

**New OCSB Elementary School  
620 Triangle Street, Stittsville  
Transportation Impact  
Assessment Analysis Report**

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## 1.0 TIA SCREENING

Robinson Consultants Inc. (RCI) was retained by Pye & Richards - Temprano & Young Architects Inc. to prepare a Transportation Impact Assessment (TIA) in support of a Site Plan control application for a new elementary school at the property municipally known as 620 Triangle Street in Ottawa, Ontario. A TIA Screening Report was submitted to the City in October 2024 and is provided in Appendix B of this Scoping Report. Based on the TIA screening, the Trip Generation Trigger was met, requiring the undertaking of a TIA. The Safety and Location Triggers were not met.

## 2.0 PROPOSED DEVELOPMENT

The Ottawa Catholic School Board (OCSB) is planning to construct a new elementary school at the property municipally known as 620 Triangle Street in the Fernbank neighbourhood of Stittsville (former Goulbourn Township, City of Ottawa). The existing site is vacant with a site area of approximately 2.35 ha (23,482.62 m<sup>2</sup>). The site lies within the Fernbank community development area that commenced construction around 2017. The site was previously identified for an elementary school development within the Fernbank Community Design Plan (CDP), completed in 2009. The subject site location and surrounding road context is illustrated in Figure 1. The proposed site plan is included as Appendix A.

The existing zoning designation for 620 Triangle Street is Minor Institutional Zone, Sub-zone A (I1A). As per zoning for I1A, school and daycare uses are permitted. The property is bound by Triangle Street to the west, Cranesbill Road to the north, Honeylocust Avenue to the south, and the rear property line for residential properties fronting Ponderosa Street to the east.



Figure 1: Site Location and Local Road Network

The proposed development will include a single storey building, with a Gross Floor Area (GFA) of approximately 4,690 m<sup>2</sup> including 16 elementary school classrooms, six kindergarten rooms, and a two age-group childcare centre accommodating an anticipated total of 610 staff and students.

The site is anticipated to have a total of 89 parking spaces for staff and visitors including four barrier free accessible parking spaces. The site is also anticipated to have a total of 48 bicycle parking spaces situated adjacent to the building access points. Vehicle access to the parking area is proposed via a single full-move access on Triangle Street. The site plan provides provisions for a future fire route which would be accessed via a gated entry on Honeylocust Avenue. Layby areas are also proposed along Triangle Street (east side) and Honeylocust Avenue (north side) intended to respectively accommodate school buses and parent pick up / drop offs. The Triangle Street layby area is approximately 130 m long, accommodating 10 B-12 school buses. The Honeylocust layby area is approximately 100 m and is intended to serve as the primary parent pick-up / drop-off layby area but could accommodate an additional eight B-12 school buses or approximately 18 passenger vehicles. Both layby areas are approximately 2.6 m wide.

The development will be built in a single phase with an estimated build-out date in 2027.

## 2.1 Study Area

Based on a discussion with City Staff and review of the anticipated traffic distribution to key area corridors and destinations, the project study area includes the following existing and future planned intersections:

- Abbott Street East / Castlefrank Rd at Terry Fox Drive;
- Abbott Street East at Cranesbill Road / Rouncey Road;
- Abbott Street East at Triangle Street;
- Triangle Street at Honeylocust Avenue;
- Triangle Street at Cranesbill Road;
- Abbott Street East at Robert Grant Avenue;
- Future development access on Triangle Street, and;
- Future Robert Grant Avenue Extension at Future Cranesbill Road Extension.

The study area road segments and intersections are illustrated in Figure 2.



Figure 2: Study Area Road segments and Intersections

## 3.0 EXISTING CONDITIONS

The following sections outline the existing study area transportation network features including, roadways and intersections, transit, active transportation facilities, as well as area collision history and traffic volumes, including walking and cycling volumes.

### 3.1 Existing Road Network

The following provides a description of the study area roadways, as illustrated in Figure 2.

**Abbott Street East** is classified as a Major Collector roadway that nominally travels east-west from West Ridge Drive in Stittsville to Terry Fox Drive, where it continues easterly as Castlefrank Road into the Glen Cairn / Hazeldean neighbourhood of Kanata. The road is within a 40km/h neighbourhood speed limit area. Abbott Street East is configured with one lane in each direction with no painted centreline. Cycle tracks and sidewalks are present (or under construction) on both sides of the street from Robert Grant Avenue to Terry Fox Drive. Within the study area, the road is bound by low-density residential housing, a municipal park, a real-estate agency office and a stormwater management pond.

