45	0.28	55.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie Proj2021 PM]**

Kilspindie Projected 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	28	0.0	0.064	10.7	LOS B	0.2	1.7	0.46	0.67	0.46	54.2
2	T1	1	0.0	0.064	5.5	LOS A	0.2	1.7	0.46	0.67	0.46	54.0
3	R2	28	0.0	0.064	5.4	LOS A	0.2	1.7	0.46	0.67	0.46	52.8
Approach		58	0.0	0.064	8.0	LOS A	0.2	1.7	0.46	0.67	0.46	53.5
East: Longfields												
4	L2	47	0.0	0.308	9.4	LOS A	1.9	13.5	0.27	0.43	0.27	55.9
5	T1	813	0.0	0.308	4.1	LOS A	1.9	13.6	0.26	0.42	0.26	56.1
6	R2	68	0.0	0.308	4.2	LOS A	1.9	13.6	0.25	0.40	0.25	54.6
Approach		928	0.0	0.308	4.4	LOS A	1.9	13.6	0.26	0.42	0.26	56.0
North: Kilspindie												
7	L2	39	0.0	0.094	11.6	LOS B	0.4	2.5	0.55	0.77	0.55	53.5
8	T1	1	0.0	0.094	6.4	LOS A	0.4	2.5	0.55	0.77	0.55	53.3
9	R2	33	0.0	0.094	6.3	LOS A	0.4	2.5	0.55	0.77	0.55	52.1
Approach		73	0.0	0.094	9.1	LOS A	0.4	2.5	0.55	0.77	0.55	52.8
West: Longfields												
10	L2	56	0.0	0.187	9.3	LOS A	1.1	7.4	0.25	0.46	0.25	55.6
11	T1	455	0.0	0.187	4.1	LOS A	1.1	7.5	0.24	0.43	0.24	56.1
12	R2	46	0.0	0.187	4.2	LOS A	1.1	7.5	0.24	0.40	0.24	54.7
Approach		557	0.0	0.187	4.6	LOS A	1.1	7.5	0.24	0.43	0.24	55.9
All Vehicles		1616	0.0	0.308	4.8	LOS A	1.9	13.6	0.28	0.45	0.28	55.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Projected 2021 AM]**

Prince of Wales Background 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	109	0.0	0.533	15.2	LOS B	3.6	25.2	0.79	0.96	0.98	52.8
2	T1	708	0.0	0.533	8.9	LOS A	3.8	26.6	0.79	0.93	0.97	53.5
3	R2	12	0.0	0.533	8.7	LOS A	3.8	26.6	0.79	0.91	0.96	52.5
Approach		829	0.0	0.533	9.7	LOS A	3.8	26.6	0.79	0.93	0.97	53.4
East: Rideau Valley												
4	L2	5	0.0	0.103	13.9	LOS B	0.5	3.8	0.77	0.81	0.77	54.3
5	T1	157	0.0	0.103	7.5	LOS A	0.7	4.6	0.80	0.74	0.80	54.0
6	R2	378	0.0	0.196	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.9
Approach		540	0.0	0.196	4.6	LOS A	0.7	4.6	0.24	0.51	0.24	56.0
North: Prince of Wales												
7	L2	97	0.0	0.128	9.9	LOS A	0.6	4.0	0.36	0.58	0.36	54.7
8	T1	267	0.0	0.128	4.1	LOS A	0.6	4.1	0.34	0.44	0.34	56.0
9	R2	114	0.0	0.059	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		478	0.0	0.128	5.1	LOS A	0.6	4.1	0.27	0.46	0.27	55.9
West: Longfields												
10	L2	652	0.0	0.513	10.6	LOS B	3.0	21.3	0.54	0.74	0.54	52.4
11	T1	178	0.0	0.296	5.2	LOS A	1.4	9.5	0.48	0.55	0.48	56.0
12	R2	104	0.0	0.296	5.3	LOS A	1.4	9.5	0.48	0.55	0.48	54.3
Approach		934	0.0	0.513	9.0	LOS A	3.0	21.3	0.52	0.68	0.52	53.2
All Vehicles		2781	0.0	0.533	7.7	LOS A	3.8	26.6	0.50	0.69	0.56	54.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Projected 2021 PM]**

