4159 Obsidian Street

Transportation Impact Assessment

Step 1 Screening Report

Step 2 Scoping Report

Step 3 Strategy Report

Prepared for:

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PN: 2025-011

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1 Screening

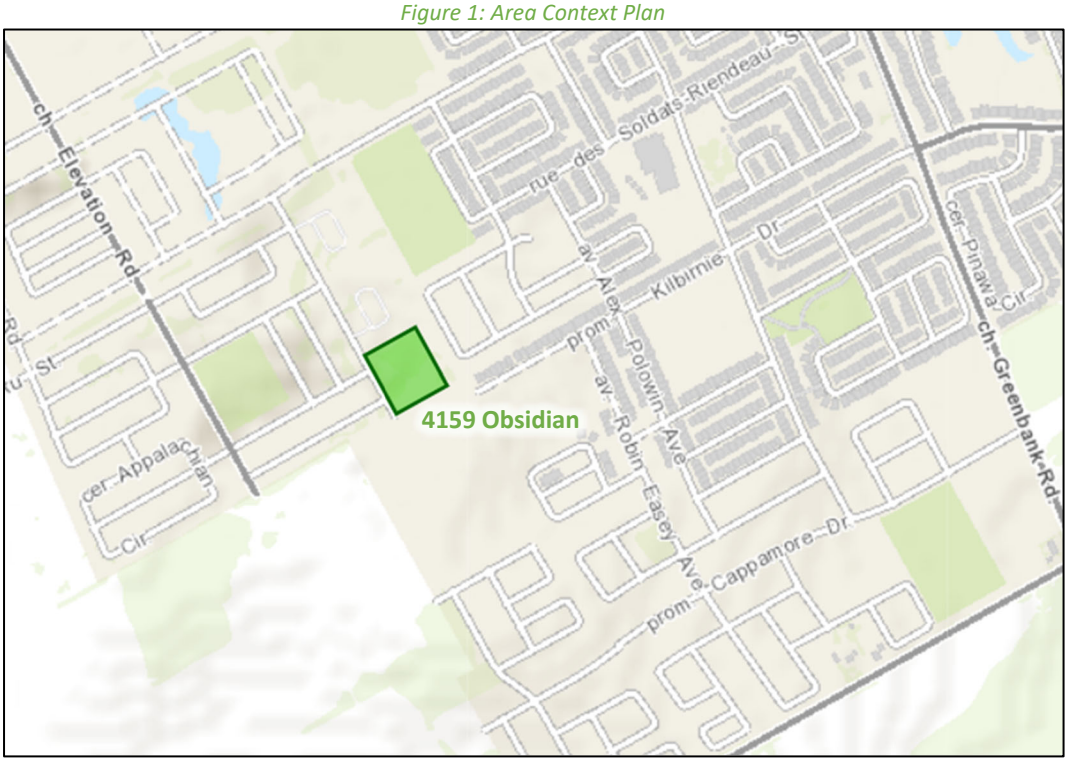
This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, incorporating the 2023 Revision to Transportation Impact Assessment Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for the TIA Study PM. As shown in the Screening Form, a TIA is required, and this study has been prepared to support a site plan application.

2 Existing and Planned Conditions

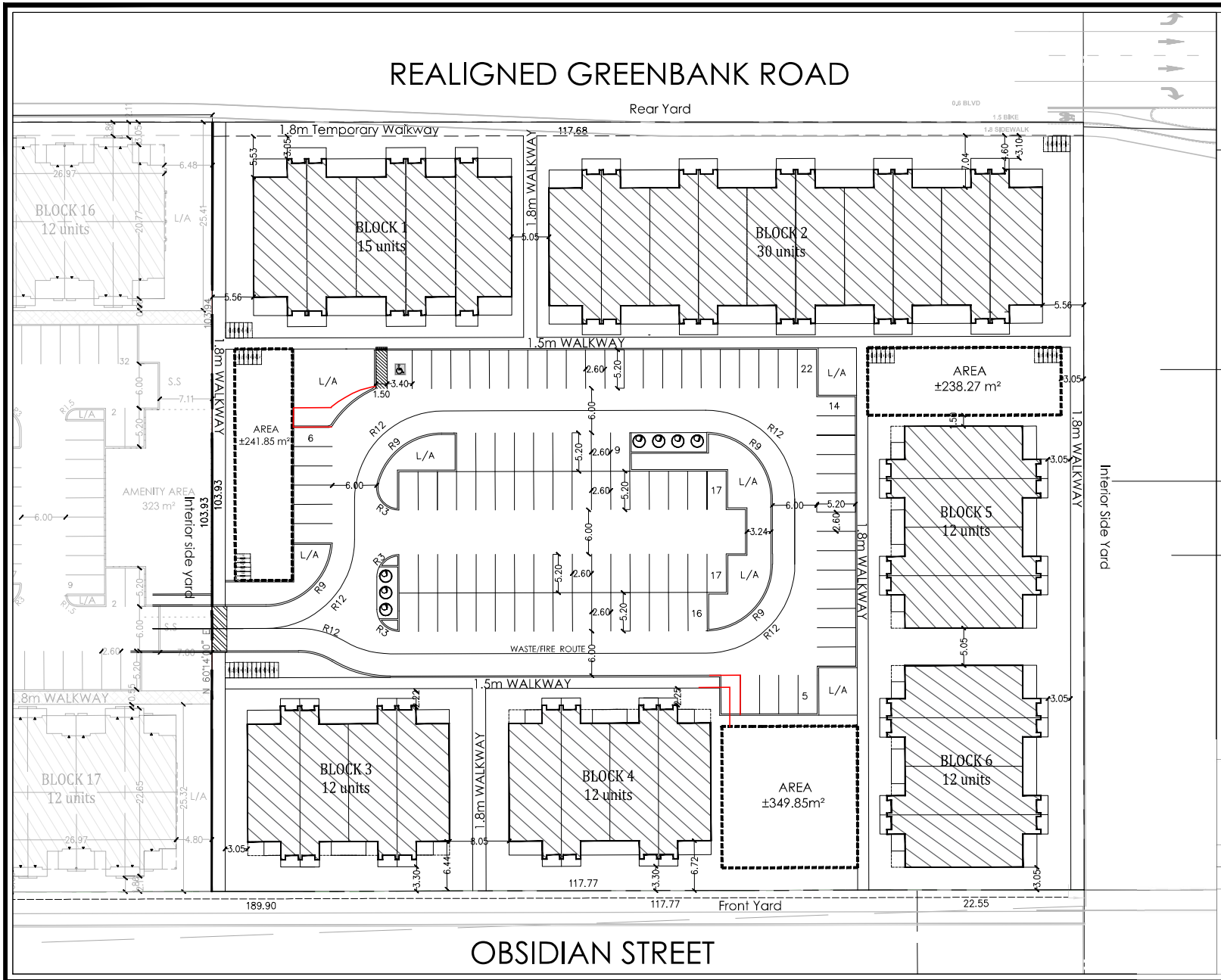
2.1 Proposed Development

The development site is located at 4159 Obsidian Street and it is currently zoned as General Mixed-Use Zone (GM[2800] H(14.5)) and is proposed to be rezoned as residential. The site will be comprised of approximately 93 stacked townhome units, 123 vehicular parking spaces and 48 bicycle parking spaces. Vehicular access is proposed on Obsidian Street through the previous phase to the north (3718 Greenbank Road). The anticipated full build-out horizon is 2028 with construction occurring in a single phase. The development is within the Barrhaven South Urban Expansion Area Community Design Plan. Figure 1 illustrates the study area context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: February 28, 2025



HALF MOON BAY SOUTH
Phase 7
Suburban Stacks Concept

City of Ottawa

ZONE: GM(2800) H(14.5)

DWELLING TYPE	UNIT COUNT
Stacked Towns	93
Unit Total:	93

Site Area: 1.22 ha

Density: 76 UPH

Stacks Parking:
Residential Parking: 93 @ 1.2/unit = 112
Visitor: 93 @ 0.2/unit = 19
Total Required: 131 spaces
Total Provided: 123 spaces (approx 1.1+0.2 per unit)

Communal Amenity Area:

Required: 270m² (50% of total required amenity area)
Provided: TBD

Bike Parking:
Residential: 90 @ 0.5/unit = 45
Total Required: 45 Spots
Total Provided: 48 Spots

mattamyHOMES

Scale: 1:500

March 25, 2025

KORSIAK Urban Planning

S:\Korsiak & Company\MATTAMY\Ottawa\Half Moon Bay SOUTH\Concept\2025-03\HMBS ph 7 - Suburban Stacks - Concept Plan (V2) old stacks - Mar 25 25_as_jh.dwg

2.2 Existing Conditions

2.2.1 Area Road Network

Greenbank Road: Greenbank Road is a City of Ottawa arterial road north of Barnsdale Road, with a two-lane cross-section. North of Kilbirnie Drive, a sidewalk and a bike lane are present on the east side of the road, and a multi-use pathway is present on the west side of the road. South of Kilbirnie Drive, there's a paved shoulder on the west side of the road and a gravel shoulder on the east side, and the road transitions to gravel shoulders on both sides. The posted limit is 60 km/h and the City protected right-of-way is 37.5 metres between Cambrian Road and Barnsdale Road.

Cambrian Road: Cambrian Road is a City of Ottawa arterial road, with a two-lane rural cross-section west of Seeley's Bay Street. A sidewalk is present on the north side of the road for approximately 180 metres west and 260 metres east of Apolune Street. The posted speed limit is 50 km/h, and the City-protected right-of-way is 37.5 metres.

Elevation Road: Elevation Road is a City of Ottawa collector road with a two-lane urban cross-section. Multi-Use Pathways are anticipated to be on both sides of the road. The unposted limit is assumed to be 40 km/h based on the traffic calming design of new neighbourhoods, and the right-of-way is 24.0 metres.

Apolune Street: Apolune Street is a City of Ottawa collector road with a two-lane urban cross-section including sidewalks on both sides. On-street parking is permitted on both sides of the road. The unposted speed limit is assumed to be 40 km/h based on the traffic calming design of new neighbourhoods, and the right-of-way is 24.0 metres.

Dundonald Drive: Dundonald Drive is a City of Ottawa collector road with a two-lane urban cross-section including sidewalks on both sides. On-street parking is permitted on both sides of the road. To the west of the future Realigned Greenbank Road, Dundonald Road is currently under construction. The unposted speed limit is assumed to be 40 km/h based on the traffic calming design of new neighborhoods, and the measured right-of-way is 24.0 metres.

Kilbirnie Drive: Kilbirnie Drive is a City of Ottawa collector road with a two-lane urban cross-section including sidewalks on both sides of the road. On-street parking is permitted on both sides of the road. The unposted speed limit is assumed to be 50 km/h based on the Highway Traffic Act due to the age of the roadway prior to increase traffic calming measure implementation. The right-of-way is 22.0 metres.

Obsidian Street: Obsidian Street is a City of Ottawa local road with a two-lane urban cross-section including sidewalks on the east side of the road. On-street parking is permitted on both sides of the road. The unposted speed limit is assumed to be 30 km/h based on the traffic calming design of new neighbourhoods, and the right-of-way is 18.0 metres.

2.2.2 Existing Intersections

The existing signalized area intersections within one kilometre of the site have been summarized below:

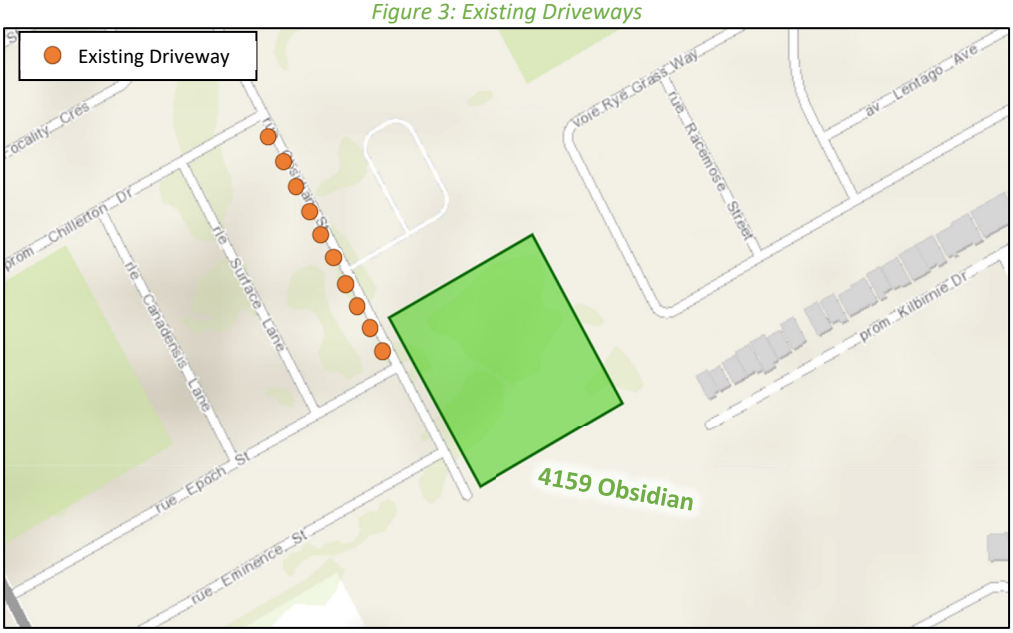
Apolune Street /Elevation Road at Cambrian Road	The intersection of Apolune Street/Elevation Road at Cambrian Road is currently an unsignalized intersection with stop control on the minor approach of Apolune Street/Elevation Road. All approaches consist of an auxiliary left-turn lane and a shared through/right-turn lane. No turn restrictions were noted.
Greenbank Road at Dundonald Drive	The intersection of Greenbank Road at Dundonald Drive is a signalized intersection. The northbound and southbound approaches each consist of an auxiliary left-turn lane, a through lane, and an auxiliary right-turn lane. The eastbound and westbound approaches each

	consist of a shared all-movements lane. No turn restrictions were noted.
Greenbank Road at Kilbirnie Drive	The intersection of Greenbank Road at Kilbirnie Drive is a signalized intersection. The northbound approach consists of an auxiliary left-turn lane, a through lane, a bike lane and an auxiliary right-turn lane, and the southbound approach consists of an auxiliary left-turn, a through lane, an auxiliary right-turn lane and protected two-way cycling crossing. The eastbound and westbound approaches each consist of an auxiliary left-turn lane and a shared through/right-turn lane. No turn restrictions were noted.

2.2.3 Existing Driveways

Driveways to low-rise residential land uses exist on the west side of Obsidian Street within 200 metres north of the proposed site access. Figure 3 illustrates the existing driveways.

Figure 3: Existing Driveways



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 6, 2025

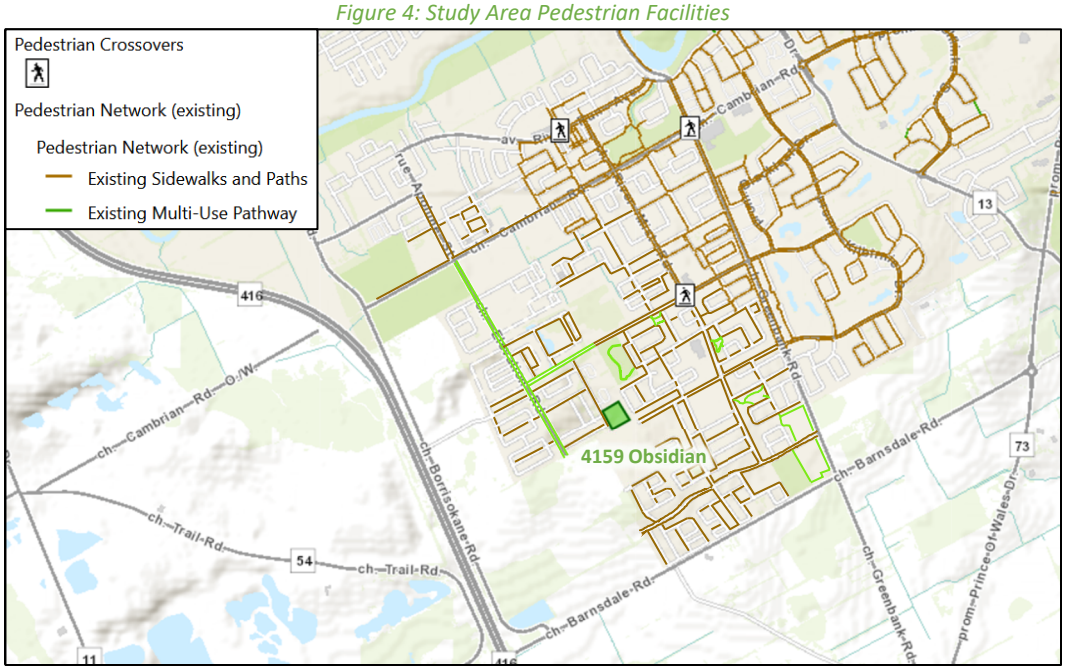
2.2.4 Cycling and Pedestrian Facilities

Figure 4 illustrates the pedestrian facilities in the study area and Figure 5 illustrates the cycling facilities.

Sidewalks are provided along the east side of Obsidian Street and along the east side of Greenbank Road north of Kilbirnie Drive, and along the north of Cambrian Road for approximately 180 metres west and 260 metres east of Apolune Street. Sidewalks are also provided along both sides of Kilbirnie Drive, Apolune Street, and Cambrian Road between Seeley's Bay Street and Greenbank Road.

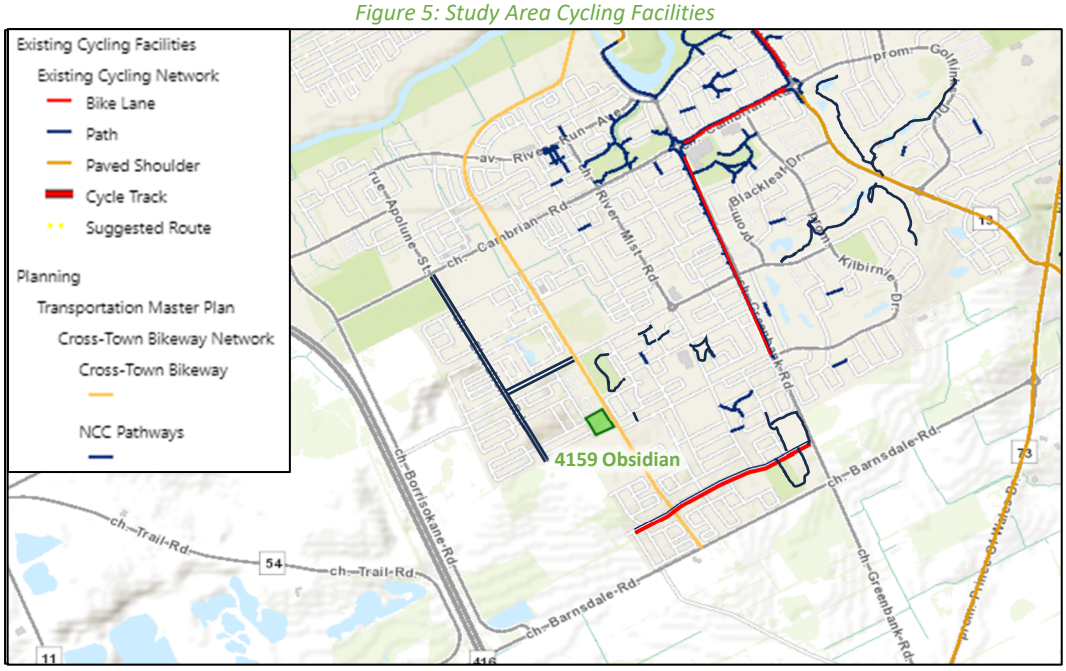
Cycling facilities include a bike lane is present on the east side of Greenbank Road north of Kilbirnie Drive, while a MUP is present on the west side. Multi-Use Pathways are also provided on both sides of Elevation Road. Realigned Greenbank Road is also designated as a Cross-Town Bikeway.

Figure 4: Study Area Pedestrian Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 06, 2025

Figure 5: Study Area Cycling Facilities



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 06, 2025

Pedestrian and cyclist volumes included in study area intersection counts, presented in Section 2.2.7, have been compiled and are illustrated in Figure 6 and Figure 7, respectively. The City of Ottawa notes that the collection data for active mode volumes may be lower than summer conditions, although this cannot be confirmed.

Figure 6: Existing Pedestrian Volumes

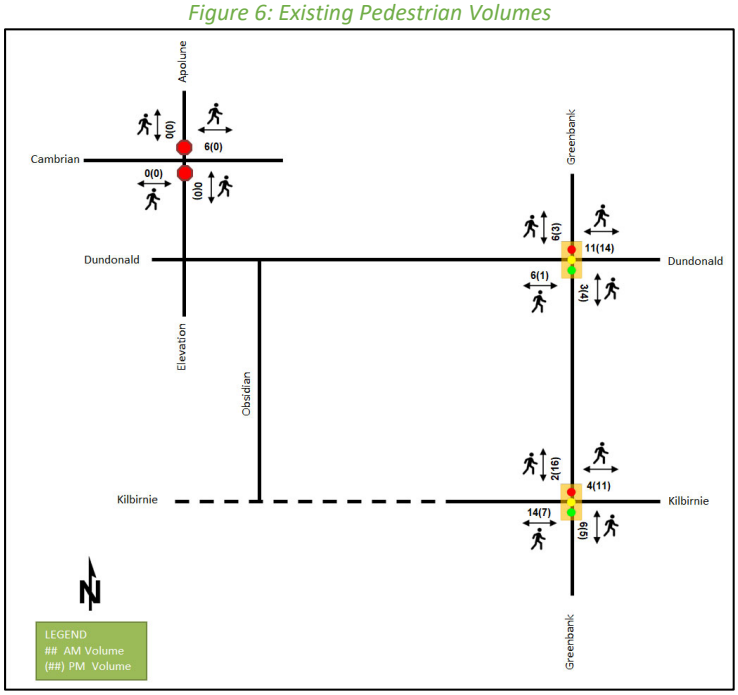
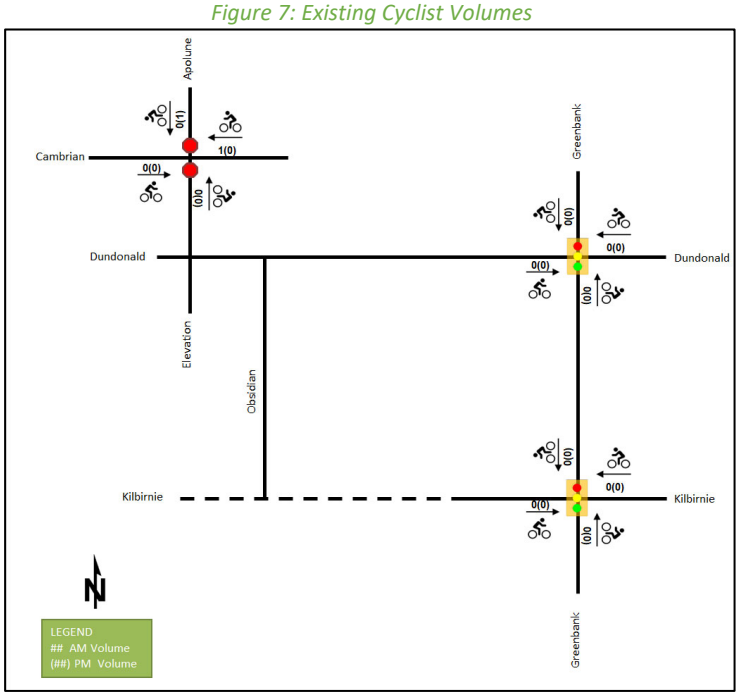


Figure 7: Existing Cyclist Volumes



2.2.5 Existing Transit

Figure 8 illustrates the transit system map in the study area and Figure 9 illustrates nearby transit stops within 400 metres from the site. All transit information is from March 07, 2025 and is included for general information purposes and context to the surrounding area.