**Castlefrank Road** is classified as a Major Collector roadway which forms the west approach of the Abbott Street East and Terry Fox Drive intersection and connects to Hazeldean Road in the north-west. Castlefrank Road within the study area primarily serves low and medium density residential development. The roadway is within a 40 km/h neighbourhood speed limit area. Sidewalks are present on the south side of the roadway within the study area.

**Terry Fox Drive** is classified as an Arterial roadway that nominally travels north-south within the study area, providing connectivity to Hope Side Road / Eagleson Road in the south to Highway 417 and March Road in the North. Terry Fox Drive within the study area has a posted speed limit of 80 km/h and has a rural / semi-urban cross-section with paved shoulders. A Multi-Use Pathway also runs along the west side of the road. Sidewalks are present along the east side of the road, north of Abbott Street East / Castlefrank Road. Terry Fox Drive generally serves low-density residential developments via connections with Major Collector roads. No private access driveways are located on Terry Fox Drive within the study area. Terry Fox Drive is also a designated as a truck route which permits full loads.

**Triangle Street** is classified as a Local roadway that nominally travels north-south from Cranesbill Road in the north to Lift Lane in the south and lies fully within the Fernbank community development area. The road is also within a 40km/h speed limited area. Triangle Street is configured with one lane in each direction with no painted centreline. A sidewalk is present on the east side of the roadway along its full length. There are no cycling facilities or identified parking restrictions along the corridor. Within the study area, Triangle Street is bound by low-density residential development.

**Cranesbill Road** is classified as a Major-Collector roadway that travels from Baldcypress Way in the north-west to Abbott Street East where it continues southerly as Rouncey Road. The roadway is within a 40km/h speed limited area. Cranesbill Road is configured with one lane in each direction with no painted centreline. A sidewalk is present on both sides of the road along its full length. No cycling facilities or parking restrictions were identified along the corridor. The roadway within the study area is bound by low-density residential development and the Bradley-Craig Park.

**Honeylocust Avenue** is classified as a Local roadway that nominally travels east-west from Ponderosa Street in the east to Backbend Terrace in the west. The roadway is within a 40km/h speed limited area. Honeylocust Avenues has one lane in each direction with no painted centreline. A sidewalk is present on the north side of the roadway along its entire length. No cycling facilities or parking restrictions were identified along the corridor, and the roadway follows an urban cross-section. The road is bound by low-density residential development along the south side and undeveloped property on the north side.

**Robert Grant Avenue** is classified as an Arterial roadway that nominally runs north-south, currently from Abbott Street East in the north to Fernbank Road in the South. The roadway primarily serves surrounding low- and medium-density residential development via connections with Major Collector roadways. The roadway has a 60 km/h posted speed limit within the study area.

### 3.2 Existing Study Intersections

The following sections provide a description of the study area intersections illustrated in Figure 2.

#### 3.2.1 Abbott Street East / Castlefrank Road at Terry Fox Drive,

Abbott Street East / Castlefrank Road at Terry Fox Drive, illustrated in Figure 3, is a four-leg signalized intersection. All approaches include one through lane in each direction. The Abbott Street East and Castlefrank Road (east/west) approaches, include auxiliary left-turn lanes with approximately 15 m and 40 m of storage space, respectively. The Terry Fox Drive south approach includes an auxiliary left-turn lane with approximately 70 m of storage space. The Terry Fox Drive north approach includes an auxiliary left- and right-turn lane with approximately 115 m and 75 m of storage space, respectively. Sidewalks are present on both sides of the Abbott Street East (west) approach, the east side of the Terry Fox Drive north approach, and on the south side of the Castlefrank Road (east) approach. A multi-use pathway is present along the west side of Terry Fox Drive. Cycle tracks are present on both sides of Abbott Street East; however, the eastbound cycle track intersects the multi-use pathway along Terry Fox Drive while the westbound track connects to a sidewalk, south of the Multi-Use Trail / intersection. There are protected pedestrian crossings at all intersection approaches, however, no bidirectional cross-rides are present on the west side of the intersection. Of note, eastbound through traffic is prohibited between 07:00 AM and 09:00 AM from Monday to Friday.



Figure 3: Abbott Street East at Castlefrank Road at Terry Fox Drive

#### 3.2.2 Abbott Street East at Cranesbill Road / Rouncey Road

Abbott Street East at Cranesbill Road / Rouncey Road, illustrated in Figure 4, is a four-leg single-lane roundabout with an approximately 35 m inscribed circle diameter including a 3 m truck apron. All approaches are equipped with Level 2 Type D pedestrian crossovers. Multi-Use Pathways are present at all quadrants of the intersection which transition to sidewalks along Cranesbill Road and Rouncey Road and to sidewalks / cycle tracks along Abbott Street.