Prince of Wales Background 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	104	0.0	0.269	12.3	LOS B	1.3	9.1	0.64	0.77	0.64	53.7
2	T1	356	0.0	0.269	6.3	LOS A	1.4	9.5	0.64	0.65	0.64	54.5
3	R2	1	0.0	0.269	6.2	LOS A	1.4	9.5	0.64	0.61	0.64	53.3
Approach		461	0.0	0.269	7.6	LOS A	1.4	9.5	0.64	0.68	0.64	54.3
East: Rideau Valley												
4	L2	12	0.0	0.114	10.8	LOS B	0.5	3.5	0.53	0.54	0.53	55.6
5	T1	265	0.0	0.114	4.9	LOS A	0.5	3.8	0.51	0.49	0.51	55.5
6	R2	226	0.0	0.118	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		503	0.0	0.118	4.3	LOS A	0.5	3.8	0.28	0.46	0.28	56.1
North: Prince of Wales												
7	L2	384	0.0	0.406	10.5	LOS B	2.2	15.1	0.50	0.69	0.50	53.5
8	T1	727	0.0	0.406	4.5	LOS A	2.2	15.7	0.48	0.48	0.48	55.5
9	R2	587	0.0	0.305	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.8
Approach		1699	0.0	0.406	5.5	LOS A	2.2	15.7	0.32	0.50	0.32	55.4
West: Longfields												
10	L2	212	0.0	0.335	12.9	LOS B	1.6	11.2	0.71	0.89	0.73	52.0
11	T1	207	0.0	0.335	6.3	LOS A	1.7	11.9	0.70	0.70	0.71	54.6
12	R2	122	0.0	0.335	6.3	LOS A	1.7	11.9	0.70	0.67	0.70	53.2
Approach		541	0.0	0.335	8.9	LOS A	1.7	11.9	0.71	0.77	0.72	53.2
All Vehicles		3204	0.0	0.406	6.2	LOS A	2.2	15.7	0.42	0.57	0.43	55.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Golflinks Proj2026 AM]**

Golflinks Projected 2026 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	7	0.0	0.021	11.6	LOS B	0.1	0.5	0.55	0.70	0.55	53.7
2	T1	1	0.0	0.021	6.3	LOS A	0.1	0.5	0.55	0.70	0.55	53.5
3	R2	7	0.0	0.021	6.2	LOS A	0.1	0.5	0.55	0.70	0.55	52.3
Approach		16	0.0	0.021	8.7	LOS A	0.1	0.5	0.55	0.70	0.55	53.1
East: Longfields												
4	L2	3	0.0	0.156	9.0	LOS A	0.9	6.0	0.13	0.37	0.13	57.0
5	T1	481	0.0	0.156	3.8	LOS A	0.9	6.0	0.13	0.37	0.13	57.0
6	R2	13	0.0	0.156	3.9	LOS A	0.9	6.0	0.12	0.37	0.12	55.2
Approach		497	0.0	0.156	3.9	LOS A	0.9	6.0	0.13	0.37	0.13	56.9
North: Golflinks												
7	L2	94	0.0	0.178	10.8	LOS B	0.7	4.8	0.46	0.71	0.46	53.9
8	T1	1	0.0	0.178	5.5	LOS A	0.7	4.8	0.46	0.71	0.46	53.7
9	R2	72	0.0	0.178	5.4	LOS A	0.7	4.8	0.46	0.71	0.46	52.5
Approach		166	0.0	0.178	8.4	LOS A	0.7	4.8	0.46	0.71	0.46	53.3
West: Longfields												
10	L2	21	0.0	0.291	9.4	LOS A	1.9	13.5	0.31	0.43	0.31	55.9
11	T1	838	0.0	0.291	4.2	LOS A	2.0	13.7	0.30	0.41	0.30	56.0
12	R2	1	0.0	0.291	4.2	LOS A	2.0	13.7	0.29	0.40	0.29	54.4
Approach		860	0.0	0.291	4.3	LOS A	2.0	13.7	0.30	0.41	0.30	56.0
All Vehicles		1539	0.0	0.291	4.7	LOS A	2.0	13.7	0.26	0.43	0.26	56.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Golflinks Proj2026 PM]**