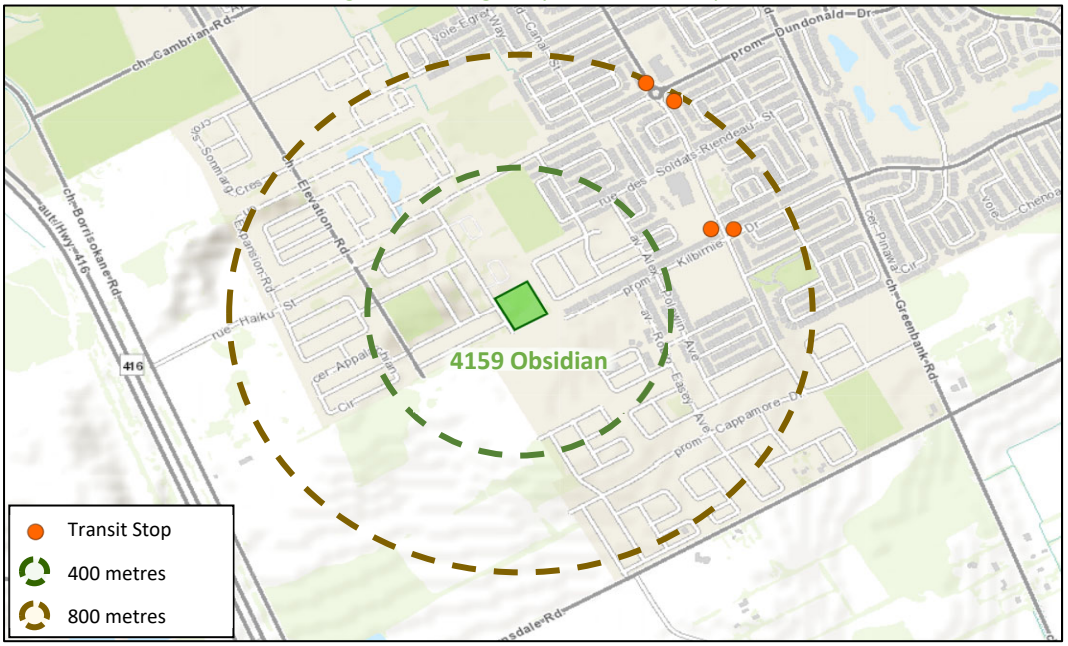
Within the study area, the route #75 travel along Kilbirnie Drive and River Mist Road. It is also noted that routes #671, #675, and #683 are high school routes that travel along Kilbirnie Drive and River Mist Road. The frequency of these routes within proximity of the proposed site based on March 07, 2025 service levels are:

- Route #75 – 10-minute service in the peak period/direction and 15-20-minute service all-day, 30-minute service before 8 AM and after 8 PM
- Route #671 – high school route, only service in the peak hour/direction
- Route #675 – high school route, only service in the peak hour/direction
- Route #683 – high school route, only service in the peak hour/direction

Figure 8: Existing Study Area Transit Service

Source: http://www.octranspo.com/ Accessed: March 07, 2025

Figure 9: Existing Study Area Transit Stops



Source: http://www.octranspo.com/ Accessed: March 07, 2025

2.2.6 Existing Area Traffic Management Measures

The existing area traffic management measures consist of bulb-outs framing parking on Kilbirnie Drive.

2.2.7 Existing Peak Hour Travel Demand

Existing turning movement counts were acquired from the City of Ottawa for the existing study area intersections. Table 1 summarizes the intersection count dates.

Table 1: Intersection Count Date

Intersection	Count Date
Greenbank Road at Dundonald Drive	Wednesday, March 20, 2024
Greenbank Road at Kilbirnie Drive	Wednesday, March 20, 2024
Cambrian Road at Apolune Street/Elevation Road	Wednesday, March 23, 2022

Note: The count at Cambrian Road at Apolune Street/Elevation Road will be updated if future traffic analysis is required.

Figure 10 illustrates the existing traffic counts and Table 2 summarizes the existing intersection operations. The level of service for signalized intersections is based on volume to capacity ratio (v/c) calculations for individual lane movements and HCM 2000 v/c calculations for the overall intersection, and average delay for unsignalized intersections. Detailed turning movement count data is included in Appendix B and the Synchro worksheets are provided in Appendix C.

Figure 10: Existing Traffic Counts

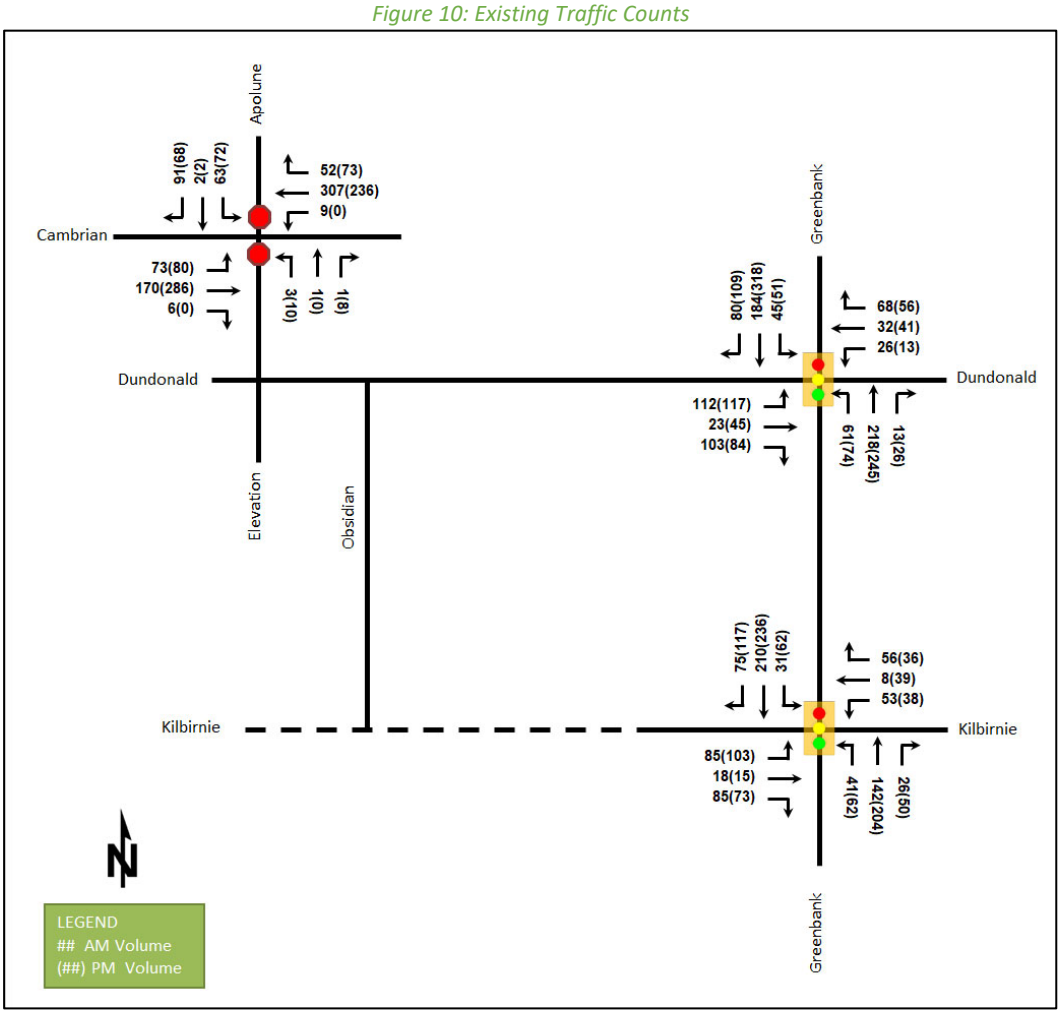


Table 2: Existing Intersection Operations

Intersection	Lane	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s)	Q (95th)	LOS	V/C	Delay (s)	Q (95th)
Cambrian Road at Apolune Street/Elevation Road ***Unsignalized***	EBL	A	0.07	8.3	1.5	A	0.07	8.2	1.5
	EBT/R	-	-	-	-	-	-	-	-
	WBL	A	0.01	7.6	0.0	A	-	0.0	0.0
	WBT/R	-	-	-	-	-	-	-	-
	NBL	C	0.01	20.0	0.0	C	0.05	20.7	0.8
	NBT/R	B	0.01	13.1	0.0	B	0.01	10.0	0.0
	SBL	C	0.23	20.0	6.8	C	0.29	22.8	8.3
	SBT/R	B	0.16	11.5	4.5	B	0.11	10.7	3.0
	Overall	**A**	**-**	**4.0**	**-**	**A**	**-**	**4.0**	**-**
Greenbank Road at Kilbirnie Drive ***Signalized***	EBL	A	0.36	25.7	21.8	A	0.43	27.8	26.7
	EBT/R	A	0.32	10.1	13.1	A	0.26	9.7	12.1
	WBL	A	0.24	23.7	14.9	A	0.17	23.2	12.0
	WBT/R	A	0.20	9.2	9.5	A	0.26	15.4	14.7
	NBL	A	0.22	29.5	15.0	A	0.31	30.5	20.2
	NBT	A	0.16	12.7	29.8	A	0.25	15.7	43.9
	NBR	A	0.04	0.1	0.0	A	0.07	0.2	0.0
	SBL	A	0.18	29.5	12.2	A	0.31	30.5	20.2
	SBT	A	0.26	15.0	43.9	A	0.29	16.1	51.0
	SBR	A	0.10	1.6	3.4	A	0.16	4.4	10.6
	Overall	**A**	**0.28**	**14.8**	**-**	**A**	**0.33**	**16.5**	**-**
Greenbank Road at Dundonald Drive ***Signalized***	EB	B	0.69	28.2	48.1	C	0.73	33.3	56.5
	WB	A	0.33	12.9	19.1	A	0.27	13.4	18.4
	NBL	A	0.33	33.8	20.9	A	0.38	35.5	24.5
	NBT	A	0.33	17.6	46.8	A	0.36	19.1	56.6
	NBR	A	0.02	0.1	0.0	A	0.04	0.1	0.0
	SBL	A	0.26	32.7	16.5	A	0.30	35.1	18.8
	SBT	A	0.28	17.4	39.6	A	0.53	24.0	77.9
	SBR	A	0.13	2.2	4.8	A	0.19	5.5	11.3
	Overall	**A**	**0.50**	**19.8**	**-**	**A**	**0.59**	**22.9**	**-**

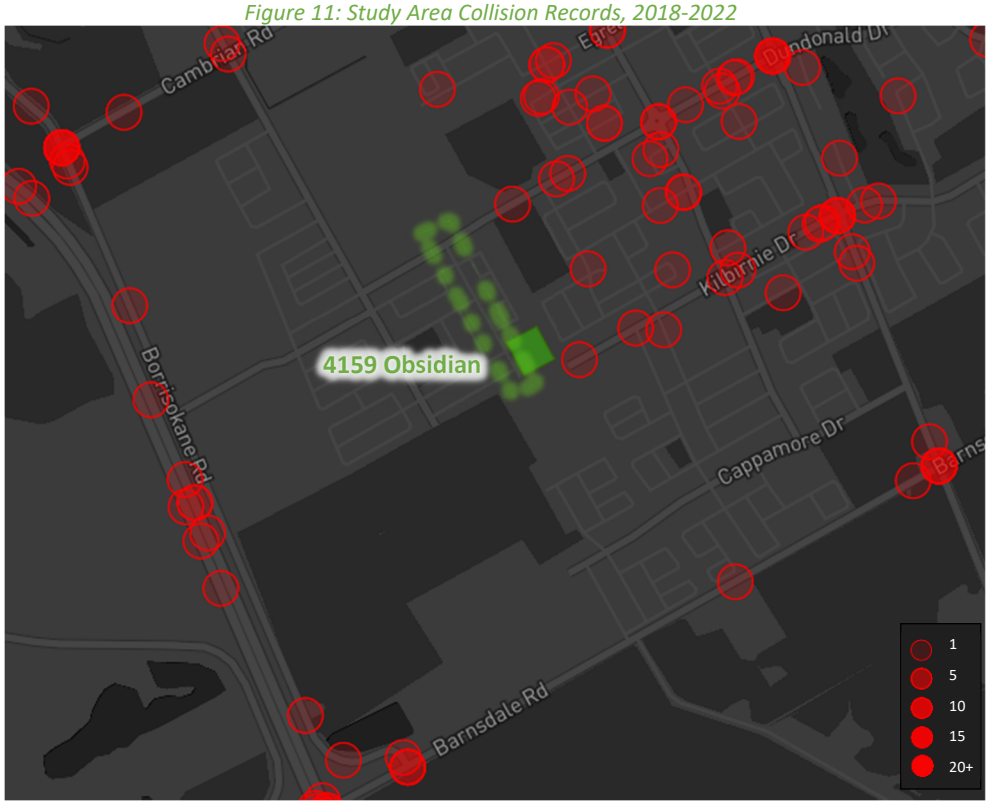
Notes: Saturation flow rate of 1800 veh/h/lane
Queue is measured in metres
Peak Hour Factor = 0.90
Delay = average vehicle delay in seconds
m = metered queue
# = volume for the 95th %ile cycle exceeds capacity

During both the AM and PM peak hours, the study area intersections operate well. No capacity issues are noted.

2.2.8 Collision Analysis

Collision data have been acquired from the City of Ottawa open data website (data.ottawa.ca) for five years prior to the commencement of this TIA for the surrounding study area road network. There are no collisions noted on the adjacent streets to the site during the 2018-2022 time period. Figure 11 illustrates the area collisions.

Figure 11: Study Area Collision Records, 2018-2022



2.3 Planned Conditions

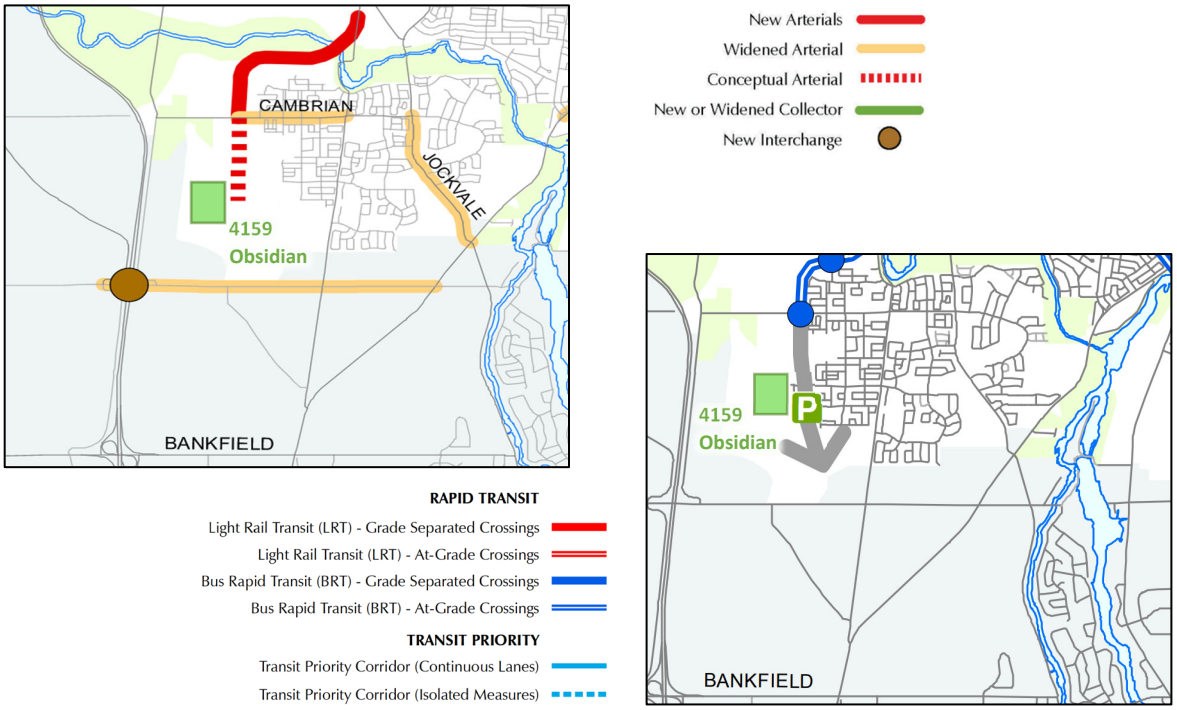
2.3.1 Changes to the Area Transportation Network

2.3.1.1 Transportation Master Plan (2013)

The Transportation Master Plan (TMP) focuses on key themes derived from key stakeholders and resident consultation, and these key themes have been superseded by the guiding principles and policies of the 2023 TMP – Part 1.

As the TMP 2031 Road Network Concept and Transit Ultimate Network are not included in the 2023 TMP – Part 1, and are expected to be included in Part 2, the 2031 Road Network Concept and Transit Ultimate Network from the Transportation Master Plan (2013) is instructive to how the transportation facilities are planned for Barrhaven South. Figure 12 illustrates the TMP context in the area.

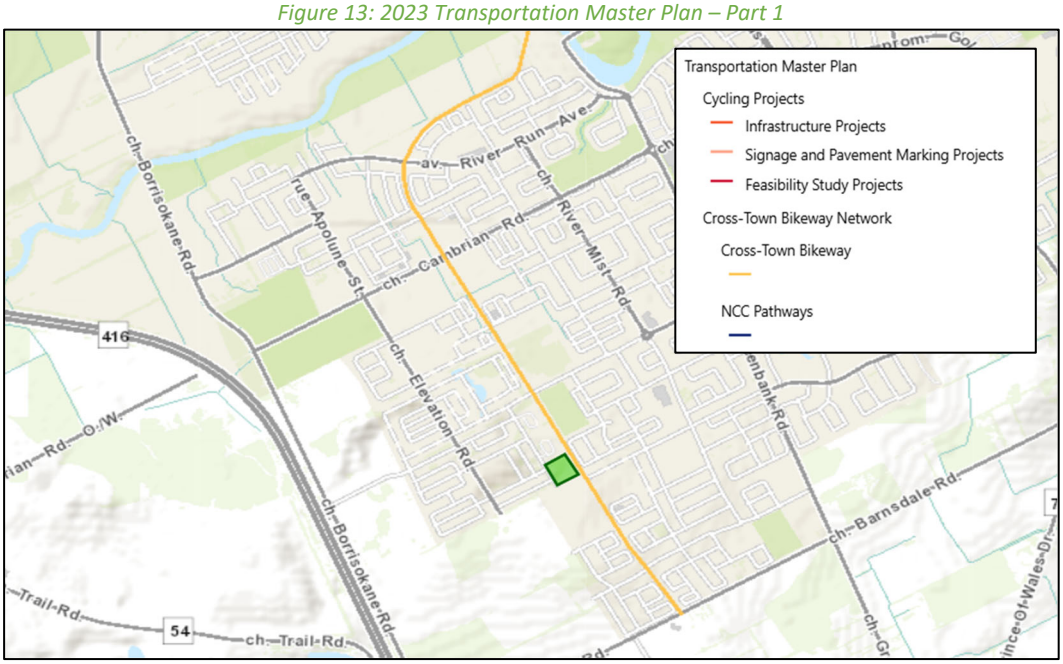
Figure 12: TMP 2031 Road Network Concept and Transit Ultimate Network



2.3.1.2 2023 Transportation Master Plan – Part 1

The 2023 TMP – Part 1 includes a Cross-Town Bikeway on Re-Aligned Greenbank Road. Figure 13 illustrates the cycling and pedestrian plans in the 2023 TMP – Part 1.

Figure 13: 2023 Transportation Master Plan – Part 1



Source: http://maps.ottawa.ca/geoOttawa/ Accessed: March 07, 2025

2.3.1.3 Barrhaven South Urban Expansion Area Community Design Plan (CDP) (2018)

The Barrhaven South Urban Expansion Area CDP includes street hierarchy plan, pedestrian plan, transit facilities plan, and cycling facilities plan. The street hierarchy plan includes a westward extension of Kilbirnie Drive to the

urban boundary. The planned 24.0 metre cross section of Kilbirnie Drive was envisioned to support pedestrian and cycling facilities and potentially be used as a local transit route. Cappamore Drive is identified as a new collector road in the CDP. It is designated as a potential local transit route and includes pedestrian and cycling facilities along the road. Streetscape elements are encouraged within the available boulevard space, with traffic calming and narrowing to reduce crossing distances noted along the collector and local roadways. Pathways linking neighbourhoods and providing connectivity to the park and ride are noted within the CDP.