Figure 4: Abbott Street East at Cranesbill Road / Rouncey Road

### 3.2.3 Abbott Street East at Triangle Street

Abbott Street East at Triangle Street, illustrated in Figure 5, is a four-leg, two-way stop-controlled intersection. Stop control is provided for the north and south approaches of Triangle Street, while Abbott Street is free flow for traffic. All approaches consist of one shared left/through/right lane. Sidewalks and cycle tracks are present on both sides of Abbott Street East. A sidewalk is also present on the east side of the Triangle Street approaches. East-west pedestrian crossings on both Triangle Street approaches, are assumed to be protected, however, no painted crosswalks were identified.



Figure 5: Abbott Street East at Cranesbill Road / Rouncey Road

### 3.2.4 Triangle Street at Honeylocust Avenue

Triangle Street at Honeylocust Avenue, illustrated in Figure 6, is a four-leg stop-controlled intersection. Stop control is provided for the north and south approaches of Triangle Street while Honeylocust Avenue is free flow for traffic. All approaches consist of one shared left/through/right lane. Sidewalks are present on the north side of Honeylocust Avenue and on the east side of Triangle Street. Pedestrian crossings on both Triangle Street approaches are assumed to be protected, however, no painted crosswalks were identified. The sidewalk along the east side of Triangle Street is equipped with a curb depression and Tactile Walking Surface Indicators (TWSI) indicating a potential north-south pedestrian crossing, however, no signage or stop control is present on Honeylocust Avenue or Triangle Street.



Figure 6: Abbott Street East at Cranesbill Road / Rouncey Road

### 3.2.5 Triangle Street at Cranesbill Road

Triangle Street at Cranesbill Road, illustrated in Figure 7, is a three-leg stop-controlled intersection. The west approach includes a single shared through/right turn lane while the east approach includes a single shared through/left turn lane. The south approach includes a single shared left/right turn lane. Sidewalks are present on both sides of Cranesbill Road and on the east side of Triangle Street. East-West pedestrian crossings are provided on Triangle Street.

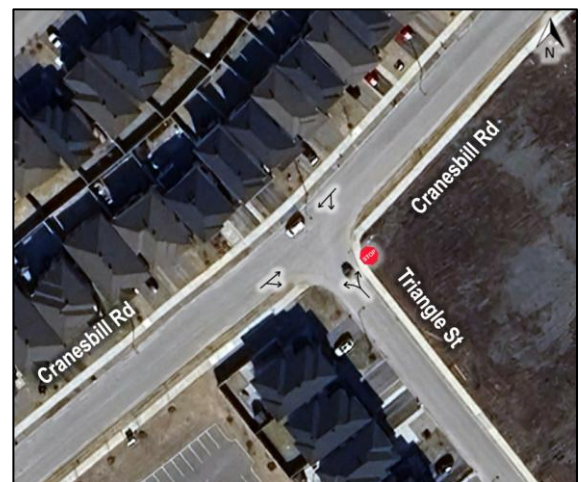


Figure 7: Triangle Street East at Cranesbill Road

### 3.2.6 Abbott Street East at Robert Grant Avenue

Abbott Street East at Robert Grant Avenue, illustrated in Figure 8, is currently a four-leg single lane roundabout with an approximate 45 m inscribed circle diameter. While the north approach currently terminates in a dead-end, the intersection has been constructed to accommodate the future northerly extension of Robert Grant Avenue. The west and south approaches facilitate protected pedestrian crossings via Level 2 Type D pedestrian crossovers (PXO). The east approach has depressed curbs with TWSI but no signage to mark either an uncontrolled or protected pedestrian crossing. The north quadrants of the intersection both have cycle tracks and sidewalks, while the south approach has multi-use pathway connections to the Ottawa Carleton Trailway (Trans Canada Trail) and sidewalks / cycle tracks further to the south on Robert Grant Avenue.