Golflinks Projected 2026 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Golflinks												
1	L2	4	0.0	0.010	10.9	LOS B	0.0	0.2	0.47	0.63	0.47	54.0
2	T1	1	0.0	0.010	5.7	LOS A	0.0	0.2	0.47	0.63	0.47	53.8
3	R2	3	0.0	0.010	5.6	LOS A	0.0	0.2	0.47	0.63	0.47	52.6
Approach		8	0.0	0.010	8.3	LOS A	0.0	0.2	0.47	0.63	0.47	53.4
East: Longfields												
4	L2	13	0.0	0.327	9.2	LOS A	2.1	14.6	0.23	0.39	0.23	56.4
5	T1	934	0.0	0.327	4.0	LOS A	2.1	14.6	0.22	0.39	0.22	56.5
6	R2	68	0.0	0.327	4.1	LOS A	2.1	14.6	0.21	0.39	0.21	54.8
Approach		1015	0.0	0.327	4.1	LOS A	2.1	14.6	0.22	0.39	0.22	56.4
North: Golflinks												
7	L2	19	0.0	0.070	11.7	LOS B	0.3	1.8	0.55	0.75	0.55	54.1
8	T1	1	0.0	0.070	6.5	LOS A	0.3	1.8	0.55	0.75	0.55	53.9
9	R2	34	0.0	0.070	6.4	LOS A	0.3	1.8	0.55	0.75	0.55	52.7
Approach		54	0.0	0.070	8.2	LOS A	0.3	1.8	0.55	0.75	0.55	53.2
West: Longfields												
10	L2	56	0.0	0.214	9.1	LOS A	1.3	9.0	0.15	0.43	0.15	56.2
11	T1	622	0.0	0.214	3.9	LOS A	1.3	9.1	0.15	0.39	0.15	56.6
12	R2	4	0.0	0.214	4.0	LOS A	1.3	9.1	0.14	0.37	0.14	55.1
Approach		682	0.0	0.214	4.3	LOS A	1.3	9.1	0.15	0.39	0.15	56.6
All Vehicles		1759	0.0	0.327	4.3	LOS A	2.1	14.6	0.20	0.40	0.20	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie Proj2026 AM]**