2.3.1.4 Cambrian Road Widening Environmental Assessment (EA)

The Cambrian Road Widening Environmental Assessment includes a four-lane cross section along Cambrian Road from Longfields Drive to the future Realigned Greenbank Road. Cross-section will include sidewalks on both sides and local connections to the adjacent eyebrow streets and signalized intersections. This EA has been approved by the Transportation Committee and City Council, but the widening is not considered in the City of Ottawa's Transportation Master Plan 2031 Affordable Road Network and therefore the timing of the widening is unknown.

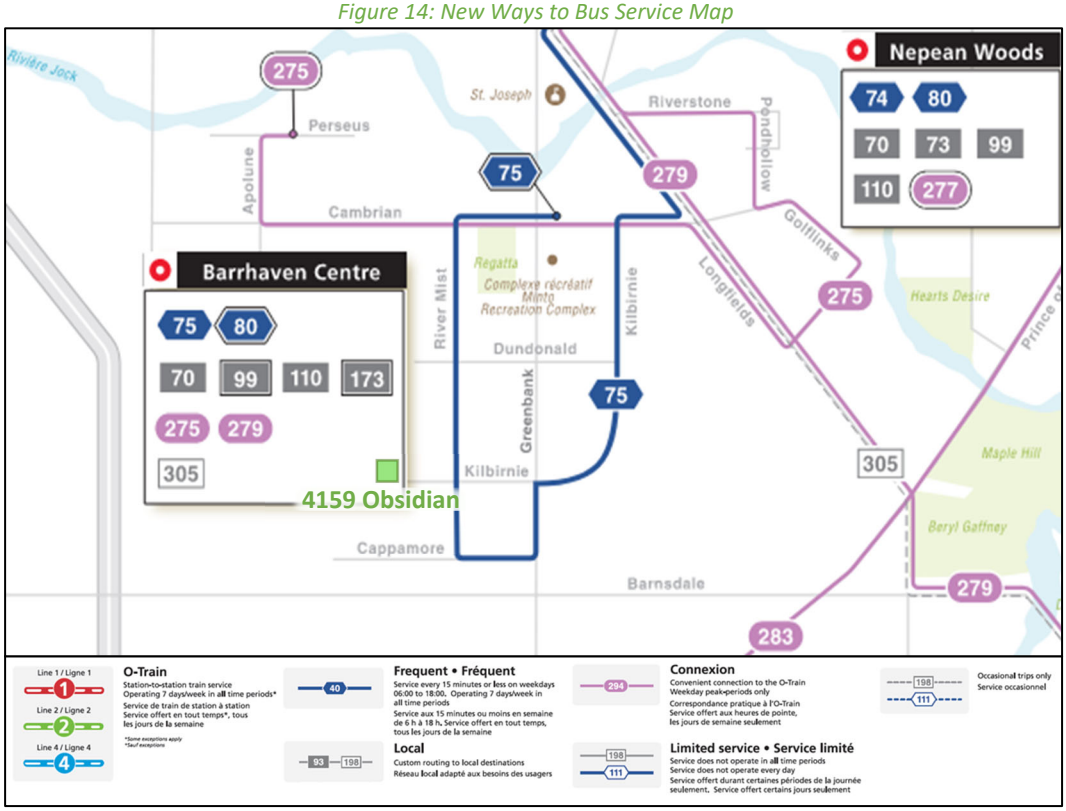
2.3.1.5 Greenbank Road Realignment and Southwest Transitway Extension

The Realigned Greenbank Road includes the design of a new 4-lane arterial roadway with a 2-lane separated median Bus Rapid Transit (BRT) and includes sidewalks and cycletracks on both sides of the road. The BRT will connect from Chapman Mills Drive to the new park-and-ride at Kilbirnie Drive. A park-and-ride facility is anticipated to be located at the southwest corner of the future intersection of the Kilbirnie Drive Extension and Realigned Greenbank Road to provide parking for approximately 400 vehicles at the terminus of the BRT line. Stations will be located at major intersections, including Darjeeling Avenue, Riverboat Heights, River Run Avenue, Cambrian Road, and Dundonald Drive. Local bus routes will also be able to enter and exit the Transitway corridor to service adjacent streets. The project also includes a new bridge over the Jock River.

2.3.1.6 OC Transpo's New Ways to Bus

Responding to recent ridership trends and anticipating the upcoming completion of the Stage 2 expansion of LRT service within the City, the OC Transpo bus service is planned to be recalibrated to focus on frequency, local service in neighbourhoods, and connections to key destinations. These changes are expected in 2025, and the new service map is illustrated in Figure 14.

Figure 14: New Ways to Bus Service Map



Source: https://www.octranspo.com/en/plan-your-trip/service-changes/new-ways-to-bus#new-network Accessed: March 10, 2025

2.3.2 Other Study Area Developments

Caivan's Ridge Phases 1-2 (3809 Borrisokane Road)

The proposed development application includes 279 townhouse units and 311 detached home units and is expected to generate 401 new AM peak hour two-way auto trips and 457 new PM peak hour two-way auto trips. The development is currently being constructed and will be assumed to be built out by 2026. (CGH Transportation, 2019)

Caivan's Ridge Phase 3-4 (3717Borrisokane Road)

The proposed development application includes 642 townhouse units and 61 detached housing units and is expected to generate 235 new AM peak hour two-way auto trips and 254 PM peak hour two-way auto trips. The development includes the extension of Dundonald Drive and Elevation Drive. The development is currently being constructed and will be assumed to be built out by 2026. (CGH Transportation, 2021)

Mattamy's Half Moon Bay South Phase 8 (3718 Greenbank Road)

The proposed development, located on the west of the Re-Aligned Greenbank Road corridor includes a mixture of 228 stacked townhouse units and is anticipated to generate 134 new AM peak hour two-way vehicle trips and 158 new PM peak hour two-way vehicle trips. The development is currently being constructed and will be assumed to be built out by 2026. (CGH Transportation, 2022)

3809 Borrisokane Road

The proposed development includes a light industrial campus comprising three (3) one-storey and two (2) two-storey buildings. The development is anticipated to be built out by 2031 and is expected to generate 496 new AM peak hour two-way auto trips and 163 new PM peak hour two-way auto trips. (CGH Transportation, 2024)

Meadow's Phase 7-8 (3640 Greenbank Road)
The proposed development, which was named Phase 5 in the TIA, includes a plan of subdivision application. The concept plan considers a total of 221 townhouses and 125 detached homes. The development is expected to generate 294 new AM peak hour two-way vehicle trips and 334 new PM peak hour two-way vehicle trips. The development is currently being constructed and will be assumed to be built out by 2026. (CGH Transportation, 2018)

3845 Cambrian Road
The proposed development consists of a gross floor area of 28,000 sq. ft. grocery store and a gross floor area of 5,430 sq. ft. retail store and is expected to generate 57 AM and 124 PM peak hour two-way auto trips. The TIA anticipated 2025 as the build-out year, however the construction has not yet begun, and it will be assumed to be built out by 2027. (CGH Transportation, 2023)

Metro Ontario Inc. (3831 Cambrian Road)
The proposed development includes a site plan application consisting of a 4,024-square-metre supermarket, an attached 929 square metre retail store, an 830 square metre retail building, and a 1,060 square metre mixed-use building. The development was initially anticipated to be built out by 2023 and to generate 146 AM and 110 PM peak hour two-way auto trips. This development will be assumed to be built out by 2025. (CGH Transportation, 2021)

1045 Kilbirnie Drive
The proposed development consists of an elementary school and a childcare center with gross floor area of 4,781 square metres. The development is expected to generate 162 AM and 102 PM peak hour two-way auto trips and 22 AM peak hour school buses. The development is currently being constructed and will be assumed to be built out by 2026. (WSP, 2022)

Choice Properties (3850 Cambrian Road)
The proposed development includes a site plan application consisting of gross floor area of 17,000 sq. ft pharmacy and gross leasable area of 18,781 sq. ft retail buildings. The development was initially anticipated to be built out by 2024 and to generate 30 AM and 39 PM peak hour two-way auto trips. Construction is anticipated to commence in 2025, and the development will be assumed to be built out by 2026. (CGH Transportation, 2023)

Mattamy's Half Moon Bay West Phase 3
The proposed subdivision is situated within the Mattamy Development of Half Moon Bay West and includes 38 detached single-family homes, 190 townhomes, and a 0.43-hectare commercial block. The development is expected to generate 109 AM and 126 PM peak hour two-way auto trips and is currently being constructed and will be assumed to be built out by 2026. (CGH Transportation, 2021)

3555 Borrisokane Road
The proposed development includes a site plan application consisting of a 31,360 sq. ft Korean community church. The development was initially anticipated to be built out by 2024 and to generate 33 AM and 39 PM peak hour two-way auto trips. This development will be assumed to be built out by 2026. (Castleglenn Consultants, 2024)

Minto's Quinn's Pointe Stages 4 (3882 Barnsdale Road and 3960 Greenbank Road)
The proposed development application includes a plan of subdivision application consisting of 536 single-family dwelling units, 493 townhomes, 100 apartment units, and two elementary schools. Phases 2 and 3 have been completed, and Phase 4 is currently being constructed and will be assumed to be built out by 2026. (Stantec, 2018)

*Barrhaven South Future Neighborhood Phase 3 (*3882 Barnsdale Road, 3960 Greenbank Road, 4000 Barnsdale Road, 3933 Borrisokane Road*)*
The proposed development is located within the S-1 Urban Expansion Area and includes a zoning amendment and plan of subdivision for the construction of 952 residential homes including park/open space on the eastern portion of Barrhaven South PH3. The western portion of Barrhaven South PH3 remains as industrial lands on the north side, with woodland and stormwater maintenance ponds on the south side. The development includes future extension of Kilbirnie Drive and is anticipated to be built out by 2030. The urban expansion planning exercise for this area is ongoing and no trip generation or traffic patterns have been forecast at this time.

3 Study Area and Time Periods

3.1 Study Area

The study area will include the intersections of Cambrian Road at Elevation Road/Apolune Street, Greenbank Road at Kilbirnie Drive and the site accesses (future conditions) at Obsidian Street.

The boundary road will be Obsidian Street and Screenline 49 is beyond the study area limits at the Jock River and will not be analyzed as part of this study.

3.2 Time Periods

As the proposed development is composed entirely of residential units the weekday AM and PM peak hours will be examined.

3.3 Horizon Years

The anticipated build-out year is 2028. As a result, the full build-out plus five years horizon year is 2033.

4 Development-Generated Travel Demand

4.1 Mode Shares

Examining the mode shares recommended in the TRANS Trip Generation Manual (2020) for the subject district, derived from the most recent National Capital Region Origin-Destination survey (OD Survey), the existing average district mode shares by land use for South Nepean have been summarized in Table 3Table 3.

Table 3: TRANS Trip Generation Manual Recommended Mode Shares – South Nepean

Travel Mode	Multi-Unit (Low-Rise)	
	AM	PM
Auto Driver	49%	49%
Auto Passenger	13%	13%
Transit	26%	24%
Cycling	2%	2%
Walking	9%	12%
Total	**100%**	**100%**

Given the site is located beyond the typical 400-metre walking distance to local transit, a lower transit mode share is considered at this location. A 10% shift to the auto mode from the transit mode is proposed. The proposed modified mode share targets are summarized in Table 4.

Table 4: Proposed Development Mode Shares

Travel Mode	Multi-Unit (Low-Rise)	
	AM	PM
Auto Driver	60%	59%
Auto Passenger	13%	13%
Transit	16%	14%
Cycling	2%	2%
Walking	9%	12%
Total	**100%**	**100%**

4.2 Trip Generation

This TIA has been prepared using the vehicle and person trip rates for the residential dwellings using the TRANS Trip Generation Manual (2020). Table 5Table 5 summarizes the person trip rates for the proposed residential land use for each peak period.

Table 5: Trip Generation Person Trip Rates by Peak Period

Land Use	Land Use Code	Peak Period	Vehicle Trip Rate	Person Trip Rates
Multi-Unit Low-Rise	220 (TRANS)	AM	-	1.35
		PM	-	1.58

Using the above person trip rates, the total person trip generation has been estimated. Table 6 summarizes the total person trip generation for the residential land use.

Table 6: Person Trip Generation by Peak Period

Land Use	Units	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Multi-Unit Low-Rise	93	38	88	126	82	65	147

Using the above mode share targets, the person trips by mode have been projected. Trip generation by peak hour has been forecasted using the prescribed peak period conversion factors presented in the TRANS Trip Generation Manual (2020) for the residential component. Table 7 summarizes the residential trip generation by mode and peak hour.

Table 7: Trip Generation by Mode

Travel Mode		AM Peak Hour				PM Peak Hour			
		Mode Share	In	Out	Total	Mode Share	In	Out	Total
Multi-Unit (Low-Rise)	Auto Driver	**60%**	11	25	36	**59%**	21	17	38
	Auto Passenger	**13%**	2	6	8	**13%**	4	4	8
	Transit	**16%**	3	8	11	**14%**	6	4	10
	Cycling	**2%**	1	1	2	**2%**	1	0	1
	Walking	**9%**	2	4	6	**12%**	5	4	9
	Total	**100%**	**19**	**44**	**63**	**100%**	**37**	**29**	**66**

As shown above, a total of 36 AM and 38 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

4.3 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel for the residential component, and these patterns were applied based on the build-out of South Nepean. Table 8 below summarizes the distributions.

Table 8: OD Survey Distribution – South Nepean

To/From	Residential % of Trips
North	85%
South	5%
East	5%
West	5%
Total	**100%**

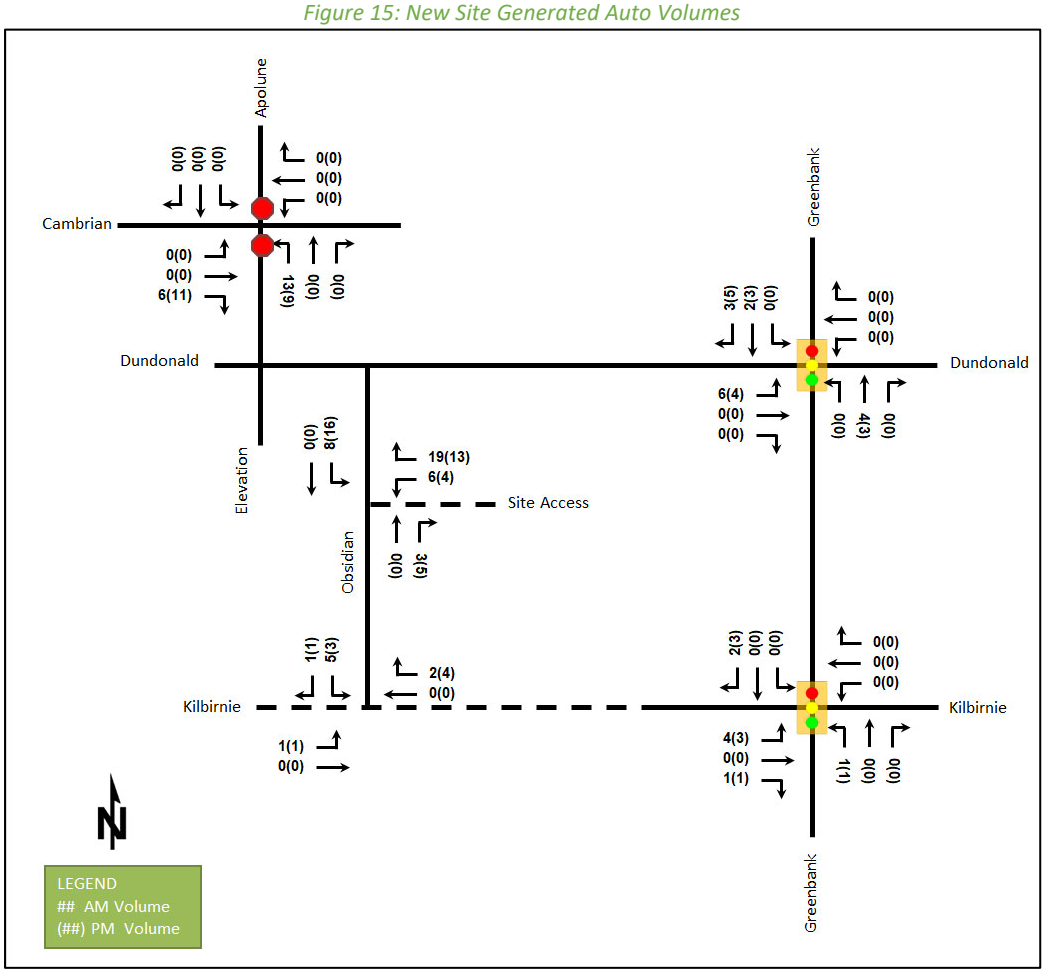
4.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 9 summarizes the proportional assignment to the study area roadways, and Figure 15 illustrates the new site generated volumes.

Table 9: Trip Assignment

To/From	Locally Via	Externally Via
North	50% Cambrian Rd (W), 35% Greenbank Rd (N)	50% Borrisokane Rd (N), 30% Greenbank Rd (N), 5% Longfields Rd (N)
South	5% Greenbank Rd (S)	5% Hwy 416 (S)
East	5% Greenbank Rd (N)	5% Longfields Dr (N)
West	5% Kilbirnie Dr (W)	5% Barnsdale Rd
Total	**100%**	**100%**

Figure 15: New Site Generated Auto Volumes



5 Exemption Review

Table 10 summarizes the exemptions for this TIA.

Table 10: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Required
	4.1.3 New Street Networks	Only required for plans of subdivision	Exempt
Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Required
Boundary Street Design		All applications	Required
Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required
Network Impact			
Background Network Travel Demand	All Elements	Only required when one or more other Network Impact Modules are triggered when the development generates more than 75 auto or transit trips	Exempt
Demand Rationalization		Only required when one or more other Network Impact Modules when the development generates more than 75 auto trips	Exempt
Neighbourhood Traffic Calming	4.6.1 Adjacent Neighbourhoods	If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between an arterial road and the site's access: 1. Access to Collector or Local; 2. "Significant sensitive land use presence" exists, where there is at least two of the following adjacent to the subject street segment: • School (within 250m walking distance); • Park; • Retirement / Older Adult Facility (i.e. long-term care and retirement homes); • Licenced Child Care Centre; • Community Centre; or • 50%, or greater, of adjacent property along the route(s) is occupied by residential lands and a minimum of 10 occupied residential units are present on the route.	Exempt

Module	Element	Explanation	Exempt/Required
		3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision; 4. At least 75 site-generated auto trips; 5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	
Transit	4.7.1 Transit Route Capacity	Only required when the development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	Only required when the development generates more than 75 auto trips	Exempt
Network Concept		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of equivalent volume permitted by established zoning	Exempt
Intersection Design	4.4.1-2/4.9.1 Intersection Control	Only required when the development generates more than 75 auto trips	Exempt
	4.4.3/4.9.2 Intersection Design	Only required when the development generates more than 75 auto trips	Exempt

6 Development Design

6.1 Design for Sustainable Modes

The proposed development consists of stacked townhome units. A temporary 1.8-metre walkway is proposed along the eastern boundary, partly in the future location of the Realigned Greenbank Road sidewalk, and 1.8-metre mid-block connections between the future Realigned Greenbank Road and the existing sidewalk along Obsidian Street are proposed along northern and southern property boundaries. Additionally, 1.5-metre and 1.8-metre internal walkways provide pedestrian access between buildings and these surrounding facilities. The infrastructure TDM checklist is provided in Appendix E.

Bicycle parking is located in surface racks interspersed throughout the site and cycling access is via the drive aisles connecting to the previous phase to the north (3718 Greenbank Road).

6.2 Circulation and Access

Vehicular and cycling access is provided to Obsidian Street via the connection to the previous phase to the north. Garbage facilities are located to the north and east sides of the surface parking lot. No circulation issues are noted with the internal drive aisles, and the standard fire lane geometry has been provided.

7 Parking

7.1 Parking Supply

A total of 123 vehicle parking spaces are proposed to serve 4159 Obsidian Street, including 104 residential parking spaces and 19 visitor parking spaces. According to the parking provisions from the Zoning By-Law, 1.2 parking spaces per unit for residents and 0.2 parking spaces per unit for visitors are required, resulting in 131 vehicle parking spaces

required with 112 spaces for residents and 19 spaces for visitors. Therefore, the site is proposed to include eight fewer parking spaces than required.

Currently, the adjacent phase has residual surface parking that can accommodate the potential overflow if the eight spaces are needed. Additionally, the proposed Zoning By-Law is eliminating the minimum parking rates, and this will be compliant once those changes take effect.

According to the Zoning By-Law, the minimum bicycle parking provision is 0.5 bike spaces per unit, resulting in 47 bicycle parking spaces. The site proposes a total of 48 bicycle parking spaces, which exceeds the minimum bicycle parking requirement.

8 Boundary Street Design

Table 11 summarizes the MMLOS analysis for the boundary streets of Obsidian Street and future Re-Aligned Greenbank Road. The existing and future conditions for Obsidian Street will be the same and are considered in one row. The Obsidian Street analysis is based on the land use designation of "General Urban Area" and the future Re-Aligned Greenbank Road analysis is based on the policy area of "Within 300m of a school" given its proximity to the future public elementary school at the corner of Kilbirnie Drive at Robin Easey Avenue. The MMLOS worksheet has been provided in Appendix D.

Table 11: Boundary Street MMLOS Analysis

Segment	Pedestrian LOS		Bicycle LOS		Transit LOS		Truck LOS	
	PLOS	Target	BLOS	Target	TLOS	Target	TrLOS	Target
Obsidian Street	B	C	D	D	N/A	N/A	N/A	N/A
Future Re-Aligned Greenbank Road	**C**	A	A	A	A	A	A	D

Obsidian Street meets the pedestrian and bicycle MMLOS targets. The future Re-Aligned Greenbank Road will meet the bicycle, transit, and truck MMLOS targets, but will not meet the pedestrian LOS target despite having the most robust pedestrian facilities scored within the MMLOS framework. This situation is typical for arterial roads in policy areas associated with a LOS target of A given the anticipated curb lane vehicle volumes of arterial roads preclude the ability to meet LOS A outside of reducing operating speeds to 30 km/h. These treatments would not be consistent with the function of arterial roads as facilitating flow. No improvements, and no further analysis is required to address MMLOS as part of the study.