Kilspindie Projected 2026 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	46	0.0	0.130	12.1	LOS B	0.5	3.5	0.59	0.82	0.59	53.3
2	T1	1	0.0	0.130	6.8	LOS A	0.5	3.5	0.59	0.82	0.59	53.1
3	R2	47	0.0	0.130	6.7	LOS A	0.5	3.5	0.59	0.82	0.59	51.9
Approach		95	0.0	0.130	9.3	LOS A	0.5	3.5	0.59	0.82	0.59	52.6
East: Longfields												
4	L2	20	0.0	0.146	9.2	LOS A	0.8	5.9	0.22	0.41	0.22	56.2
5	T1	402	0.0	0.146	4.0	LOS A	0.9	6.0	0.21	0.39	0.21	56.4
6	R2	19	0.0	0.146	4.1	LOS A	0.9	6.0	0.20	0.38	0.20	54.8
Approach		441	0.0	0.146	4.2	LOS A	0.9	6.0	0.21	0.39	0.21	56.3
North: Kilspindie												
7	L2	66	0.0	0.130	10.6	LOS B	0.5	3.5	0.45	0.69	0.45	54.1
8	T1	1	0.0	0.130	5.4	LOS A	0.5	3.5	0.45	0.69	0.45	53.9
9	R2	55	0.0	0.130	5.3	LOS A	0.5	3.5	0.45	0.69	0.45	52.6
Approach		122	0.0	0.130	8.2	LOS A	0.5	3.5	0.45	0.69	0.45	53.4
West: Longfields												
10	L2	17	0.0	0.331	9.4	LOS A	2.2	15.6	0.30	0.42	0.30	56.0
11	T1	956	0.0	0.331	4.2	LOS A	2.3	15.8	0.29	0.41	0.29	56.1
12	R2	19	0.0	0.331	4.2	LOS A	2.3	15.8	0.28	0.40	0.28	54.5
Approach		992	0.0	0.331	4.2	LOS A	2.3	15.8	0.29	0.41	0.29	56.1
All Vehicles		1649	0.0	0.331	4.8	LOS A	2.3	15.8	0.30	0.45	0.30	55.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Kilspindie Proj2026 PM]**

Kilspindie Projected 2026 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kilspindie												
1	L2	28	0.0	0.067	11.0	LOS B	0.2	1.7	0.49	0.70	0.49	54.1
2	T1	1	0.0	0.067	5.7	LOS A	0.2	1.7	0.49	0.70	0.49	53.9
3	R2	28	0.0	0.067	5.6	LOS A	0.2	1.7	0.49	0.70	0.49	52.6
Approach		58	0.0	0.067	8.3	LOS A	0.2	1.7	0.49	0.70	0.49	53.3
East: Longfields												
4	L2	47	0.0	0.364	9.4	LOS A	2.4	17.0	0.29	0.43	0.29	55.9
5	T1	986	0.0	0.364	4.2	LOS A	2.4	17.1	0.28	0.42	0.28	56.1
6	R2	68	0.0	0.364	4.2	LOS A	2.4	17.1	0.27	0.40	0.27	54.5
Approach		1102	0.0	0.364	4.4	LOS A	2.4	17.1	0.28	0.42	0.28	56.0
North: Kilspindie												
7	L2	39	0.0	0.100	12.0	LOS B	0.4	2.7	0.59	0.81	0.59	53.2
8	T1	1	0.0	0.100	6.8	LOS A	0.4	2.7	0.59	0.81	0.59	52.9
9	R2	33	0.0	0.100	6.7	LOS A	0.4	2.7	0.59	0.81	0.59	51.8
Approach		73	0.0	0.100	9.6	LOS A	0.4	2.7	0.59	0.81	0.59	52.5
West: Longfields												
10	L2	56	0.0	0.219	9.3	LOS A	1.3	9.0	0.26	0.45	0.26	55.7
11	T1	552	0.0	0.219	4.1	LOS A	1.3	9.1	0.25	0.42	0.25	56.1
12	R2	46	0.0	0.219	4.2	LOS A	1.3	9.1	0.25	0.40	0.25	54.6
Approach		654	0.0	0.219	4.6	LOS A	1.3	9.1	0.25	0.42	0.25	55.9
All Vehicles		1886	0.0	0.364	4.8	LOS A	2.4	17.1	0.29	0.44	0.29	55.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Projected 2026 AM]**