9 Transportation Demand Management

9.1 Context for TDM

The subject site has been assumed to rely predominantly on auto modes due to being beyond the 400 metres walking distance of local transit stops. A shift from auto modes to transit modes in both the subject and surrounding developments is anticipated once the BRT network is extended along the Re-Aligned Greenbank Road Corridor, but any such shifts are expected to occur outside of the analysis horizons of this report. Overall, the modal shares are likely to be achieved and applicable supporting TDM measures should be provided.

The subject site is within the Barrhaven South Expansion Study Area Community Design Plan.

Total bedrooms within the development is subject to the final unit breakdown. No age restrictions are noted.

9.2 Need and Opportunity

The subject site has been assumed to rely predominantly on auto travel and those assumptions have been carried through the analysis. The risks of not meeting these mode shares are low due to the increased auto modes assumed and the limited scale of the development.

9.3 TDM Program

The "suite of post occupancy TDM measures" has been summarized in the TDM checklists for the residential land uses. The checklist is provided in Appendix E. The key TDM measure recommended to be included is the unbundling of parking costs from purchase or rental costs. Given OC Transpo has previously stated limited expansion of services to developing areas are anticipated in the near future and based on the small scale of the subject development, no additional measures are considered applicable to the site. The future provision of BRT, sidewalks, and cycletracks along the Realigned Greenbank Road corridor in the future is expected to incur a large elective shift in modal shares towards transit, walking, and cycling, where future TDM measures would not be expected to be required to achieve these results.

10 Summary of Improvements Indicated and Modifications Options

The following summarizes the analysis and results presented in this TIA report:

Proposed Site and Screening

- The proposed site includes 93 stacked townhome units
- Vehicular and cycling accesses will be provided along Obsidian Street via the connection to the previous phase to the north
- The development is proposed to be completed as a single phase by 2028
- The trip generation trigger was met for the TIA Screening
- This study was prepared in support of a site plan application
- Based on the exemption review, the Site Design and TDM components of the TIA are required

Existing Conditions

- Greenbank Road and Cambrian Road are arterial roads and Elevation Road, Apolune Street, Dundonald Drive, and Kilbirnie Drive are collector roads, and Obsidian Street is a local road in the study area
- Sidewalks are provided along the east side of Obsidian Street and Greenbank Road north of Kilbirnie Drive, and both sides of Kilbirnie Drive, Apolune Street, and Cambrian Road between Seeley's Bay Street and Greenbank Road
- A bike lane is present on the east side of Greenbank Road north of Kilbirnie Drive and a MUP is present on the west side
- MUPs are provided on both sides of Elevation Road
- Realigned Greenbank Road is designated as a Cross-Town Bikeway
- No collisions noted on the adjacent streets to the site during the 2018-2022 time period
- During peak hours in the existing conditions, the study area intersections operate well

Planned Conditions

- The westward extension of Kilbirnie Drive to the urban boundary is assumed to occur by site buildout
- The Cambrian Road widening and Greenbank Road realignment and southwest transitway extension are assumed to occur beyond the study horizon years

Development Generated Travel Demand

- The proposed development is forecasted to produce 63 AM and 66 PM two-way people trips
- Of the forecasted people trips, 36 AM and 38 PM two-way trips will be vehicle trips based on 60% and 59% modal share target
- Of the forecasted trips, 85% are anticipated to travel to the north, 5% to the south, 5% to the east, and 5% to the west

Development Design

- A temporary 1.8-metre walkway is proposed along the eastern boundary and 1.8-metre mid-block connections along northern and southern property boundaries
- Bicycle parking is located in surface racks interspersed throughout the site
- No circulation issues are noted with the internal drive aisles, and the standard fire lane geometry has been provided

Parking

- The zoning by-law requires 131 vehicle parking spaces including 112 residential parking spaces and 19 visitor parking spaces
- A total of 123 vehicle parking spaces are proposed, including 104 residential parking spaces and 19 visitor parking spaces, eight residential spaces below the Zoning By-Law minimum
- The adjacent phase has residual surface parking that can accommodate the potential overflow if the eight spaces are needed and the proposed Zoning By-Law is eliminating the minimum parking rates, and this will be compliant once those changes take effect
- The site provides 48 bicycle parking spaces, which exceeds the minimum site-specific Zoning By-Law requirement for 47 bicycle spaces

Boundary Street Design

- Obsidian Street meets pedestrian and cycling MMLOS targets and future Re-Aligned Greenbank Road will meet bicycle, transit, and truck MMLOS targets, but will not meet the pedestrian LOS target
- No additional pedestrian configurations could meet targets as they are limited by forecasted vehicle volumes and typical arterial operating speeds
- No improvements are required to address MMLOS within the study area

TDM

- Supportive TDM measures to be included within the proposed development should include the unbundling of parking costs from purchase or rental costs
- Additional transit uptake is anticipated once the Realigned Greenbank Road BRT corridor is constructed

11 Conclusion

It is recommended that, from a transportation perspective, the proposed development applications proceed.

Prepared By:

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Reihaneh Azhdar
Transportation Engineering-Intern

Reviewed By:

Andrew Harte, P.Eng.
Senior Transportation Engineer

Appendix A

TIA Screening Form and PM Certification Form

6 Plaza Court
Ottawa, ON K2H 7W1

City of Ottawa 2023 Revisions to 2017 TIA Guidelines
Step 1 - Screening Form

Date: 2025-03-10
Project Number: 2025-011
Project Reference: HMBS Phase 7

1.1 Description of Proposed Development	
Municipal Address	4159 Obsidian Street
Description of Location	Undeveloped block between future Re-Aligned Greenbank Road and Obsidian Street, midblock between Dundonald Drive and Kilbirnie Drive
Land Use Classification	General Mixed-Use Zone (GM[2800] H(14.5))
Development Size	96 stacked townhomes
Accesses	Proposed to access Obsidian Street through previous phase to north. Alternatively, new full move access will be located on Obsidian Street.
Phase of Development	Single Phase
Buildout Year	2027
TIA Requirement	Full TIA Required

1.2 Trip Generation Trigger		
Land Use Type	Multi-Family (Low-Rise)	
Development Size	96	Units
Trip Generation Trigger	Yes	

1.3 Location Triggers	
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	No
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?	No
Location Trigger	No

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

Certification Form for TIA Study PM

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

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 they meet the four criteria listed below.

CERTIFICATION

- ☑ 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; (Update effective July 2023)
- ☑ 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;
- ☑ I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
- ☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise
  - ☑ is either transportation engineering
  - ☐ or transportation planning.

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

City Of Ottawa
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
Ottawa, ON
K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Revision Date: June 2023

Dated at Ottawa (City) this 17 day of August , 20 23 .

Name : Andrew Harte

Professional title: Senior Transportation Engineer / Vice-President Ottawa

Signature of individual certifier that s/he/they meet the above criteria

Office Contact Information (Please Print)
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Telephone / Extension: 613-697-3797
Email Address: andrew.harte@cghtransportation.com

Stamp

Revision Date: June 2023

Appendix B

Turning Movement Counts

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #24-105 - CGH Transportation

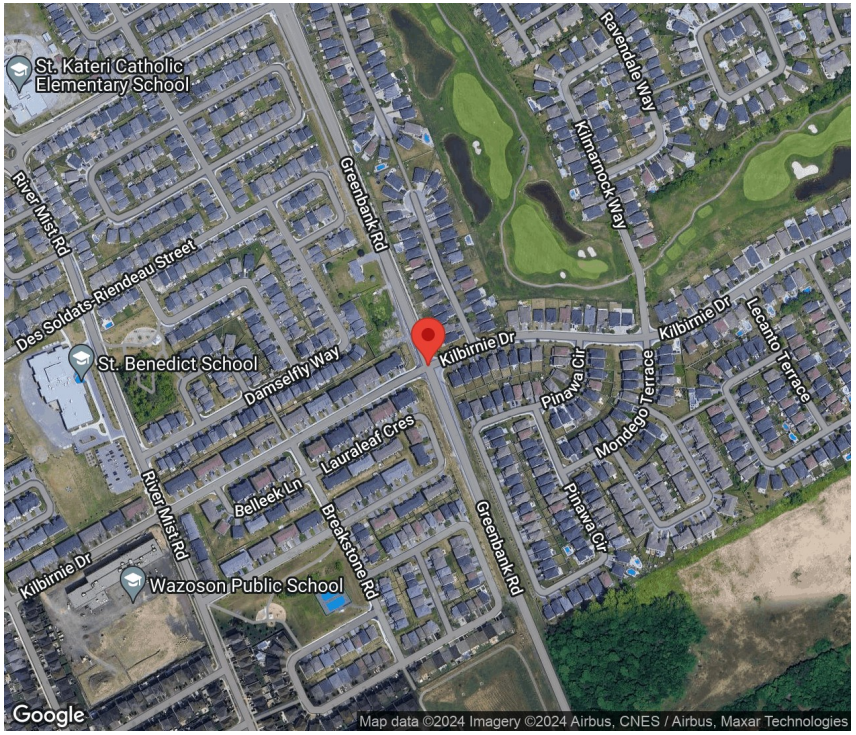
Intersection Count Report

Intersection:	Greenbank Rd & Kilbirnie Dr
Municipality:	Ottawa
Count Date:	Wednesday, Mar 20, 2024
Site Code:	2410400002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Greenbank Rd & Kilbirnie Dr
Site Code:	2410400002
Municipality:	Ottawa
Count Date:	Mar 20, 2024



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

Greenbank Rd - Traffic Summary

	North Approach Totals						South Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	11	165	23	0	199	1	13	103	17	0	133	0	332
08:00 - 09:00	22	194	64	1	281	2	58	144	27	0	229	11	510
09:00 - 10:00	23	159	71	2	255	4	17	112	13	0	142	6	397
BREAK													
11:30 - 12:00	4	56	25	1	86	0	10	51	13	0	74	1	160
12:00 - 13:00	26	110	58	1	195	9	31	129	23	0	183	3	378
13:00 - 13:30	12	55	23	0	90	4	12	36	6	0	54	4	144
BREAK													
15:00 - 16:00	57	203	117	3	380	9	57	181	39	0	277	5	657
16:00 - 17:00	52	221	88	1	362	11	66	218	75	0	359	8	721
17:00 - 18:00	46	156	115	1	318	12	72	224	60	0	356	3	674
GRAND TOTAL	253	1319	584	10	2166	52	336	1198	273	0	1807	41	3973

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

Kilbirnie Dr - Traffic Summary

	East Approach Totals						West Approach Totals						
	Includes Cars, Trucks, Bicycles						Includes Cars, Trucks, Bicycles						
Hour	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Total
07:00 - 08:00	71	7	43	0	121	0	63	9	127	0	199	1	320
08:00 - 09:00	58	7	58	0	123	6	74	18	81	0	173	0	296
09:00 - 10:00	47	8	35	0	90	3	93	11	58	0	162	3	252
BREAK													
11:30 - 12:00	11	3	12	0	26	2	26	3	20	0	49	0	75
12:00 - 13:00	15	7	26	0	48	0	50	6	35	0	91	2	139
13:00 - 13:30	11	6	11	0	28	1	21	5	18	0	44	4	72
BREAK													
15:00 - 16:00	23	25	43	0	91	4	67	11	42	0	120	3	211
16:00 - 17:00	59	31	35	0	125	5	96	13	70	0	179	13	304
17:00 - 18:00	57	17	40	0	114	1	80	12	46	0	138	11	252
GRAND TOTAL	352	111	303	0	766	22	570	88	497	0	1155	37	1921

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

North Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	1	36	6	0	43	0	0	0	0	0	0	0	0	0	0	0
07:15	2	41	4	0	47	0	1	0	0	1	0	0	0	0	0	1
07:30	5	40	7	0	52	1	0	0	0	1	0	0	0	0	0	0
07:45	2	44	6	0	52	0	3	0	0	3	0	0	0	0	0	0
08:00	3	45	18	1	67	0	1	0	0	1	0	0	0	0	0	0
08:15	4	43	16	0	63	0	3	0	0	3	0	0	0	0	0	1
08:30	8	48	11	0	67	0	0	0	0	0	0	0	0	0	0	0
08:45	7	52	18	0	77	0	2	1	0	3	0	0	0	0	0	1
09:00	11	58	29	0	98	1	4	0	0	5	0	0	0	0	0	2
09:15	3	45	15	1	64	0	1	0	0	1	0	0	0	0	0	0
09:30	6	22	13	1	42	0	1	1	0	2	0	0	0	0	0	1
09:45	2	27	13	0	42	0	1	0	0	1	0	0	0	0	0	1
SUBTOTAL	54	501	156	3	714	2	17	2	0	21	0	0	0	0	0	7

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

North Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	1	24	9	1	35	0	1	0	0	1	0	0	0	0	0	0
11:45	2	30	16	0	48	1	1	0	0	2	0	0	0	0	0	0
12:00	6	33	16	0	55	0	0	0	0	0	0	0	0	0	0	2
12:15	8	28	21	0	57	0	0	0	0	0	0	0	0	0	0	1
12:30	3	24	8	0	35	0	1	0	0	1	0	0	0	0	0	5
12:45	9	23	13	1	46	0	1	0	0	1	0	0	0	0	0	1
13:00	5	28	15	0	48	0	0	0	0	0	0	0	0	0	0	2
13:15	7	26	8	0	41	0	1	0	0	1	0	0	0	0	0	2
SUBTOTAL	41	216	106	2	365	1	5	0	0	6	0	0	0	0	0	13

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

North Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	4	34	23	1	62	0	0	0	0	0	0	0	0	0	0	3
15:15	15	48	18	1	82	1	0	1	0	2	0	0	0	0	0	3
15:30	19	45	28	0	92	0	1	2	0	3	0	0	0	0	0	2
15:45	17	73	44	1	135	1	2	1	0	4	0	0	0	0	0	1
16:00	11	63	19	0	93	0	1	0	0	1	0	0	0	0	0	2
16:15	12	48	23	1	84	0	3	0	0	3	0	0	0	0	0	6
16:30	9	38	24	0	71	0	0	0	0	0	0	0	0	0	0	3
16:45	20	68	22	0	110	0	0	0	0	0	0	0	0	0	0	0
17:00	15	33	31	0	79	0	0	0	0	0	0	0	0	0	0	1
17:15	10	45	31	0	86	0	2	0	0	2	0	0	0	0	0	4
17:30	15	45	29	1	90	0	1	0	0	1	0	0	0	0	0	5
17:45	6	30	24	0	60	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	153	570	316	5	1044	2	10	4	0	16	0	0	0	0	0	32
GRAND TOTAL	248	1287	578	10	2123	5	32	6	0	43	0	0	0	0	0	52

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

South Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	5	21	4	0	30	0	1	1	0	2	0	0	0	0	0	0
07:15	1	22	2	0	25	0	1	2	0	3	0	0	0	0	0	0
07:30	3	21	4	0	28	0	2	2	0	4	0	0	0	0	0	0
07:45	4	35	2	0	41	0	0	0	0	0	0	0	0	0	0	0
08:00	17	30	8	0	55	1	3	0	0	4	0	0	0	0	0	0
08:15	15	33	6	0	54	0	1	0	0	1	0	0	0	0	0	4
08:30	12	38	4	0	54	0	0	2	0	2	0	0	0	0	0	5
08:45	12	39	4	0	55	1	0	3	0	4	0	0	0	0	0	2
09:00	1	30	6	0	37	0	1	1	0	2	0	0	0	0	0	3
09:15	8	24	4	0	36	0	4	0	0	4	0	0	0	0	0	2
09:30	3	28	1	0	32	0	0	0	0	0	0	0	0	0	0	1
09:45	5	24	1	0	30	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	86	345	46	0	477	2	14	11	0	27	0	0	0	0	0	17

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

South Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	5	24	5	0	34	0	0	1	0	1	0	0	0	0	0	0
11:45	5	26	6	0	37	0	1	1	0	2	0	0	0	0	0	1
12:00	12	32	4	0	48	0	0	0	0	0	0	0	0	0	0	0
12:15	7	35	5	0	47	0	1	0	0	1	0	0	0	0	0	1
12:30	5	31	5	0	41	0	0	0	0	0	0	0	0	0	0	0
12:45	6	29	9	0	44	1	1	0	0	2	0	0	0	0	0	2
13:00	6	18	4	0	28	0	0	0	0	0	0	0	0	0	0	1
13:15	6	17	2	0	25	0	1	0	0	1	0	0	0	0	0	3
SUBTOTAL	52	212	40	0	304	1	4	2	0	7	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

South Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	9	42	12	0	63	0	0	0	0	0	0	0	0	0	0	3
15:15	15	40	10	0	65	0	0	0	0	0	0	0	0	0	0	1
15:30	9	51	13	0	73	2	2	0	0	4	0	0	0	0	0	1
15:45	22	45	4	0	71	0	1	0	0	1	0	0	0	0	0	0
16:00	19	53	16	0	88	0	1	1	0	2	0	0	0	0	0	1
16:15	10	51	15	0	76	0	0	1	0	1	0	0	0	0	0	5
16:30	17	49	25	0	91	0	1	0	0	1	0	0	0	0	0	0
16:45	20	62	17	0	99	0	1	0	0	1	0	0	0	0	0	2
17:00	17	50	13	0	80	0	1	0	0	1	0	0	0	0	0	0
17:15	18	47	14	0	79	0	0	0	0	0	0	0	0	0	0	0
17:30	17	62	18	0	97	0	0	0	0	0	0	0	0	0	0	2
17:45	20	64	15	0	99	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	193	616	172	0	981	2	7	2	0	11	0	0	0	0	0	16
GRAND TOTAL	**331**	**1173**	**258**	**0**	**1762**	**5**	**25**	**15**	**0**	**45**	**0**	**0**	**0**	**0**	**0**	**41**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

East Approach - Kilbirnie Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	11	0	8	0	19	0	1	0	0	1	0	0	0	0	0	0
07:15	17	1	12	0	30	0	1	2	0	3	0	0	0	0	0	0
07:30	18	1	10	0	29	0	1	1	0	2	0	0	0	0	0	0
07:45	25	2	10	0	37	0	0	0	0	0	0	0	0	0	0	0
08:00	19	0	12	0	31	0	1	1	0	2	0	0	0	0	0	0
08:15	13	1	10	0	24	1	0	0	0	1	0	0	0	0	0	2
08:30	17	0	17	0	34	0	1	0	0	1	0	0	0	0	0	4
08:45	8	4	18	0	30	0	0	0	0	0	0	0	0	0	0	0
09:00	13	0	11	0	24	1	2	0	0	3	0	0	0	0	0	0
09:15	9	3	8	0	20	0	0	0	0	0	0	0	0	0	0	1
09:30	13	0	6	0	19	0	1	0	0	1	0	0	0	0	0	0
09:45	10	1	9	0	20	1	1	1	0	3	0	0	0	0	0	2
SUBTOTAL	173	13	131	0	317	3	9	5	0	17	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

East Approach - Kilbirnie Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	2	1	5	0	8	0	1	0	0	1	0	0	0	0	0	2
11:45	9	0	7	0	16	0	1	0	0	1	0	0	0	0	0	0
12:00	5	0	11	0	16	0	1	0	0	1	0	0	0	0	0	0
12:15	3	2	5	0	10	1	1	0	0	2	0	0	0	0	0	0
12:30	4	0	10	0	14	0	2	0	0	2	0	0	0	0	0	0
12:45	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0
13:00	7	1	8	0	16	0	1	0	0	1	0	0	0	0	0	1
13:15	4	1	3	0	8	0	3	0	0	3	0	0	0	0	0	0
SUBTOTAL	36	5	49	0	90	1	11	0	0	12	0	0	0	0	0	3

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

East Approach - Kilbirnie Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	7	5	12	0	24	0	0	0	0	0	0	0	0	0	0	0
15:15	5	1	10	0	16	0	2	0	0	2	0	0	0	0	0	3
15:30	5	6	10	0	21	0	1	0	0	1	0	0	0	0	0	0
15:45	5	6	11	0	22	1	4	0	0	5	0	0	0	0	0	1
16:00	13	5	10	0	28	3	3	0	0	6	0	0	0	0	0	2
16:15	11	4	4	0	19	0	10	1	0	11	0	0	0	0	0	2
16:30	13	3	14	0	30	0	1	1	0	2	0	0	0	0	0	1
16:45	19	4	5	0	28	0	1	0	0	1	0	0	0	0	0	0
17:00	6	4	6	0	16	0	2	0	0	2	0	0	0	0	0	0
17:15	12	2	10	0	24	0	1	0	0	1	0	0	0	0	0	0
17:30	14	1	12	0	27	0	1	0	0	1	0	0	0	0	0	1
17:45	25	5	12	0	42	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	135	46	116	0	297	4	27	2	0	33	0	0	0	0	0	10
GRAND TOTAL	344	64	296	0	704	8	47	7	0	62	0	0	0	0	0	22

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

West Approach - Kilbirnie Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	13	0	31	0	44	0	1	0	0	1	0	0	0	0	0	0
07:15	16	0	25	0	41	0	2	0	0	2	0	0	0	0	0	0
07:30	19	2	34	0	55	1	1	0	0	2	0	0	0	0	0	0
07:45	14	1	37	0	52	0	2	0	0	2	0	0	0	0	0	1
08:00	22	1	17	0	40	0	1	0	0	1	0	0	0	0	0	0
08:15	13	1	22	0	36	0	1	0	0	1	0	0	0	0	0	0
08:30	18	0	20	0	38	0	3	0	0	3	0	0	0	0	0	0
08:45	21	0	22	0	43	0	11	0	0	11	0	0	0	0	0	0
09:00	32	1	21	0	54	1	1	0	0	2	0	0	0	0	0	2
09:15	29	5	19	0	53	1	1	1	0	3	0	0	0	0	0	0
09:30	12	0	8	0	20	0	1	1	0	2	0	0	0	0	0	1
09:45	18	1	8	0	27	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	227	12	264	0	503	3	26	2	0	31	0	0	0	0	0	4

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

West Approach - Kilbirnie Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	17	0	10	0	27	0	0	0	0	0	0	0	0	0	0	0
11:45	9	0	10	0	19	0	3	0	0	3	0	0	0	0	0	0
12:00	16	0	10	0	26	0	1	0	0	1	0	0	0	0	0	0
12:15	11	1	7	0	19	0	0	0	0	0	0	0	0	0	0	0
12:30	11	0	11	0	22	0	2	0	0	2	0	0	0	0	0	1
12:45	12	1	7	0	20	0	1	0	0	1	0	0	0	0	0	1
13:00	8	2	9	0	19	0	1	0	0	1	0	0	0	0	0	3
13:15	13	1	9	0	23	0	1	0	0	1	0	0	0	0	0	1
SUBTOTAL	97	5	73	0	175	0	9	0	0	9	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Municipality: Ottawa
Count Date: Mar 20, 2024

West Approach - Kilbirnie Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	7	3	8	0	18	0	0	0	0	0	0	0	0	0	0	0
15:15	19	1	5	0	25	0	1	0	0	1	0	0	0	0	0	0
15:30	14	2	14	0	30	1	0	1	0	2	0	0	0	0	0	3
15:45	25	3	14	0	42	1	1	0	0	2	0	0	0	0	0	0
16:00	33	3	27	0	63	0	2	0	0	2	0	0	0	0	0	6
16:15	29	3	16	0	48	0	1	1	0	2	0	0	0	0	0	7
16:30	17	1	11	0	29	0	1	0	0	1	0	0	0	0	0	0
16:45	17	2	15	0	34	0	0	0	0	0	0	0	0	0	0	0
17:00	24	2	5	0	31	0	1	0	0	1	0	0	0	0	0	2
17:15	25	1	14	0	40	0	0	0	0	0	0	0	0	0	0	1
17:30	11	4	14	0	29	0	1	0	0	1	0	0	0	0	0	2
17:45	20	3	13	0	36	0	0	0	0	0	0	0	0	0	0	6
SUBTOTAL	241	28	156	0	425	2	8	2	0	12	0	0	0	0	0	27
GRAND TOTAL	**565**	**45**	**493**	**0**	**1103**	**5**	**43**	**4**	**0**	**52**	**0**	**0**	**0**	**0**	**0**	**37**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:15:00
To:	10:00:00	To:	09:15:00

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Count Date: Mar 20, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Greenbank Rd runs N/S

North Approach

	Out	In	Total
Cars	305	280	585
Trucks	11	3	14
Bicycles	0	0	0
	316	283	599

Greenbank Rd

Bicycles	0	0	0	0
Trucks	1	9	1	0
Cars	74	201	30	0
Totals	75	210	31	0

Peds: 4

East Approach

	Out	In	Total
Cars	112	52	164
Trucks	5	23	28
Bicycles	0	0	0
	117	75	192

Kilbirnie Dr

			Totals
0	0	0	0
0	1	84	85
0	16	2	18
0	0	85	85

Peds: 2

Peds: 6

Kilbirnie Dr

Totals			
0	0	0	0
56	56	0	0
8	5	3	0
53	51	2	0

Peds: 14

West Approach

	Out	In	Total
Cars	171	119	290
Trucks	17	5	22
Bicycles	0	0	0
	188	124	312

Totals	41	142	26	0
Cars	40	140	20	0
Trucks	1	2	6	0
Bicycles	0	0	0	0

Greenbank Rd

South Approach

	Out	In	Total
Cars	200	337	537
Trucks	9	11	20
Bicycles	0	0	0
	209	348	557

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Count Date: Mar 20, 2024
Period: 07:00 - 10:00

Peak Hour Data (08:15 - 09:15)

Start Time	North Approach Greenbank Rd						South Approach Greenbank Rd						East Approach Kilbirnie Dr						West Approach Kilbirnie Dr						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:15	4	46	16	0	1	66	15	34	6	0	4	55	14	1	10	0	2	25	13	2	22	0	0	37	183
08:30	8	48	11	0	0	67	12	38	6	0	5	56	17	1	17	0	4	35	18	3	20	0	0	41	199
08:45	7	54	19	0	1	80	13	39	7	0	2	59	8	4	18	0	0	30	21	11	22	0	0	54	223
09:00	12	62	29	0	2	103	1	31	7	0	3	39	14	2	11	0	0	27	33	2	21	0	2	56	225
Grand Total	**31**	**210**	**75**	**0**	**4**	**316**	**41**	**142**	**26**	**0**	**14**	**209**	**53**	**8**	**56**	**0**	**6**	**117**	**85**	**18**	**85**	**0**	**2**	**188**	**830**
Approach %	9.8	66.5	23.7	0		-	19.6	67.9	12.4	0		-	45.3	6.8	47.9	0		-	45.2	9.6	45.2	0		-	
Totals %	3.7	25.3	9	0		38.1	4.9	17.1	3.1	0		25.2	6.4	1	6.7	0		14.1	10.2	2.2	10.2	0		22.7	
PHF	**0.65**	**0.85**	**0.65**	**0**		**0.77**	**0.68**	**0.91**	**0.93**	**0**		**0.89**	**0.78**	**0.5**	**0.78**	**0**		**0.84**	**0.64**	**0.41**	**0.97**	**0**		**0.84**	**0.92**
Cars	30	201	74	0		305	40	140	20	0		200	51	5	56	0		112	84	2	85	0		171	788
% Cars	96.8	95.7	98.7	0		96.5	97.6	98.6	76.9	0		95.7	96.2	62.5	100	0		95.7	98.8	11.1	100	0		91	94.9
Trucks	1	9	1	0		11	1	2	6	0		9	2	3	0	0		5	1	16	0	0		17	42
% Trucks	3.2	4.3	1.3	0		3.5	2.4	1.4	23.1	0		4.3	3.8	37.5	0	0		4.3	1.2	88.9	0	0		9	5.1
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					4	-					14	-					6	-					2	-	26
% Peds					15.4	-					53.8	-					23.1	-					7.7	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:30:00	From:	11:45:00
To:	13:30:00	To:	12:45:00

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Count Date: Mar 20, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Greenbank Rd runs N/S

North Approach

	Out	In	Total
Cars	195	204	399
Trucks	3	2	5
Bicycles	0	0	0
	198	206	404

Greenbank Rd

Bicycles	0	0	0	0
Trucks	0	2	1	0
Cars	61	115	19	0
Totals	61	117	20	0

Peds: 8

East Approach

	Out	In	Total
Cars	56	40	96
Trucks	6	8	14
Bicycles	0	0	0
	62	48	110

Kilbirnie Dr

			Totals
0	0	0	0
0	0	47	47
0	6	1	7
0	0	38	38

Peds: 1

Peds: 0

Kilbirnie Dr

Totals			
0	0	0	0
33	33	0	0
7	2	5	0
22	21	1	0

West Approach

	Out	In	Total
Cars	86	92	178
Trucks	6	5	11
Bicycles	0	0	0
	92	97	189

Totals	29	126	21	0
Cars	29	124	20	0
Trucks	0	2	1	0
Bicycles	0	0	0	0

Peds: 2

South Approach

	Out	In	Total
Cars	173	174	347
Trucks	3	3	6
Bicycles	0	0	0
	176	177	353

Greenbank Rd

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Count Date: Mar 20, 2024
Period: 11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Greenbank Rd						South Approach Greenbank Rd						East Approach Kilbirnie Dr						West Approach Kilbirnie Dr						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	3	31	16	0	0	50	5	27	7	0	1	39	9	1	7	0	0	17	9	3	10	0	0	22	128
12:00	6	33	16	0	2	55	12	32	4	0	0	48	5	1	11	0	0	17	16	1	10	0	0	27	147
12:15	8	28	21	0	1	57	7	36	5	0	1	48	4	3	5	0	0	12	11	1	7	0	0	19	136
12:30	3	25	8	0	5	36	5	31	5	0	0	41	4	2	10	0	0	16	11	2	11	0	1	24	117
Grand Total	**20**	**117**	**61**	**0**	**8**	**198**	**29**	**126**	**21**	**0**	**2**	**176**	**22**	**7**	**33**	**0**	**0**	**62**	**47**	**7**	**38**	**0**	**1**	**92**	**528**
Approach %	10.1	59.1	30.8	0		-	16.5	71.6	11.9	0		-	35.5	11.3	53.2	0		-	51.1	7.6	41.3	0		-	
Totals %	3.8	22.2	11.6	0		37.5	5.5	23.9	4	0		33.3	4.2	1.3	6.3	0		11.7	8.9	1.3	7.2	0		17.4	
PHF	**0.63**	**0.89**	**0.73**	**0**		**0.87**	**0.6**	**0.88**	**0.75**	**0**		**0.92**	**0.61**	**0.58**	**0.75**	**0**		**0.91**	**0.73**	**0.58**	**0.86**	**0**		**0.85**	**0.9**
Cars	19	115	61	0		195	29	124	20	0		173	21	2	33	0		56	47	1	38	0		86	510
% Cars	95	98.3	100	0		98.5	100	98.4	95.2	0		98.3	95.5	28.6	100	0		90.3	100	14.3	100	0		93.5	96.6
Trucks	1	2	0	0		3	0	2	1	0		3	1	5	0	0		6	0	6	0	0		6	18
% Trucks	5	1.7	0	0		1.5	0	1.6	4.8	0		1.7	4.5	71.4	0	0		9.7	0	85.7	0	0		6.5	3.4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					8	-					2	-					0	-					1	-	11
% Peds					72.7	-					18.2	-					0	-					9.1	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	15:00:00	From:	15:30:00
To:	18:00:00	To:	16:30:00

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Count Date: Mar 20, 2024

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Greenbank Rd runs N/S

North Approach

	Out	In	Total
Cars	404	338	742
Trucks	11	7	18
Bicycles	0	0	0
	415	345	760

Greenbank Rd

Bicycles	0	0	0	0
Trucks	3	7	1	0
Cars	114	229	59	2
Totals	117	236	60	2

Peds: 11

East Approach

	Out	In	Total
Cars	90	118	208
Trucks	23	7	30
Bicycles	0	0	0
	113	125	238

Kilbirnie Dr

Bicycles	Trucks	Cars	Totals	
0	0	0	0	
0	2	101	103	
0	4	11	15	
0	2	71	73	

Peds: 16

Peds: 5

Kilbirnie Dr

Totals	Cars	Trucks	Bicycles
0	0	0	0
36	35	1	0
39	21	18	0
38	34	4	0

Peds: 7

West Approach

	Out	In	Total
Cars	183	195	378
Trucks	8	23	31
Bicycles	0	0	0
	191	218	409

Greenbank Rd

Totals	62	204	50	0
Cars	60	200	48	0
Trucks	2	4	2	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	308	334	642
Trucks	8	13	21
Bicycles	0	0	0
	316	347	663

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Greenbank Rd & Kilbirnie Dr
Site Code: 2410400002
Count Date: Mar 20, 2024
Period: 15:00 - 18:00

Peak Hour Data (15:30 - 16:30)

Start Time	North Approach Greenbank Rd						South Approach Greenbank Rd						East Approach Kilbirnie Dr						West Approach Kilbirnie Dr						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:30	19	46	30	0	2	95	11	53	13	0	1	77	5	7	10	0	0	22	15	2	15	0	3	32	226
15:45	18	75	45	1	1	139	22	46	4	0	0	72	6	10	11	0	1	27	26	4	14	0	0	44	282
16:00	11	64	19	0	2	94	19	54	17	0	1	90	16	8	10	0	2	34	33	5	27	0	6	65	283
16:15	12	51	23	1	6	87	10	51	16	0	5	77	11	14	5	0	2	30	29	4	17	0	7	50	244
Grand Total	**60**	**236**	**117**	**2**	**11**	**415**	**62**	**204**	**50**	**0**	**7**	**316**	**38**	**39**	**36**	**0**	**5**	**113**	**103**	**15**	**73**	**0**	**16**	**191**	**1035**
Approach %	14.5	56.9	28.2	0.5		-	19.6	64.6	15.8	0		-	33.6	34.5	31.9	0		-	53.9	7.9	38.2	0		-	
Totals %	5.8	22.8	11.3	0.2		40.1	6	19.7	4.8	0		30.5	3.7	3.8	3.5	0		10.9	10	1.4	7.1	0		18.5	
PHF	**0.79**	**0.79**	**0.65**	**0.5**		**0.75**	**0.7**	**0.94**	**0.74**	**0**		**0.88**	**0.59**	**0.7**	**0.82**	**0**		**0.83**	**0.78**	**0.75**	**0.68**	**0**		**0.73**	**0.91**
Cars	59	229	114	2		404	60	200	48	0		308	34	21	35	0		90	101	11	71	0		183	985
% Cars	98.3	97	97.4	100		97.3	96.8	98	96	0		97.5	89.5	53.8	97.2	0		79.6	98.1	73.3	97.3	0		95.8	95.2
Trucks	1	7	3	0		11	2	4	2	0		8	4	18	1	0		23	2	4	2	0		8	50
% Trucks	1.7	3	2.6	0		2.7	3.2	2	4	0		2.5	10.5	46.2	2.8	0		20.4	1.9	26.7	2.7	0		4.2	4.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					7	-					5	-					16	-	39
% Peds					28.2	-					17.9	-					12.8	-					41	-	

5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
Full Length (7 AM-10 AM, 11:30 AM-1:30 PM, 3 PM-6 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

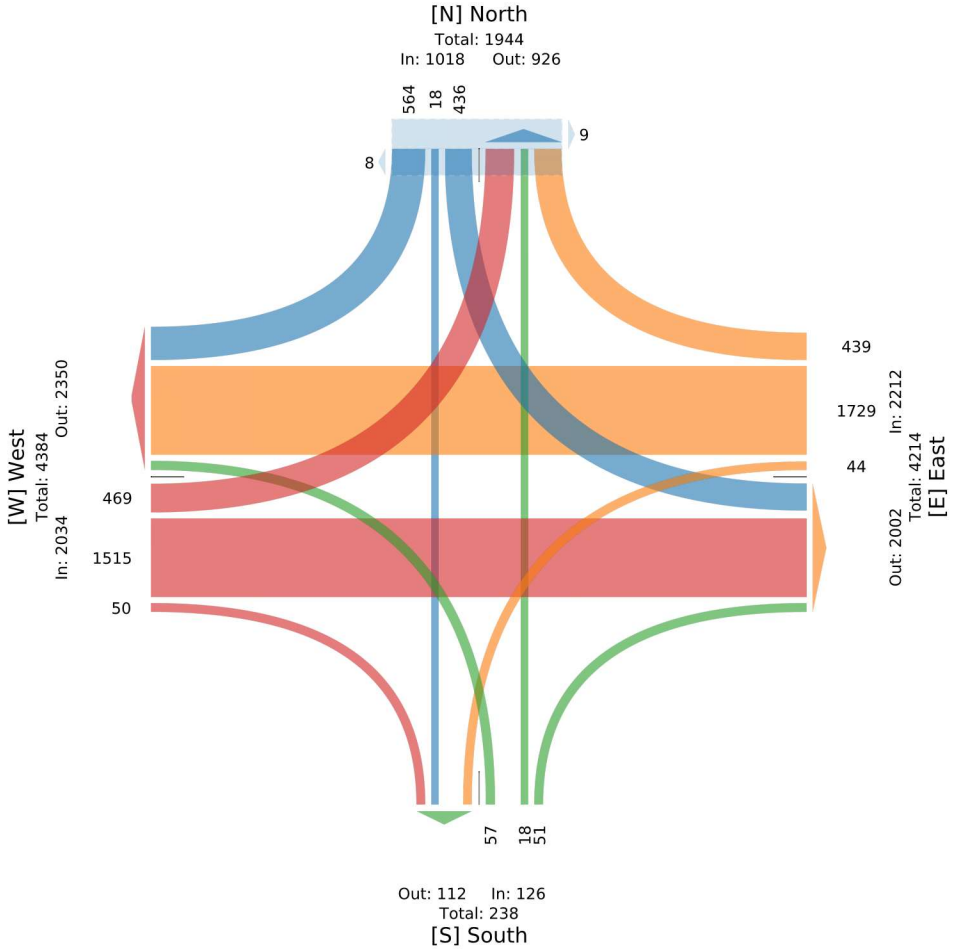
Leg Direction	South Northbound						North Southbound						West Eastbound						East Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-23 7:00AM	0	2	0	0	**2**	0	11	0	16	0	**27**	0	15	26	5	0	**46**	0	3	68	8	0	**79**	0	**154**
7:15AM	0	0	0	0	**0**	0	14	0	20	0	**34**	0	11	21	1	0	**33**	0	1	57	10	0	**68**	0	**135**
7:30AM	0	1	0	0	**1**	0	15	0	29	0	**44**	0	8	35	5	0	**48**	0	0	79	14	0	**93**	0	**186**
7:45AM	1	0	0	0	**1**	0	9	1	19	0	**29**	0	19	38	2	0	**59**	0	2	80	16	0	**98**	0	**187**
Hourly Total	1	3	0	0	**4**	0	49	1	84	0	**134**	0	53	120	13	0	**186**	0	6	284	48	0	**338**	0	**662**
8:00AM	1	1	0	0	**2**	0	19	0	23	0	**42**	1	23	55	1	0	**79**	0	1	70	11	0	**82**	0	**205**
8:15AM	0	0	1	0	**1**	0	11	1	24	0	**36**	3	13	41	2	0	**56**	0	4	79	11	0	**94**	0	**187**
8:30AM	1	0	0	0	**1**	0	24	0	25	0	**49**	2	18	36	1	0	**55**	0	2	78	14	0	**94**	0	**199**
8:45AM	1	1	0	0	**2**	0	22	0	28	0	**50**	3	10	28	4	0	**42**	0	5	68	11	0	**84**	0	**178**
Hourly Total	3	2	1	0	**6**	0	76	1	100	0	**177**	9	64	160	8	0	**232**	0	12	295	47	0	**354**	0	**769**
9:00AM	3	0	3	0	**6**	0	12	1	21	0	**34**	3	18	27	2	0	**47**	0	2	69	18	0	**89**	0	**176**
9:15AM	2	1	0	0	**3**	0	7	0	9	0	**16**	3	15	37	4	0	**56**	0	1	47	14	0	**62**	0	**137**
9:30AM	2	0	2	0	**4**	0	10	0	17	0	**27**	1	12	32	3	0	**47**	0	2	33	12	0	**47**	0	**125**
9:45AM	2	1	3	0	**6**	0	16	1	16	0	**33**	0	10	27	1	0	**38**	0	4	44	19	0	**67**	0	**144**
Hourly Total	9	2	8	0	**19**	0	45	2	63	0	**110**	7	55	123	10	0	**188**	0	9	193	63	0	**265**	0	**582**
11:30AM	0	1	3	0	**4**	0	9	0	14	0	**23**	0	7	29	0	0	**36**	0	2	40	11	0	**53**	0	**116**
11:45AM	2	1	4	0	7	0	14	1	9	0	**24**	0	13	27	0	0	**40**	0	2	54	11	0	**67**	0	**138**
Hourly Total	2	2	7	0	**11**	0	23	1	23	0	**47**	0	20	56	0	0	**76**	0	4	94	22	0	**120**	0	**254**
12:00PM	2	0	5	0	7	0	12	3	15	0	**30**	0	14	37	1	0	52	0	0	45	11	0	**56**	0	**145**
12:15PM	3	0	3	0	**6**	0	10	0	10	0	**20**	0	9	39	1	0	**49**	0	2	35	19	0	**56**	0	**131**
12:30PM	3	1	1	0	**5**	0	12	1	13	0	**26**	0	12	32	3	0	**47**	0	2	27	14	0	**43**	0	**121**
12:45PM	1	1	2	0	**4**	0	13	0	10	0	**23**	0	9	39	1	0	**49**	0	2	37	11	0	**50**	0	**126**
Hourly Total	9	2	11	0	**22**	0	47	4	48	0	**99**	0	44	147	6	0	**197**	0	6	144	55	0	**205**	0	**523**
1:00PM	0	1	1	0	**2**	0	13	2	14	0	**29**	0	8	28	3	0	**39**	0	1	38	13	0	**52**	0	**122**
1:15PM	4	1	3	0	**8**	0	8	0	11	0	**19**	0	10	45	5	0	**60**	0	1	40	10	0	**51**	0	**138**
Hourly Total	4	2	4	0	**10**	0	21	2	25	0	**48**	0	18	73	8	0	**99**	0	2	78	23	0	**103**	0	**260**
3:00PM	4	1	3	0	**8**	0	15	1	31	0	**47**	0	16	50	1	0	**67**	0	1	53	11	0	**65**	0	**187**
3:15PM	3	1	2	0	**6**	0	8	0	10	0	**18**	0	16	71	2	0	**89**	0	0	56	14	0	**70**	0	**183**
3:30PM	8	1	4	0	**13**	0	18	3	17	0	**38**	1	11	63	1	0	**75**	0	2	43	14	0	**59**	0	**185**
3:45PM	5	0	1	0	**6**	0	21	0	17	0	**38**	0	19	68	0	0	**87**	0	0	63	16	0	**79**	0	**210**
Hourly Total	20	3	10	0	**33**	0	62	4	75	0	**141**	1	62	252	4	0	**318**	0	3	215	55	0	**273**	0	**765**
4:00PM	1	0	2	0	**3**	0	20	0	14	0	**34**	0	19	80	0	0	**99**	0	0	56	17	0	**73**	0	**209**
4:15PM	2	0	0	0	**2**	0	17	0	16	0	**33**	0	16	68	0	0	**84**	0	0	55	22	0	**77**	0	**196**
4:30PM	2	0	5	0	**7**	0	14	2	21	0	**37**	0	26	70	0	0	**96**	0	0	62	18	0	**80**	0	**220**
4:45PM	2	1	0	0	**3**	0	14	0	19	0	**33**	0	16	74	0	0	**90**	0	0	59	11	0	**70**	0	**196**
Hourly Total	7	1	7	0	**15**	0	65	2	70	0	**137**	0	77	292	0	0	**369**	0	0	232	68	0	**300**	0	**821**
5:00PM	0	0	0	0	**0**	0	12	0	27	0	**39**	0	18	69	1	0	**88**	0	0	52	11	0	**63**	0	**190**
5:15PM	2	0	1	0	**3**	0	16	1	20	0	**37**	0	20	78	0	0	**98**	0	0	51	12	0	**63**	0	**201**
5:30PM	0	1	1	0	**2**	0	10	0	19	0	**29**	0	18	74	0	0	**92**	0	2	54	18	0	**74**	0	**197**
5:45PM	0	0	1	0	**1**	0	10	0	10	0	**20**	0	20	71	0	0	**91**	0	0	37	17	0	**54**	0	**166**
Hourly Total	2	1	3	0	**6**	0	48	1	76	0	**125**	0	76	292	1	0	**369**	0	2	194	58	0	**254**	0	**754**
Total	57	18	51	0	**126**	0	436	18	564	0	**1018**	17	469	1515	50	0	**2034**	0	44	1729	439	0	**2212**	0	**5390**
% Approach	45.2%	14.3%	40.5%	0%	-	-	42.8%	1.8%	55.4%	0%	-	-	23.1%	74.5%	2.5%	0%	-	-	2.0%	78.2%	19.8%	0%	-	-	-
% Total	1.1%	0.3%	0.9%	0%	**2.3%**	-	8.1%	0.3%	10.5%	0%	**18.9%**	-	8.7%	28.1%	0.9%	0%	**37.7%**	-	0.8%	32.1%	8.1%	0%	**41.0%**	-	-
Lights and Motorcycles	44	13	42	0	**99**	-	416	11	533	0	**960**	-	437	1467	40	0	**1944**	-	37	1669	411	0	**2117**	-	5120
% Lights and Motorcycles	77.2%	72.2%	82.4%	0%	**78.6%**	-	95.4%	61.1%	94.5%	0%	**94.3%**	-	93.2%	96.8%	80.0%	0%	**95.6%**	-	84.1%	96.5%	93.6%	0%	**95.7%**	-	95.0%
Heavy	13	4	9	0	**26**	-	20	5	31	0	**56**	-	32	48	10	0	**90**	-	7	59	28	0	**94**	-	266
% Heavy	22.8%	22.2%	17.6%	0%	**20.6%**	-	4.6%	27.8%	5.5%	0%	**5.5%**	-	6.8%	3.2%	20.0%	0%	**4.4%**	-	15.9%	3.4%	6.4%	0%	**4.2%**	-	4.9%
Bicycles on Road	0	1	0	0	**1**	-	0	2	0	0	**2**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	4
% Bicycles on Road	0%	5.6%	0%	0%	**0.8%**	-	0%	11.1%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	0%	0.1%	0%	0%	**0%**	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	17	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
Full Length (7 AM-10 AM, 11:30 AM-1:30 PM, 3 PM-6 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