Prince of Wales Background 2021 AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	132	0.0	0.757	22.0	LOS C	7.1	50.0	0.93	1.17	1.53	48.2
2	T1	862	0.0	0.757	15.2	LOS B	7.9	55.0	0.94	1.17	1.52	49.2
3	R2	14	0.0	0.757	14.7	LOS B	7.9	55.0	0.94	1.17	1.51	48.6
Approach		1007	0.0	0.757	16.1	LOS B	7.9	55.0	0.94	1.17	1.52	49.0
East: Rideau Valley												
4	L2	6	0.0	0.162	16.3	LOS B	0.9	6.4	0.86	0.92	0.86	52.8
5	T1	191	0.0	0.162	9.8	LOS A	1.2	8.3	0.91	0.89	0.91	53.0
6	R2	460	0.0	0.239	3.3	LOS A	0.0	0.0	0.00	0.41	0.00	56.9
Approach		657	0.0	0.239	5.3	LOS A	1.2	8.3	0.27	0.56	0.27	55.6
North: Prince of Wales												
7	L2	118	0.0	0.161	10.1	LOS B	0.7	5.2	0.41	0.60	0.41	54.5
8	T1	325	0.0	0.161	4.2	LOS A	0.8	5.4	0.39	0.46	0.39	55.8
9	R2	131	0.0	0.068	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		574	0.0	0.161	5.2	LOS A	0.8	5.4	0.31	0.48	0.31	55.8
West: Longfields												
10	L2	769	0.0	0.632	11.8	LOS B	4.9	34.0	0.65	0.84	0.74	52.0
11	T1	216	0.0	0.371	5.6	LOS A	1.8	12.5	0.55	0.60	0.55	55.7
12	R2	123	0.0	0.371	5.7	LOS A	1.8	12.5	0.55	0.60	0.55	53.9
Approach		1108	0.0	0.632	9.9	LOS A	4.9	34.0	0.62	0.76	0.68	52.9
All Vehicles		3346	0.0	0.757	10.1	LOS B	7.9	55.0	0.59	0.80	0.79	52.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 **Site: 101 [Prince of Wales Projected 2026 PM]**

Prince of Wales Background 2021 PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Prince of Wales												
1	L2	123	0.0	0.366	13.5	LOS B	2.0	13.7	0.73	0.86	0.77	53.0
2	T1	434	0.0	0.366	7.2	LOS A	2.0	14.3	0.73	0.75	0.75	53.9
3	R2	1	0.0	0.366	7.1	LOS A	2.0	14.3	0.73	0.70	0.75	52.8
Approach		558	0.0	0.366	8.6	LOS A	2.0	14.3	0.73	0.77	0.76	53.7
East: Rideau Valley												
4	L2	15	0.0	0.150	11.2	LOS B	0.7	4.8	0.59	0.57	0.59	55.3
5	T1	322	0.0	0.150	5.1	LOS A	0.8	5.4	0.58	0.52	0.58	55.2
6	R2	276	0.0	0.143	3.3	LOS A	0.0	0.0	0.00	0.42	0.00	56.9
Approach		613	0.0	0.150	4.5	LOS A	0.8	5.4	0.32	0.47	0.32	55.9
North: Prince of Wales												
7	L2	467	0.0	0.514	11.2	LOS B	3.2	22.3	0.60	0.76	0.63	53.1
8	T1	885	0.0	0.514	4.9	LOS A	3.2	22.3	0.57	0.52	0.58	55.0
9	R2	693	0.0	0.360	3.4	LOS A	0.0	0.0	0.00	0.41	0.00	56.8
Approach		2045	0.0	0.514	5.8	LOS A	3.2	22.3	0.38	0.54	0.39	55.1
West: Longfields												
10	L2	244	0.0	0.468	15.1	LOS B	2.6	18.4	0.81	0.98	0.97	50.5
11	T1	252	0.0	0.468	8.1	LOS A	2.9	20.4	0.81	0.88	0.95	53.8
12	R2	145	0.0	0.468	8.0	LOS A	2.9	20.4	0.82	0.87	0.95	52.6
Approach		641	0.0	0.468	10.7	LOS B	2.9	20.4	0.81	0.92	0.96	52.2
All Vehicles		3857	0.0	0.514	6.8	LOS A	3.2	22.3	0.49	0.62	0.53	54.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

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Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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