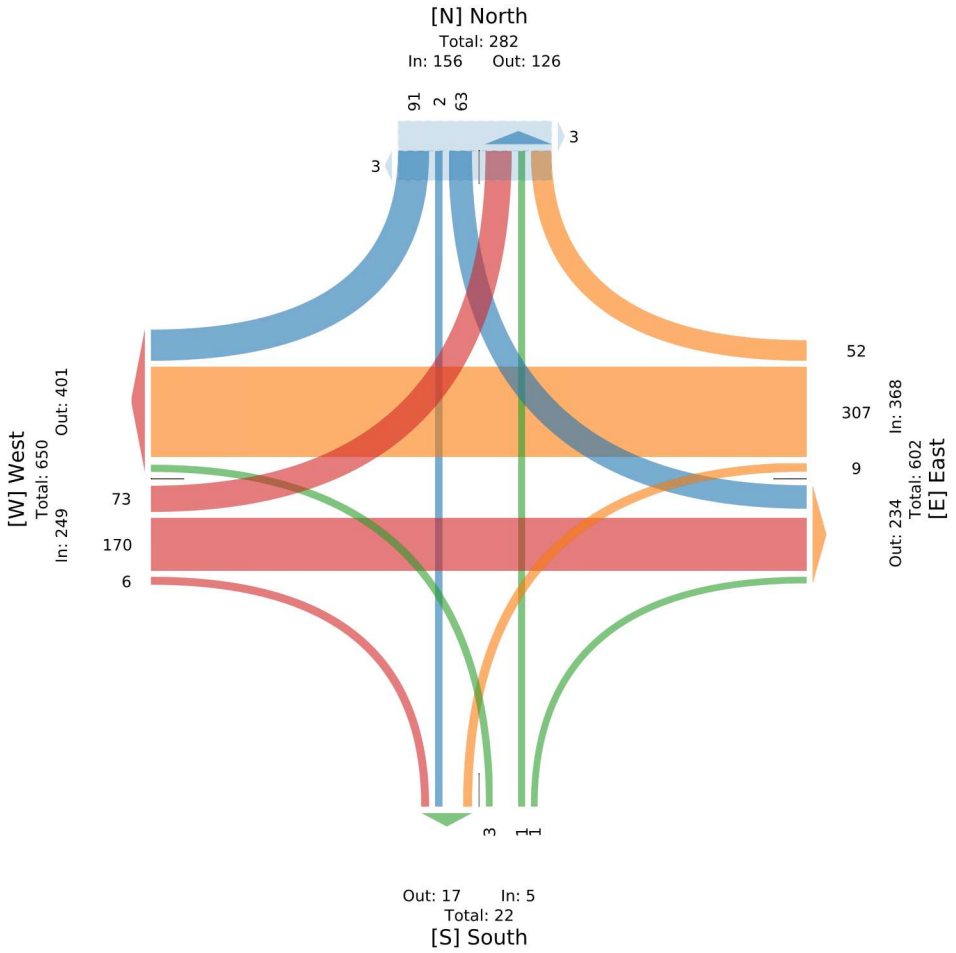
Leg / Direction	South Northbound						North Southbound						West Eastbound						East Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-23 7:45AM	1	0	0	0	**1**	0	9	1	19	0	**29**	0	19	38	2	0	**59**	0	2	80	16	0	**98**	0	**187**
8:00AM	1	1	0	0	**2**	0	19	0	23	0	**42**	1	23	55	1	0	**79**	0	1	70	11	0	**82**	0	**205**
8:15AM	0	0	1	0	**1**	0	11	1	24	0	**36**	3	13	41	2	0	**56**	0	4	79	11	0	**94**	0	**187**
8:30AM	1	0	0	0	**1**	0	24	0	25	0	**49**	2	18	36	1	0	**55**	0	2	78	14	0	**94**	0	**199**
Total	3	1	1	0	**5**	0	63	2	91	0	**156**	6	73	170	6	0	**249**	0	9	307	52	0	**368**	0	**778**
% Approach	60.0%	20.0%	20.0%	0%	-	-	40.4%	1.3%	58.3%	0%	-	-	29.3%	68.3%	2.4%	0%	-	-	2.4%	83.4%	14.1%	0%	-	-	-
% Total	0.4%	0.1%	0.1%	0%	**0.6%**	-	8.1%	0.3%	11.7%	0%	**20.1%**	-	9.4%	21.9%	0.8%	0%	**32.0%**	-	1.2%	39.5%	6.7%	0%	**47.3%**	-	-
PHF	0.750	0.250	0.250	-	**0.625**	-	0.656	0.500	0.910	-	**0.796**	-	0.793	0.773	0.750	-	**0.788**	-	0.563	0.956	0.813	-	**0.936**	-	0.948
Lights and Motorcycles	1	1	1	0	**3**	-	59	0	85	0	**144**	-	65	161	3	0	**229**	-	9	298	45	0	**352**	-	728
% Lights and Motorcycles	33.3%	100%	100%	0%	**60.0%**	-	93.7%	0%	93.4%	0%	**92.3%**	-	89.0%	94.7%	50.0%	0%	**92.0%**	-	100%	97.1%	86.5%	0%	**95.7%**	-	93.6%
Heavy	2	0	0	0	**2**	-	4	2	6	0	**12**	-	8	9	3	0	**20**	-	0	8	7	0	**15**	-	49
% Heavy	66.7%	0%	0%	0%	**40.0%**	-	6.3%	100%	6.6%	0%	**7.7%**	-	11.0%	5.3%	50.0%	0%	**8.0%**	-	0%	2.6%	13.5%	0%	**4.1%**	-	6.3%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	**1**
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0.3%	0%	0%	**0.3%**	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

Leg / Direction	South Northbound						North Southbound						West Eastbound						East Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-23 11:45AM	2	1	4	0	7	0	14	1	9	0	**24**	0	13	27	0	0	**40**	0	2	54	11	0	**67**	0	**138**
12:00PM	2	0	5	0	**7**	0	12	3	15	0	**30**	0	14	37	1	0	**52**	0	0	45	11	0	**56**	0	**145**
12:15PM	3	0	3	0	**6**	0	10	0	10	0	**20**	0	9	39	1	0	**49**	0	2	35	19	0	**56**	0	**131**
12:30PM	3	1	1	0	**5**	0	12	1	13	0	**26**	0	12	32	3	0	**47**	0	2	27	14	0	**43**	0	**121**
Total	10	2	13	0	**25**	0	48	5	47	0	**100**	0	48	135	5	0	**188**	0	6	161	55	0	**222**	0	**535**
% Approach	40.0%	8.0%	52.0%	0%	-	-	48.0%	5.0%	47.0%	0%	-	-	25.5%	71.8%	2.7%	0%	-	-	2.7%	72.5%	24.8%	0%	-	-	-
% Total	1.9%	0.4%	2.4%	0%	**4.7%**	-	9.0%	0.9%	8.8%	0%	**18.7%**	-	9.0%	25.2%	0.9%	0%	**35.1%**	-	1.1%	30.1%	10.3%	0%	**41.5%**	-	-
PHF	0.833	0.500	0.650	-	**0.893**	-	0.857	0.417	0.783	-	**0.833**	-	0.857	0.865	0.417	-	**0.904**	-	0.750	0.745	0.724	-	**0.828**	-	0.922
Lights and Motorcycles	7	2	9	0	**18**	-	43	5	43	0	**91**	-	45	131	3	0	**179**	-	4	151	51	0	**206**	-	494
% Lights and Motorcycles	70.0%	100%	69.2%	0%	**72.0%**	-	89.6%	100%	91.5%	0%	**91.0%**	-	93.8%	97.0%	60.0%	0%	**95.2%**	-	66.7%	93.8%	92.7%	0%	**92.8%**	-	92.3%
Heavy	3	0	4	0	**7**	-	5	0	4	0	**9**	-	3	4	2	0	**9**	-	2	10	4	0	**16**	-	41
% Heavy	30.0%	0%	30.8%	0%	**28.0%**	-	10.4%	0%	8.5%	0%	**9.0%**	-	6.3%	3.0%	40.0%	0%	**4.8%**	-	33.3%	6.2%	7.3%	0%	**7.2%**	-	7.7%
Bicycles on Road	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
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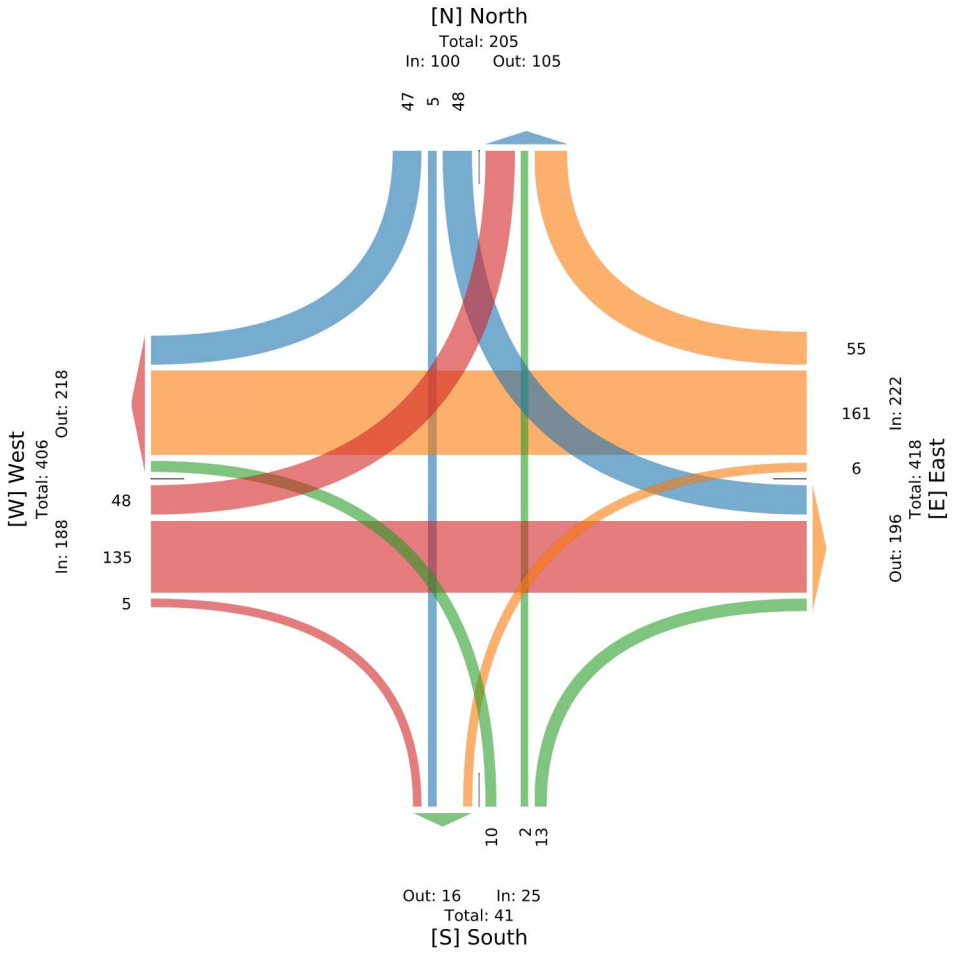


5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

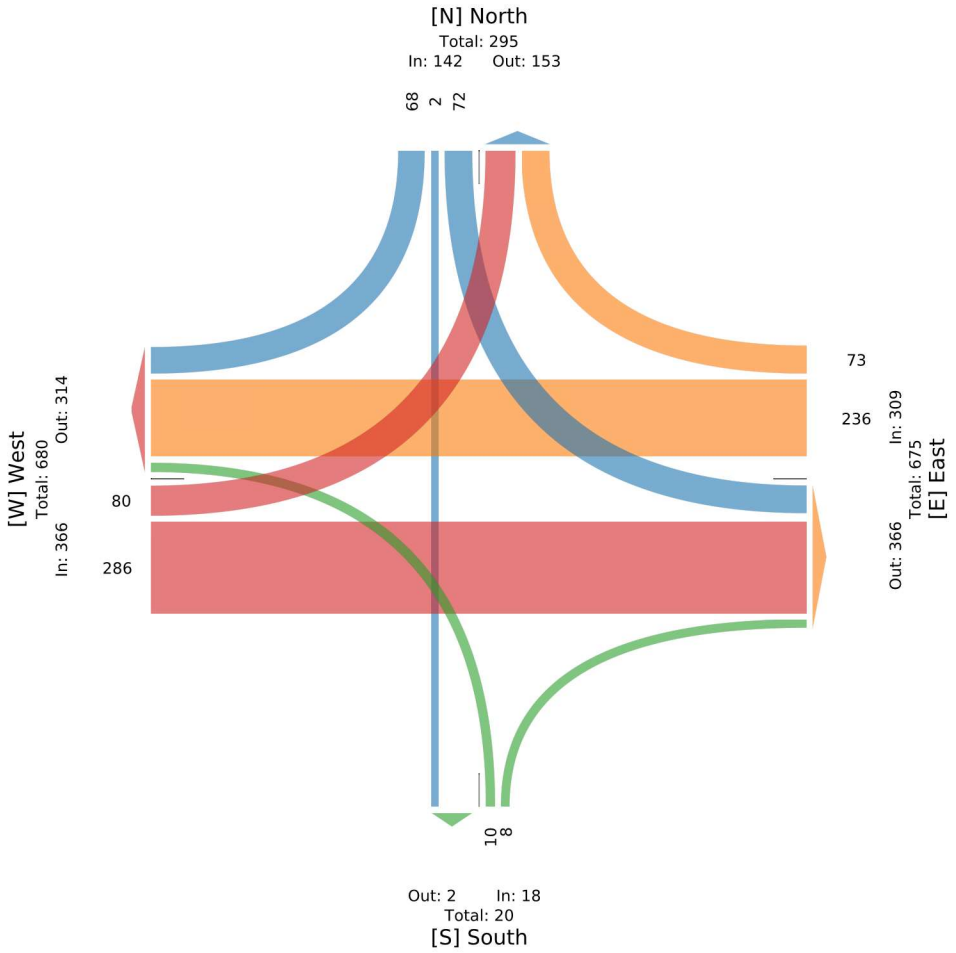
Leg / Direction	South Northbound						North Southbound						West Eastbound						East Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-23 3:45PM	5	0	1	0	**6**	0	21	0	17	0	**38**	0	19	68	0	0	**87**	0	0	63	16	0	**79**	0	**210**
4:00PM	1	0	2	0	**3**	0	20	0	14	0	**34**	0	19	80	0	0	**99**	0	0	56	17	0	**73**	0	**209**
4:15PM	2	0	0	0	**2**	0	17	0	16	0	**33**	0	16	68	0	0	**84**	0	0	55	22	0	**77**	0	**196**
4:30PM	2	0	5	0	**7**	0	14	2	21	0	**37**	0	26	70	0	0	**96**	0	0	62	18	0	**80**	0	**220**
Total	10	0	8	0	**18**	0	72	2	68	0	**142**	0	80	286	0	0	**366**	0	0	236	73	0	**309**	0	**835**
% Approach	55.6%	0%	44.4%	0%	–	-	50.7%	1.4%	47.9%	0%	–	-	21.9%	78.1%	0%	0%	–	-	0%	76.4%	23.6%	0%	-	-	-
% Total	1.2%	0%	1.0%	0%	**2.2%**	-	8.6%	0.2%	8.1%	0%	**17.0%**	-	9.6%	34.3%	0%	0%	**43.8%**	-	0%	28.3%	8.7%	0%	**37.0%**	-	-
PHF	0.500	-	0.400	-	**0.643**	-	0.857	0.250	0.810	-	**0.928**	-	0.769	0.894	-	-	**0.924**	-	-	0.937	0.830	-	**0.966**	-	0.952
Lights and Motorcycles	9	0	8	0	**17**	-	72	1	66	0	**139**	-	78	280	0	0	**358**	-	0	230	70	0	**300**	-	814
% Lights and Motorcycles	90.0%	0%	100%	0%	**94.4%**	-	100%	50.0%	97.1%	0%	**97.9%**	-	97.5%	97.9%	0%	0%	**97.8%**	-	0%	97.5%	95.9%	0%	**97.1%**	-	97.5%
Heavy	1	0	0	0	**1**	-	0	0	2	0	**2**	-	2	6	0	0	**8**	-	0	6	3	0	**9**	-	20
% Heavy	10.0%	0%	0%	0%	**5.6%**	-	0%	0%	2.9%	0%	**1.4%**	-	2.5%	2.1%	0%	0%	**2.2%**	-	0%	2.5%	4.1%	0%	**2.9%**	-	2.4%
Bicycles on Road	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1
% Bicycles on Road	0%	0%	0%	0%	**0%**	-	0%	50.0%	0%	0%	**0.7%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5562791 - COVID - CAMBRIAN RD @ APOLUNE ST ... - TMC

Wed Mar 23, 2022
PM Peak (3:45 PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 932641, Location: 45.246542, -75.752395, Site Code: 40238103

Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #24-105 - CGH Transportation

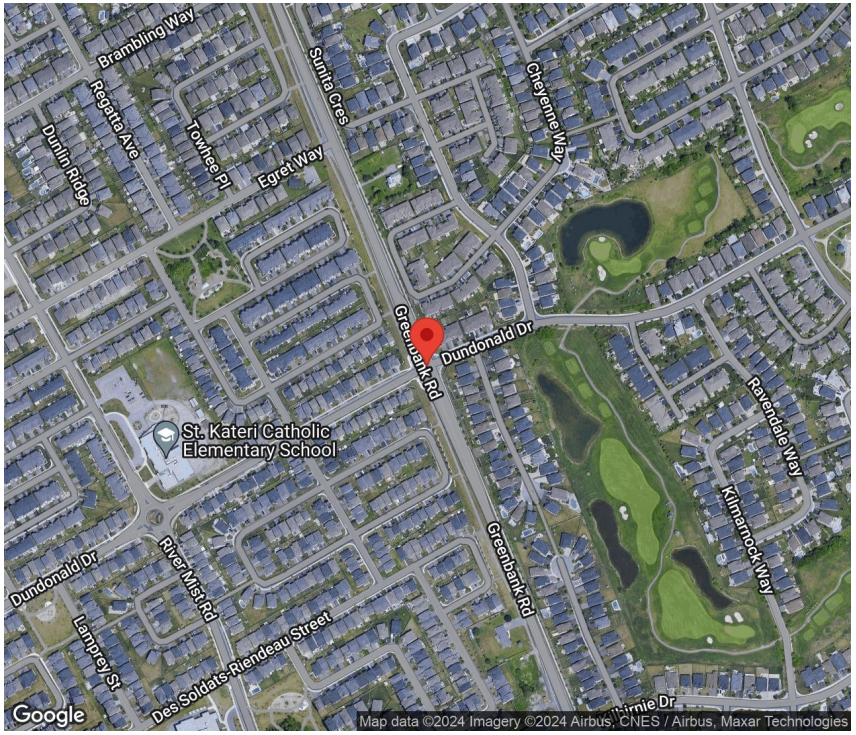
Intersection Count Report

Intersection:	Greenbank Rd & Dundonald Dr
Municipality:	Ottawa
Count Date:	Wednesday, Mar 20, 2024
Site Code:	2410400001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-10:00, 11:30-13:30, 15:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Greenbank Rd & Dundonald Dr
Site Code:	2410400001
Municipality:	Ottawa
Count Date:	Mar 20, 2024



Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

Greenbank Rd - Traffic Summary

Hour	North Approach Totals (Includes Cars, Trucks, Bicycles)						South Approach Totals (Includes Cars, Trucks, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	12	106	41	0	159	1	28	176	4	0	208	0	367
08:00 - 09:00	21	170	66	0	257	3	46	216	15	1	278	1	535
09:00 - 10:00	34	159	70	0	263	8	38	193	10	0	241	6	504
BREAK													
11:30 - 12:00	9	70	19	0	98	0	4	83	3	0	90	0	188
12:00 - 13:00	28	149	61	0	238	4	18	175	11	1	205	6	443
13:00 - 13:30	12	77	26	0	115	2	6	55	5	1	67	2	182
BREAK													
15:00 - 16:00	48	297	104	0	449	10	57	219	16	1	293	1	742
16:00 - 17:00	49	281	107	0	437	8	72	248	29	0	349	6	786
17:00 - 18:00	39	276	123	0	438	1	66	258	18	2	344	3	782
GRAND TOTAL	252	1585	617	0	2454	37	335	1623	111	6	2075	25	4529

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Summary

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

Dundonald Dr - Traffic Summary

Hour	East Approach Totals (Includes Cars, Trucks, Bicycles)						West Approach Totals (Includes Cars, Trucks, Bicycles)						Total
	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	
07:00 - 08:00	17	14	31	0	62	1	89	15	74	0	178	2	240
08:00 - 09:00	28	26	53	0	107	3	84	26	82	0	192	4	299
09:00 - 10:00	22	25	57	0	104	3	93	22	76	0	191	3	295
BREAK													
11:30 - 12:00	3	3	19	0	25	1	28	8	12	0	48	7	73
12:00 - 13:00	17	10	34	0	61	5	69	5	29	0	103	10	164
13:00 - 13:30	1	7	16	0	24	3	24	6	11	0	41	8	65
BREAK													
15:00 - 16:00	15	38	45	0	98	1	88	31	67	0	186	5	284
16:00 - 17:00	21	36	47	0	104	9	115	29	60	0	204	4	308
17:00 - 18:00	7	31	43	0	81	4	94	23	31	0	148	14	229
GRAND TOTAL	131	190	345	0	666	30	684	165	442	0	1291	57	1957

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

North Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
07:00	2	21	6	0	29	0	0	0	0	0	0	0	0	0	0	0
07:15	5	19	11	0	35	1	0	0	0	1	0	0	0	0	0	0
07:30	3	28	10	0	41	0	1	0	0	1	0	0	0	0	0	0
07:45	1	36	14	0	51	0	1	0	0	1	0	0	0	0	0	1
08:00	2	41	18	0	61	1	1	1	0	3	0	0	0	0	0	0
08:15	0	35	12	0	47	0	2	0	0	2	0	0	0	0	0	0
08:30	8	40	16	0	64	1	0	0	0	1	0	0	0	0	0	0
08:45	8	49	19	0	76	1	2	0	0	3	0	0	0	0	0	3
09:00	23	54	25	0	102	0	1	0	0	1	0	0	0	0	0	6
09:15	4	38	19	0	61	0	0	1	0	1	0	0	0	0	0	2
09:30	4	29	14	0	47	0	3	0	0	3	0	0	0	0	0	0
09:45	3	33	11	0	47	0	1	0	0	1	0	0	0	0	0	0
SUBTOTAL	63	423	175	0	661	4	12	2	0	18	0	0	0	0	0	12

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

North Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	↰	↑	↱	↩	Total	
11:30	5	28	11	0	44	0	1	0	0	1	0	0	0	0	0	0
11:45	4	41	8	0	53	0	0	0	0	0	0	0	0	0	0	0
12:00	5	33	10	0	48	0	0	0	0	0	0	0	0	0	0	0
12:15	13	47	21	0	81	0	1	0	0	1	0	0	0	0	0	1
12:30	5	25	20	0	50	0	0	0	0	0	0	0	0	0	0	3
12:45	5	42	9	0	56	0	1	1	0	2	0	0	0	0	0	0
13:00	4	43	10	0	57	0	0	0	0	0	0	0	0	0	0	2
13:15	7	34	14	0	55	1	0	2	0	3	0	0	0	0	0	0
SUBTOTAL	48	293	103	0	444	1	3	3	0	7	0	0	0	0	0	6

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

North Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	9	53	22	0	84	0	0	0	0	0	0	0	0	0	0	0
15:15	7	67	22	0	96	0	1	0	0	1	0	0	0	0	0	0
15:30	17	80	29	0	126	0	3	2	0	5	0	0	0	0	0	5
15:45	15	91	28	0	134	0	2	1	0	3	0	0	0	0	0	5
16:00	7	72	24	0	103	0	1	0	0	1	0	0	0	0	0	4
16:15	12	66	25	0	103	0	3	0	0	3	0	0	0	0	0	0
16:30	11	57	35	0	103	0	0	0	0	0	0	0	0	0	0	4
16:45	19	82	23	0	124	0	0	0	0	0	0	0	0	0	0	0
17:00	7	69	29	0	105	0	0	0	0	0	0	0	0	0	0	0
17:15	8	71	37	0	116	0	2	0	0	2	0	0	0	0	0	0
17:30	12	81	29	0	122	0	0	0	0	0	0	0	0	0	0	0
17:45	12	53	28	0	93	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	136	842	331	0	1309	0	12	3	0	15	0	0	0	0	0	19
GRAND TOTAL	247	1558	609	0	2414	5	27	8	0	40	0	0	0	0	0	37

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

South Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	2	38	2	0	42	0	0	0	0	0	0	0	0	0	0	0
07:15	6	43	1	0	50	2	2	0	0	4	0	0	0	0	0	0
07:30	6	42	1	0	49	0	4	0	0	4	0	0	0	0	0	0
07:45	12	47	0	0	59	0	0	0	0	0	0	0	0	0	0	0
08:00	8	54	3	0	65	1	1	2	0	4	0	0	0	0	0	0
08:15	6	48	3	0	57	0	1	0	0	1	0	0	0	0	0	0
08:30	16	53	4	0	73	0	0	0	0	0	0	0	0	0	0	1
08:45	15	59	3	1	78	0	0	0	0	0	0	0	0	0	0	0
09:00	19	52	2	0	73	1	1	0	0	2	0	0	0	0	0	5
09:15	9	50	3	0	62	1	3	0	0	4	0	0	0	0	0	0
09:30	5	37	4	0	46	1	0	0	0	1	0	0	0	0	0	1
09:45	1	49	1	0	51	1	1	0	0	2	0	0	0	0	0	0
SUBTOTAL	105	572	27	1	705	7	13	2	0	22	0	0	0	0	0	7

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

South Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
11:30	2	43	2	0	47	0	0	0	0	0	0	0	0	0	0	0
11:45	2	39	1	0	42	0	1	0	0	1	0	0	0	0	0	0
12:00	5	50	3	1	59	0	0	0	0	0	0	0	0	0	0	0
12:15	7	40	4	0	51	1	1	0	0	2	0	0	0	0	0	2
12:30	2	48	1	0	51	0	0	0	0	0	0	0	0	0	0	2
12:45	3	35	3	0	41	0	1	0	0	1	0	0	0	0	0	2
13:00	3	30	1	0	34	0	0	0	0	0	0	0	0	0	0	2
13:15	3	25	4	1	33	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	27	310	19	2	358	1	3	0	0	4	0	0	0	0	0	8

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

South Approach - Greenbank Rd

Start Time	Cars					Trucks					Bicycles					Total Peds
					Total					Total					Total	
15:00	7	53	2	0	62	0	0	0	0	0	0	0	0	0	0	1
15:15	13	53	2	1	69	0	0	0	0	0	0	0	0	0	0	0
15:30	18	50	7	0	75	2	1	0	0	3	0	0	0	0	0	0
15:45	16	61	5	0	82	1	1	0	0	2	0	0	0	0	0	0
16:00	22	68	6	0	96	0	1	0	0	1	0	0	0	0	0	0
16:15	15	62	8	0	85	0	1	0	0	1	0	0	0	0	0	1
16:30	17	57	5	0	79	0	2	0	0	2	0	0	0	0	0	1
16:45	18	56	10	0	84	0	1	0	0	1	0	0	0	0	0	4
17:00	7	67	5	0	79	0	1	0	0	1	0	0	0	0	0	0
17:15	20	53	8	1	82	0	0	0	0	0	0	0	0	0	0	1
17:30	18	65	3	0	86	0	0	0	0	0	0	0	0	0	0	1
17:45	21	72	2	1	96	0	0	0	0	0	0	0	0	0	0	1
SUBTOTAL	192	717	63	3	975	3	8	0	0	11	0	0	0	0	0	10
GRAND TOTAL	**324**	**1599**	**109**	**6**	**2038**	**11**	**24**	**2**	**0**	**37**	**0**	**0**	**0**	**0**	**0**	**25**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

East Approach - Dundonald Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	5	1	7	0	13	1	0	0	0	1	0	0	0	0	0	0
07:15	4	6	7	0	17	0	0	0	0	0	0	0	0	0	0	0
07:30	3	2	9	0	14	0	0	0	0	0	0	0	0	0	0	0
07:45	4	5	8	0	17	0	0	0	0	0	0	0	0	0	0	1
08:00	7	7	11	0	25	0	0	0	0	0	0	0	0	0	0	0
08:15	6	6	14	0	26	1	0	0	0	1	0	0	0	0	0	1
08:30	5	5	8	0	18	0	1	0	0	1	0	0	0	0	0	0
08:45	8	6	20	0	34	1	1	0	0	2	0	0	0	0	0	2
09:00	7	14	29	0	50	0	1	0	0	1	0	0	0	0	0	1
09:15	5	3	11	0	19	0	1	0	0	1	0	0	0	0	0	0
09:30	5	1	6	0	12	0	0	0	0	0	0	0	0	0	0	2
09:45	4	5	11	0	20	1	0	0	0	1	0	0	0	0	0	0
SUBTOTAL	63	61	141	0	265	4	4	0	0	8	0	0	0	0	0	7

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

East Approach - Dundonald Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	1	1	9	0	11	0	0	0	0	0	0	0	0	0	0	0
11:45	1	2	10	0	13	1	0	0	0	1	0	0	0	0	0	1
12:00	11	1	10	0	22	0	0	0	0	0	0	0	0	0	0	1
12:15	2	2	6	0	10	0	0	0	0	0	0	0	0	0	0	3
12:30	3	5	8	0	16	0	0	0	0	0	0	0	0	0	0	1
12:45	1	2	10	0	13	0	0	0	0	0	0	0	0	0	0	0
13:00	1	5	11	0	17	0	0	0	0	0	0	0	0	0	0	3
13:15	0	2	5	0	7	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	20	20	69	0	109	1	0	0	0	1	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

East Approach - Dundonald Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	1	10	9	0	20	0	0	0	0	0	0	0	0	0	0	0
15:15	5	8	12	0	25	1	1	0	0	2	0	0	0	0	0	0
15:30	1	12	20	0	33	0	0	0	0	0	0	0	0	0	0	0
15:45	6	7	4	0	17	1	0	0	0	1	0	0	0	0	0	1
16:00	2	15	14	0	31	0	0	0	0	0	0	0	0	0	0	1
16:15	3	7	17	0	27	0	0	1	0	1	0	0	0	0	0	2
16:30	6	4	3	0	13	1	0	0	0	1	0	0	0	0	0	2
16:45	9	10	12	0	31	0	0	0	0	0	0	0	0	0	0	4
17:00	2	5	12	0	19	0	0	0	0	0	0	0	0	0	0	1
17:15	3	8	9	0	20	0	0	0	0	0	0	0	0	0	0	1
17:30	1	8	12	0	21	0	0	0	0	0	0	0	0	0	0	0
17:45	1	10	10	0	21	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	40	104	134	0	278	3	1	1	0	5	0	0	0	0	0	14
GRAND TOTAL	123	185	344	0	652	8	5	1	0	14	0	0	0	0	0	30

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

West Approach - Dundonald Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
07:00	15	4	17	0	36	0	0	0	0	0	0	0	0	0	0	1
07:15	18	4	22	0	44	1	0	0	0	1	0	0	0	0	0	1
07:30	30	1	20	0	51	1	0	0	0	1	0	0	0	0	0	0
07:45	24	6	13	0	43	0	0	2	0	2	0	0	0	0	0	0
08:00	19	8	19	0	46	0	0	0	0	0	0	0	0	0	0	1
08:15	25	8	22	0	55	0	0	0	0	0	0	0	0	0	0	0
08:30	18	7	22	0	47	0	0	0	0	0	0	0	0	0	0	1
08:45	22	3	19	0	44	0	0	0	0	0	0	0	0	0	0	2
09:00	44	8	37	0	89	0	0	4	0	4	0	0	0	0	0	1
09:15	27	5	21	0	53	1	0	0	0	1	0	0	0	0	0	2
09:30	9	5	8	0	22	0	0	0	0	0	0	0	0	0	0	0
09:45	12	4	6	0	22	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	263	63	226	0	552	3	0	6	0	9	0	0	0	0	0	9

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

West Approach - Dundonald Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
11:30	16	4	5	0	25	0	0	0	0	0	0	0	0	0	0	3
11:45	12	4	6	0	22	0	0	1	0	1	0	0	0	0	0	4
12:00	20	0	10	0	30	0	0	0	0	0	0	0	0	0	0	2
12:15	18	2	8	0	28	1	0	0	0	1	0	0	0	0	0	3
12:30	15	1	8	0	24	0	0	0	0	0	0	0	0	0	0	2
12:45	15	2	3	0	20	0	0	0	0	0	0	0	0	0	0	3
13:00	9	4	4	0	17	0	0	0	0	0	0	0	0	0	0	7
13:15	15	1	6	0	22	0	1	1	0	2	0	0	0	0	0	1
SUBTOTAL	120	18	50	0	188	1	1	2	0	4	0	0	0	0	0	25

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Data

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Municipality: Ottawa
Count Date: Mar 20, 2024

West Approach - Dundonald Dr

Start Time	Cars					Trucks					Bicycles					Total Peds
	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	↰	↑	↱	↶	Total	
15:00	19	4	8	0	31	0	0	0	0	0	0	0	0	0	0	2
15:15	15	1	8	0	24	0	0	0	0	0	0	0	0	0	0	0
15:30	25	9	12	0	46	0	0	0	0	0	0	0	0	0	0	2
15:45	29	15	38	0	82	0	2	1	0	3	0	0	0	0	0	1
16:00	33	7	19	0	59	0	2	0	0	2	0	0	0	0	0	0
16:15	29	8	14	0	51	1	2	0	0	3	0	0	0	0	0	0
16:30	28	3	8	0	39	0	0	0	0	0	0	0	0	0	0	4
16:45	24	7	19	0	50	0	0	0	0	0	0	0	0	0	0	0
17:00	22	4	6	0	32	0	0	0	0	0	0	0	0	0	0	3
17:15	22	4	11	0	37	0	0	0	0	0	0	0	0	0	0	6
17:30	26	8	9	0	43	0	1	0	0	1	0	0	0	0	0	3
17:45	24	6	5	0	35	0	0	0	0	0	0	0	0	0	0	2
SUBTOTAL	296	76	157	0	529	1	7	1	0	9	0	0	0	0	0	23
GRAND TOTAL	**679**	**157**	**433**	**0**	**1269**	**5**	**8**	**9**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**57**

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:30:00
To:	10:00:00	To:	09:30:00

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Count Date: Mar 20, 2024

Weather conditions: Clear

**** Signalized Intersection **** **Major Road:** Greenbank Rd runs N/S

North Approach

	Out	In	Total
Cars	303	393	696
Trucks	6	5	11
Bicycles	0	0	0
	309	398	707

Greenbank Rd

Bicycles	0	0	0	0
Trucks	1	3	2	0
Cars	79	181	43	0
Totals	80	184	45	0

Peds: 11

East Approach

	Out	In	Total
Cars	121	78	199
Trucks	5	2	7
Bicycles	0	0	0
	126	80	206

Dundonald Dr

			Totals	
0	0	0	0	
0	1	111	112	
0	0	23	23	
0	4	99	103	

Peds: 6

Peds: 3

Dundonald Dr

Totals			
0	0	0	0
68	68	0	0
32	28	4	0
26	25	1	0

West Approach

	Out	In	Total
Cars	233	166	399
Trucks	5	7	12
Bicycles	0	0	0
	238	173	411

Greenbank Rd

Totals	61	218	12	1
Cars	59	214	12	1
Trucks	2	4	0	0
Bicycles	0	0	0	0

Peds: 6

South Approach

	Out	In	Total
Cars	286	306	592
Trucks	6	8	14
Bicycles	0	0	0
	292	314	606

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Count Date: Mar 20, 2024
Period: 07:00 - 10:00

Peak Hour Data (08:30 - 09:30)

Start Time	North Approach Greenbank Rd						South Approach Greenbank Rd						East Approach Dundonald Dr						West Approach Dundonald Dr						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:30	9	40	16	0	0	65	16	53	4	0	1	73	5	6	8	0	0	19	18	7	22	0	1	47	204
08:45	9	51	19	0	3	79	15	59	3	1	0	78	9	7	20	0	2	36	22	3	19	0	2	44	237
09:00	23	55	25	0	6	103	20	53	2	0	5	75	7	15	29	0	1	51	44	8	41	0	1	93	322
09:15	4	38	20	0	2	62	10	53	3	0	0	66	5	4	11	0	0	20	28	5	21	0	2	54	202
Grand Total	**45**	**184**	**80**	**0**	**11**	**309**	**61**	**218**	**12**	**1**	**6**	**292**	**26**	**32**	**68**	**0**	**3**	**126**	**112**	**23**	**103**	**0**	**6**	**238**	**965**
Approach %	14.6	59.5	25.9	0		-	20.9	74.7	4.1	0.3		-	20.6	25.4	54	0		-	47.1	9.7	43.3	0		-	
Totals %	4.7	19.1	8.3	0		32	6.3	22.6	1.2	0.1		30.3	2.7	3.3	7	0		13.1	11.6	2.4	10.7	0		24.7	
PHF	**0.49**	**0.84**	**0.8**	**0**		**0.75**	**0.76**	**0.92**	**0.75**	**0.25**		**0.94**	**0.72**	**0.53**	**0.59**	**0**		**0.62**	**0.64**	**0.72**	**0.63**	**0**		**0.64**	**0.75**
Cars	43	181	79	0		303	59	214	12	1		286	25	28	68	0		121	111	23	99	0		233	943
% Cars	95.6	98.4	98.8	0		98.1	96.7	98.2	100	100		97.9	96.2	87.5	100	0		96	99.1	100	96.1	0		97.9	97.7
Trucks	2	3	1	0		6	2	4	0	0		6	1	4	0	0		5	1	0	4	0		5	22
% Trucks	4.4	1.6	1.3	0		1.9	3.3	1.8	0	0		2.1	3.8	12.5	0	0		4	0.9	0	3.9	0		2.1	2.3
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					11	-					6	-					3	-					6	-	26
% Peds					42.3	-					23.1	-					11.5	-					23.1	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:30:00	From:	11:45:00
To:	13:30:00	To:	12:45:00

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Count Date: Mar 20, 2024

Weather conditions: Clear

**** Signalized Intersection **** **Major Road:** Greenbank Rd runs N/S

North Approach

	Out	In	Total
Cars	232	276	508
Trucks	1	3	4
Bicycles	0	0	0
	233	279	512

Greenbank Rd

Bicycles	0	0	0	0
Trucks	0	1	0	0
Cars	59	146	27	0
Totals	59	147	27	0

Peds: 4

East Approach

	Out	In	Total
Cars	61	43	104
Trucks	1	0	1
Bicycles	0	0	0
	62	43	105

Dundonald Dr

Bicycles	Trucks	Cars	Totals	
0	0	0	0	
0	1	65	66	
0	0	7	7	
0	1	32	33	

Peds: 11

Peds: 6

Dundonald Dr

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	34	34	0	0
	10	10	0	0
	18	17	1	0

Peds: 4

West Approach

	Out	In	Total
Cars	104	85	189
Trucks	2	1	3
Bicycles	0	0	0
	106	86	192

Greenbank Rd

Totals	17	179	9	1
Cars	16	177	9	1
Trucks	1	2	0	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	203	196	399
Trucks	3	3	6
Bicycles	0	0	0
	206	199	405

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Count Date: Mar 20, 2024
Period: 11:30 - 13:30

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Greenbank Rd						South Approach Greenbank Rd						East Approach Dundonald Dr						West Approach Dundonald Dr						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	4	41	8	0	0	53	2	40	1	0	0	43	2	2	10	0	1	14	12	4	7	0	4	23	133
12:00	5	33	10	0	0	48	5	50	3	1	0	59	11	1	10	0	1	22	20	0	10	0	2	30	159
12:15	13	48	21	0	1	82	8	41	4	0	2	53	2	2	6	0	3	10	19	2	8	0	3	29	174
12:30	5	25	20	0	3	50	2	48	1	0	2	51	3	5	8	0	1	16	15	1	8	0	2	24	141
Grand Total	**27**	**147**	**59**	**0**	**4**	**233**	**17**	**179**	**9**	**1**	**4**	**206**	**18**	**10**	**34**	**0**	**6**	**62**	**66**	**7**	**33**	**0**	**11**	**106**	**607**
Approach %	11.6	63.1	25.3	0		-	8.3	86.9	4.4	0.5		-	29	16.1	54.8	0		-	62.3	6.6	31.1	0		-	
Totals %	4.4	24.2	9.7	0		38.4	2.8	29.5	1.5	0.2		33.9	3	1.6	5.6	0		10.2	10.9	1.2	5.4	0		17.5	
PHF	**0.52**	**0.77**	**0.7**	**0**		**0.71**	**0.53**	**0.9**	**0.56**	**0.25**		**0.87**	**0.41**	**0.5**	**0.85**	**0**		**0.7**	**0.83**	**0.44**	**0.83**	**0**		**0.88**	**0.87**
Cars	27	146	59	0		232	16	177	9	1		203	17	10	34	0		61	65	7	32	0		104	600
% Cars	100	99.3	100	0		99.6	94.1	98.9	100	100		98.5	94.4	100	100	0		98.4	98.5	100	97	0		98.1	98.8
Trucks	0	1	0	0		1	1	2	0	0		3	1	0	0	0		1	1	0	1	0		2	7
% Trucks	0	0.7	0	0		0.4	5.9	1.1	0	0		1.5	5.6	0	0	0		1.6	1.5	0	3	0		1.9	1.2
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					4	-					4	-					6	-					11	-	25
% Peds					16	-					16	-					24	-					44	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	15:00:00	From:	15:30:00
To:	18:00:00	To:	16:30:00

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Count Date: Mar 20, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Greenbank Rd runs N/S

North Approach

	Out	In	Total
Cars	466	412	878
Trucks	12	6	18
Bicycles	0	0	0
	478	418	896

Greenbank Rd

Bicycles	0	0	0	0
Trucks	3	9	0	0
Cars	106	309	51	0
Totals	109	318	51	0

Peds: 14

East Approach

	Out	In	Total
Cars	108	116	224
Trucks	2	6	8
Bicycles	0	0	0
	110	122	232

Dundonald Dr

Bicycles	Trucks	Cars	Totals	
0	0	0	0	
0	1	116	117	
0	6	39	45	
0	1	83	84	

Peds: 3

Peds: 4

Dundonald Dr

Totals	Cars	Trucks	Bicycles
0	0	0	0
56	55	1	0
41	41	0	0
13	12	1	0

West Approach

	Out	In	Total
Cars	238	218	456
Trucks	8	6	14
Bicycles	0	0	0
	246	224	470

Totals	74	245	26	0
Cars	71	241	26	0
Trucks	3	4	0	0
Bicycles	0	0	0	0

Peds: 1

South Approach

	Out	In	Total
Cars	338	404	742
Trucks	7	11	18
Bicycles	0	0	0
	345	415	760

Greenbank Rd

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Greenbank Rd & Dundonald Dr
Site Code: 2410400001
Count Date: Mar 20, 2024
Period: 15:00 - 18:00

Peak Hour Data (15:30 - 16:30)

Start Time	North Approach Greenbank Rd						South Approach Greenbank Rd						East Approach Dundonald Dr						West Approach Dundonald Dr						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
15:30	17	83	31	0	5	131	20	51	7	0	0	78	1	12	20	0	0	33	25	9	12	0	2	46	288
15:45	15	93	29	0	5	137	17	62	5	0	0	84	7	7	4	0	1	18	29	17	39	0	1	85	324
16:00	7	73	24	0	4	104	22	69	6	0	0	97	2	15	14	0	1	31	33	9	19	0	0	61	293
16:15	12	69	25	0	0	106	15	63	8	0	1	86	3	7	18	0	2	28	30	10	14	0	0	54	274
Grand Total	**51**	**318**	**109**	**0**	**14**	**478**	**74**	**245**	**26**	**0**	**1**	**345**	**13**	**41**	**56**	**0**	**4**	**110**	**117**	**45**	**84**	**0**	**3**	**246**	**1179**
Approach %	10.7	66.5	22.8	0		-	21.4	71	7.5	0		-	11.8	37.3	50.9	0		-	47.6	18.3	34.1	0		-	
Totals %	4.3	27	9.2	0		40.5	6.3	20.8	2.2	0		29.3	1.1	3.5	4.7	0		9.3	9.9	3.8	7.1	0		20.9	
PHF	**0.75**	**0.85**	**0.88**	**0**		**0.87**	**0.84**	**0.89**	**0.81**	**0**		**0.89**	**0.46**	**0.68**	**0.7**	**0**		**0.83**	**0.89**	**0.66**	**0.54**	**0**		**0.72**	**0.91**
Cars	51	309	106	0		466	71	241	26	0		338	12	41	55	0		108	116	39	83	0		238	1150
% Cars	100	97.2	97.2	0		97.5	95.9	98.4	100	0		98	92.3	100	98.2	0		98.2	99.1	86.7	98.8	0		96.7	97.5
Trucks	0	9	3	0		12	3	4	0	0		7	1	0	1	0		2	1	6	1	0		8	29
% Trucks	0	2.8	2.8	0		2.5	4.1	1.6	0	0		2	7.7	0	1.8	0		1.8	0.9	13.3	1.2	0		3.3	2.5
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					14	-					1	-					4	-					3	-	22
% Peds					63.6	-					4.5	-					18.2	-					13.6	-	

Appendix C

Synchro Intersection Worksheets – Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	170	6	9	307	52	3	1	1	63	2	91
Future Volume (vph)	73	170	6	9	307	52	3	1	1	63	2	91
Satd. Flow (prot)	1658	1736	0	1658	1707	0	1658	1614	0	1658	1489	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1658	1736	0	1658	1707	0	1658	1614	0	1658	1489	0
Lane Group Flow (vph)	81	196	0	10	399	0	3	2	0	70	103	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	170	6	9	307	52	3	1	1	63	2	91
Future Vol, veh/h	73	170	6	9	307	52	3	1	1	63	2	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	37.5	-	-	37.5	-	-	30	-	-	30	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	189	7	10	341	58	3	1	1	70	2	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	399	0	0	196	0	0	797	774	193	746	748	370
Stage 1	-	-	-	-	-	-	355	355	-	390	390	-
Stage 2	-	-	-	-	-	-	442	419	-	356	358	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1160	-	-	1377	-	-	305	329	849	330	341	676
Stage 1	-	-	-	-	-	-	662	630	-	634	608	-
Stage 2	-	-	-	-	-	-	594	590	-	661	628	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1160	-	-	1377	-	-	243	304	849	310	315	676
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	304	-	310	315	-
Stage 1	-	-	-	-	-	-	616	586	-	590	604	-
Stage 2	-	-	-	-	-	-	500	586	-	613	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.2	17.2	14.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	243	448	1160	-	-	1377	-	-	310	660
HCM Lane V/C Ratio	0.014	0.005	0.07	-	-	0.007	-	-	0.226	0.157
HCM Control Delay (s)	20	13.1	8.3	-	-	7.6	-	-	20	11.5
HCM Lane LOS	C	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0	0	0.2	-	-	0	-	-	0.9	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	18	85	53	8	56	41	142	26	31	210	75
Future Volume (vph)	85	18	85	53	8	56	41	142	26	31	210	75
Satd. Flow (prot)	1658	1330	0	1626	1424	0	1658	1745	1230	1642	1712	1483
Flt Permitted	0.711			0.684			0.950			0.950		
Satd. Flow (perm)	1239	1330	0	1171	1424	0	1658	1745	1230	1642	1712	1483
Satd. Flow (RTOR)		94			62				132			132
Lane Group Flow (vph)	94	114	0	59	71	0	46	158	29	34	233	83
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.6	28.6		28.6	28.6		11.1	28.1	28.1	11.1	28.1	28.1
Total Split (s)	30.0	30.0		30.0	30.0		19.0	31.0	31.0	19.0	31.0	31.0
Total Split (%)	37.5%	37.5%		37.5%	37.5%		23.8%	38.8%	38.8%	23.8%	38.8%	38.8%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3		3.3	3.3		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	12.5	12.5		12.5	12.5		7.3	33.9	33.9	6.9	31.2	31.2
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.12	0.58	0.58	0.12	0.53	0.53
v/c Ratio	0.36	0.32		0.24	0.20		0.22	0.16	0.04	0.18	0.26	0.10
Control Delay	25.7	10.1		23.7	9.2		29.5	12.7	0.1	29.5	15.0	1.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.1		23.7	9.2		29.5	12.7	0.1	29.5	15.0	1.6
LOS	C	B		C	A		C	B	A	C	B	A
Approach Delay		17.1			15.8			14.4			13.2	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	9.6	1.9		5.9	0.9		4.8	6.1	0.0	3.5	17.1	0.0
Queue Length 95th (m)	21.8	13.1		14.9	9.5		15.0	29.8	0.0	12.2	43.9	3.4
Internal Link Dist (m)		340.0			278.8			525.9			476.9	
Turn Bay Length (m)	45.0			17.5			75.0		20.0	95.0		40.0
Base Capacity (vph)	511	603		482	623		376	1008	766	373	908	849
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.19		0.12	0.11		0.12	0.16	0.04	0.09	0.26	0.10

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 58.7
Natural Cycle: 70
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.36

Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 43.1% ICU Level of Service A
Analysis Period (min) 15

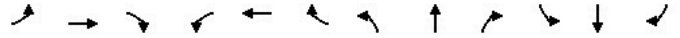
Splits and Phases: 2: Greenbank & Kilbirnie

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	23	103	26	32	68	61	218	13	45	184	80
Future Volume (vph)	112	23	103	26	32	68	61	218	13	45	184	80
Satd. Flow (prot)	0	1606	0	0	1602	0	1658	1745	1483	1658	1745	1483
Flt Permitted		0.812			0.899		0.950			0.950		
Satd. Flow (perm)	0	1335	0	0	1454	0	1658	1745	1483	1658	1745	1483
Satd. Flow (RTOR)		52			76				129			129
Lane Group Flow (vph)	0	264	0	0	141	0	68	242	14	50	204	89
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	33.3	33.3		33.3	33.3		11.1	31.1	31.1	11.1	31.1	31.1
Total Split (s)	33.3	33.3		33.3	33.3		15.1	31.1	31.1	15.1	31.1	31.1
Total Split (%)	41.9%	41.9%		41.9%	41.9%		19.0%	39.1%	39.1%	19.0%	39.1%	39.1%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.0	3.0		3.0	3.0		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.3			6.3		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)		16.8			16.8		7.7	26.5	26.5	7.4	26.3	26.3
Actuated g/C Ratio		0.26			0.26		0.12	0.42	0.42	0.12	0.41	0.41
v/c Ratio		0.68			0.32		0.34	0.33	0.02	0.26	0.28	0.13
Control Delay		26.9			12.5		34.6	18.3	0.1	33.4	18.0	2.2
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		26.9			12.5		34.6	18.3	0.1	33.4	18.0	2.2
LOS		C			B		C	B	A	C	B	A
Approach Delay		26.9			12.5			20.9			16.1	
Approach LOS		C			B			C			B	
Queue Length 50th (m)		24.6			6.6		8.1	21.6	0.0	6.0	18.1	0.0
Queue Length 95th (m)		47.9			18.9		21.2	48.4	0.0	16.8	40.8	4.8
Internal Link Dist (m)		151.1			120.0			476.9			285.2	
Turn Bay Length (m)							60.0		35.0	120.0		90.0
Base Capacity (vph)		616			682		243	725	691	243	719	687
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		0.43			0.21		0.28	0.33	0.02	0.21	0.28	0.13

Intersection Summary
Cycle Length: 79.5
Actuated Cycle Length: 63.8
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.68

Intersection Signal Delay: 19.8 — Intersection LOS: B
Intersection Capacity Utilization 52.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Greenbank & Dundonald



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	286	0	0	236	73	10	0	8	72	2	68
Future Volume (vph)	80	286	0	0	236	73	10	0	8	72	2	68
Satd. Flow (prot)	1658	1745	0	1745	1684	0	1658	1483	0	1658	1490	0
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1658	1745	0	1745	1684	0	1658	1483	0	1658	1490	0
Lane Group Flow (vph)	89	318	0	0	343	0	11	9	0	80	78	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	286	0	0	236	73	10	0	8	72	2	68
Future Vol, veh/h	80	286	0	0	236	73	10	0	8	72	2	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	37.5	-	-	37.5	-	-	30	-	-	30	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	318	0	0	262	81	11	0	9	80	2	76

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	343	0	0	318	0	0	838	839	318	804	799	303
Stage 1	-	-	-	-	-	-	496	496	-	303	303	-
Stage 2	-	-	-	-	-	-	342	343	-	501	496	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1216	-	-	1242	-	-	286	302	723	301	319	737
Stage 1	-	-	-	-	-	-	556	545	-	706	664	-
Stage 2	-	-	-	-	-	-	673	637	-	552	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1216	-	-	1242	-	-	241	280	723	281	296	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	241	280	-	281	296	-
Stage 1	-	-	-	-	-	-	515	505	-	654	664	-
Stage 2	-	-	-	-	-	-	602	637	-	505	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	15.9	16.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	241	723	1216	-	-	1242	-	-	281	707
HCM Lane V/C Ratio	0.046	0.012	0.073	-	-	-	-	-	0.285	0.11
HCM Control Delay (s)	20.7	10	8.2	-	-	0	-	-	22.8	10.7
HCM Lane LOS	C	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	1.1	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	15	73	38	39	36	62	204	50	62	236	117
Future Volume (vph)	103	15	73	38	39	36	62	204	50	62	236	117
Satd. Flow (prot)	1658	1455	0	1523	1305	0	1642	1745	1455	1658	1728	1469
Flt Permitted	0.703			0.694			0.950			0.950		
Satd. Flow (perm)	1225	1455	0	1113	1305	0	1640	1745	1455	1658	1728	1437
Satd. Flow (RTOR)		81			40				132			132
Lane Group Flow (vph)	114	98	0	42	83	0	69	227	56	69	262	130
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	28.6	28.6		28.6	28.6		11.1	28.1	28.1	11.1	28.1	28.1
Total Split (s)	30.0	30.0		30.0	30.0		19.0	31.0	31.0	19.0	31.0	31.0
Total Split (%)	37.5%	37.5%		37.5%	37.5%		23.8%	38.8%	38.8%	23.8%	38.8%	38.8%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.3	3.3		3.3	3.3		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6		6.6	6.6		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	13.1	13.1		13.1	13.1		8.2	31.5	31.5	8.2	31.4	31.4
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.14	0.52	0.52	0.14	0.52	0.52
v/c Ratio	0.43	0.26		0.17	0.26		0.31	0.25	0.07	0.31	0.29	0.16
Control Delay	27.8	9.7		23.2	15.4		30.5	15.7	0.2	30.5	16.1	4.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	9.7		23.2	15.4		30.5	15.7	0.2	30.5	16.1	4.4
LOS	C	A		C	B		C	B	A	C	B	A
Approach Delay		19.4			18.0			16.1			15.0	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	12.2	1.7		4.2	4.3		7.4	17.6	0.0	7.4	20.8	0.0
Queue Length 95th (m)	26.7	12.1		12.0	14.7		20.2	43.9	0.0	20.2	51.0	10.6
Internal Link Dist (m)		340.0			278.8			525.9			472.4	
Turn Bay Length (m)	45.0			17.5			75.0		20.0	95.0		40.0
Base Capacity (vph)	496	637		451	552		367	913	825	370	904	814
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.15		0.09	0.15		0.19	0.25	0.07	0.19	0.29	0.16

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 60.1
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.43

Intersection Signal Delay: 16.5 — Intersection LOS: B
Intersection Capacity Utilization 50.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Greenbank & Kilbirnie

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	15	73	38	39	36	62	204	50	62	236	117
Future Volume (vph)	103	15	73	38	39	36	62	204	50	62	236	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	6.6	6.6		6.6	6.6		6.1	6.1	6.1	6.1	6.1	6.1
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1656	1455		1523	1305		1642	1745	1455	1658	1728	1437
Flt Permitted	0.70	1.00		0.69	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1225	1455		1112	1305		1642	1745	1455	1658	1728	1437
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	114	17	81	42	43	40	69	227	56	69	262	130
RTOR Reduction (vph)	0	68	0	0	33	0	0	0	30	0	0	69
Lane Group Flow (vph)	114	30	0	42	50	0	69	227	26	69	262	61
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	2%	27%	3%	11%	46%	3%	3%	2%	4%	2%	3%	3%
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	10.5	10.5		10.5	10.5		5.0	29.9	29.9	5.0	29.9	29.9
Effective Green, g (s)	10.5	10.5		10.5	10.5		5.0	29.9	29.9	5.0	29.9	29.9
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.08	0.47	0.47	0.08	0.47	0.47
Clearance Time (s)	6.6	6.6		6.6	6.6		6.1	6.1	6.1	6.1	6.1	6.1
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	237		181	213		127	812	677	129	804	669
v/s Ratio Prot		0.02			0.04		c0.04	0.13		0.04	c0.15	
v/s Ratio Perm	c0.09			0.04					0.02			0.04
v/c Ratio	0.57	0.13		0.23	0.23		0.54	0.28	0.04	0.53	0.33	0.09
Uniform Delay, d1	24.8	22.9		23.3	23.3		28.5	10.5	9.3	28.5	10.8	9.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.2		0.7	0.6		4.7	0.9	0.1	4.2	1.1	0.3
Delay (s)	28.5	23.2		24.0	23.9		33.2	11.4	9.4	32.7	11.9	9.8
Level of Service	C	C		C	C		C	B	A	C	B	A
Approach Delay (s)		26.0			23.9			15.4			14.4	
Approach LOS		C			C			B			B	

Intersection Summary				
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.41			
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	18.8	
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	45	84	13	41	56	74	245	26	51	318	109
Future Volume (vph)	117	45	84	13	41	56	74	245	26	51	318	109
Satd. Flow (prot)	0	1627	0	0	1615	0	1658	1745	1483	1658	1745	1483
Flt Permitted		0.815			0.949		0.950			0.950		
Satd. Flow (perm)	0	1357	0	0	1542	0	1658	1745	1483	1658	1745	1483
Satd. Flow (RTOR)		32			62				120			121
Lane Group Flow (vph)	0	273	0	0	122	0	82	272	29	57	353	121
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	33.3	33.3		33.3	33.3		11.1	31.1	31.1	11.1	31.1	31.1
Total Split (s)	33.3	33.3		33.3	33.3		21.1	31.1	31.1	21.1	31.1	31.1
Total Split (%)	38.9%	38.9%		38.9%	38.9%		24.7%	36.4%	36.4%	24.7%	36.4%	36.4%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.0	3.0		3.0	3.0		2.4	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.3			6.3		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)		17.8			17.8		8.9	29.6	29.6	8.0	26.1	26.1
Actuated g/C Ratio		0.26			0.26		0.13	0.43	0.43	0.12	0.38	0.38
v/c Ratio		0.73			0.27		0.38	0.36	0.04	0.30	0.53	0.19
Control Delay		33.3			13.4		35.5	19.1	0.1	35.1	24.0	5.5
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		33.3			13.4		35.5	19.1	0.1	35.1	24.0	5.5
LOS		C			B		D	B	A	D	C	A
Approach Delay		33.3			13.4			21.2			20.9	
Approach LOS		C			B			C			C	
Queue Length 50th (m)		29.0			6.1		10.1	26.0	0.0	7.0	36.6	0.0
Queue Length 95th (m)		56.5			18.4		24.5	56.6	0.0	18.8	77.9	11.3
Internal Link Dist (m)		151.3			120.5			472.4			285.4	
Turn Bay Length (m)							60.0		35.0	120.0		90.0
Base Capacity (vph)		572			665		375	754	708	375	663	638
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		0.48			0.18		0.22	0.36	0.04	0.15	0.53	0.19

Intersection Summary
Cycle Length: 85.5
Actuated Cycle Length: 68.6
Natural Cycle: 80
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.73

Intersection Signal Delay: 22.9 | Intersection LOS: C
Intersection Capacity Utilization 58.8% | ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Greenbank & Dundonald

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	45	84	13	41	56	74	245	26	51	318	109
Future Volume (vph)	117	45	84	13	41	56	74	245	26	51	318	109
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)		6.3			6.3		6.1	6.1	6.1	6.1	6.1	6.1
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.95			0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98			0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1626			1616		1658	1745	1483	1658	1745	1483
Flt Permitted		0.81			0.95		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1356			1543		1658	1745	1483	1658	1745	1483
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	130	50	93	14	46	62	82	272	29	57	353	121
RTOR Reduction (vph)	0	24	0	0	46	0	0	0	17	0	0	74
Lane Group Flow (vph)	0	249	0	0	76	0	82	272	12	57	353	47
Turn Type	Perm	NA		Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)		17.8			17.8		7.3	29.6	29.6	5.0	27.3	27.3
Effective Green, g (s)		17.8			17.8		7.3	29.6	29.6	5.0	27.3	27.3
Actuated g/C Ratio		0.25			0.25		0.10	0.42	0.42	0.07	0.39	0.39
Clearance Time (s)		6.3			6.3		6.1	6.1	6.1	6.1	6.1	6.1
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		340			387		170	728	619	116	671	571
v/s Ratio Prot							c0.05	0.16		0.03	c0.20	
v/s Ratio Perm		c0.18			0.05				0.01			0.03
v/c Ratio		0.73			0.20		0.48	0.37	0.02	0.49	0.53	0.08
Uniform Delay, d1		24.4			20.9		30.0	14.3	12.1	31.7	16.8	13.8
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.9			0.2		2.2	1.5	0.1	3.3	2.9	0.3
Delay (s)		32.3			21.2		32.2	15.7	12.2	35.0	19.7	14.1
Level of Service		C			C		C	B	B	C	B	B
Approach Delay (s)		32.3			21.2			19.0			20.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	18.5
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Appendix D

MMLOS worksheet

Multi-Modal Level of Service - Segments Form

Consultant	**CGH Transportation Inc**	**Project**	**2025-011**
Scenario	**Exsiting/Future**	**Date**	**2025-03-31**
Comments			

SEGMENTS			Obsidian Existing/Future	Greenbank Road Future		
Pedestrian	Sidewalk Width Boulevard Width	-	1.8 m < 0.5 m	≥ 2 m > 2 m		
	Avg Daily Curb Lane Traffic Volume		≤ 3000	> 3000		
	Operating Speed On-Street Parking		> 30 to 50 km/h yes	> 50 to 60 km/h no		
	Exposure to Traffic PLoS		**B**	**C**	-	-
	Effective Sidewalk Width					
	Pedestrian Volume					
	Crowding PLoS		-	-	-	-
	Level of Service		**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**D**	Mixed Traffic	Physically Separated		
	Number of Travel Lanes		≤ 2 (no centreline)			
	Operating Speed		≥ 50 to 60 km/h			
	# of Lanes & Operating Speed LoS		**D**	-	-	-
	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		>50 to 60 km/h			
	Unsignalized Crossing - Lowest LoS		**C**	**A**	-	-
	Level of Service		**D**	**A**	**-**	**-**
Transit	Facility Type	**A**		Segregated ROW		
	Friction or Ratio Transit:Posted Speed					
	Level of Service		**-**	**A**	**-**	**-**
Truck	Truck Lane Width	**A**		≤ 3.5 m		
	Travel Lanes per Direction			> 1		
	Level of Service		**-**	**A**	**-**	**-**

Appendix E

TDM Checklist

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

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

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		1.	**TDM PROGRAM MANAGEMENT**	
		1.1	**Program coordinator**	
BASIC	★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☐
		1.2	**Travel surveys**	
BETTER		1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2.	**WALKING AND CYCLING**	
		2.1	**Information on walking/cycling routes & destinations**	
BASIC		2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☐
		2.2	**Bicycle skills training**	
BETTER		2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

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

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

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

Legend

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

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☑
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

TDM-Supportive Development Design and Infrastructure Checklist **City of Ottawa**
Version 1.0 (30 June 2017)

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

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