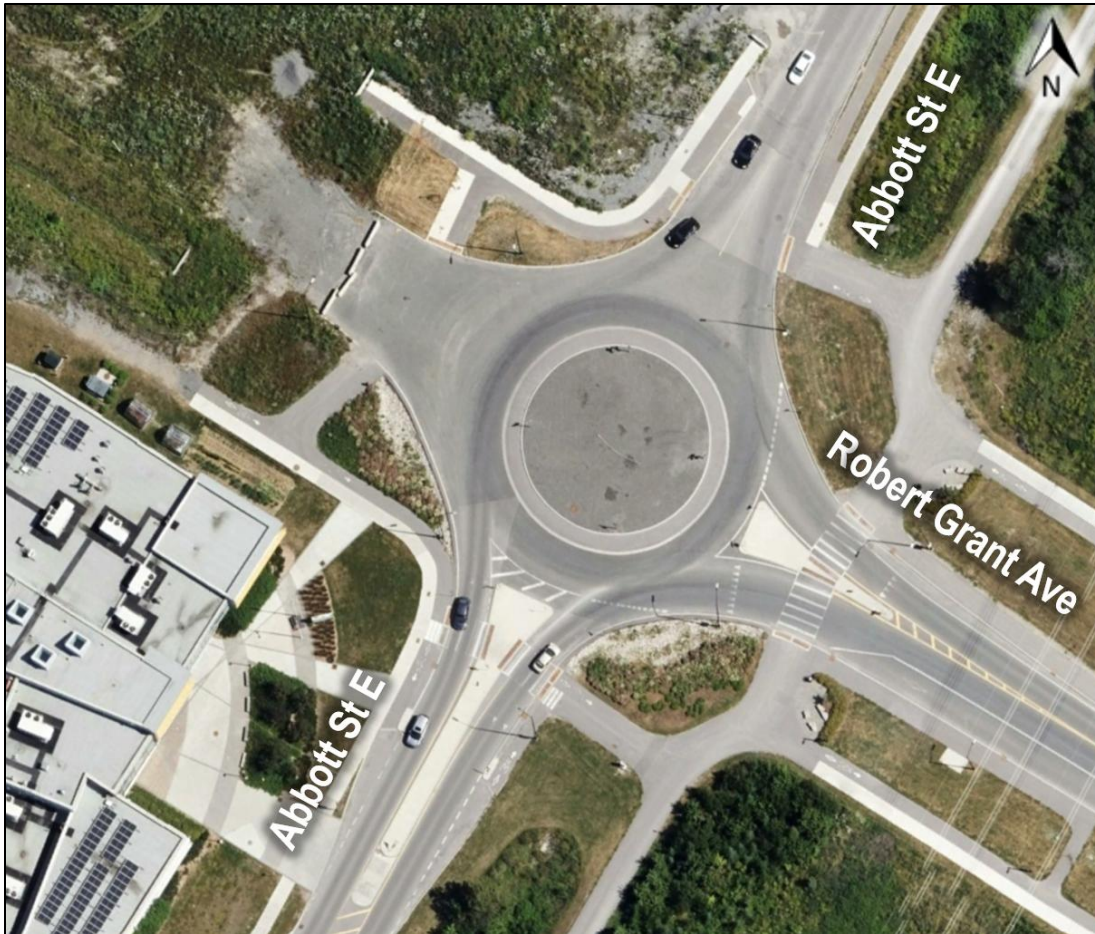


Figure 8: Abbott Street East at Robert Grant Avenue

### 3.3 Existing Driveways

As illustrated in Figure 9, existing area driveways within a 200 m radius of the proposed Triangle Street site access primarily consist of residential (single-family detached homes) private driveways. There is also driveway access to the Bradley-Craig Park located west of the site on Cranesbill Road.



Figure 9: Existing Area Driveways

### 3.4 Existing Active Transportation Network

Area active transportation facilities are illustrated in Figure 10. As previously discussed within Sections 3.1 and Section 3.2, the study area is well serviced for active modes of transportation. A cycle track is located along Abbott Street East from the Multi-Use Pathway along Terry Fox Drive to Robert Grant Avenue in the eastbound, and to approximately 80m west of Lift Lane in the westbound direction. Sidewalks are present on Triangle Street, Honeylocust Avenue, Malahat Way, Lanceleaf Way, Ponderosa Street, Laburnum Walk, Oxalis Crescent, Cranesbill Road, and Rouncey Road. Castlefrank Road is identified as a suggested bicycle route, however, no designated cycling facilities are provided. To the south of Abbott Street East is the Ottawa Carleton Trailway which forms part of the Trans Canada Trailway and is a major area recreational trail. As mentioned, there is a Multi-Use Pathway along the west side of Terry Fox Drive in addition to paved shoulders. Within closer proximity of the Site, there are no physically separated bikeways, or bicycle lanes, however, all area roadways are assumed to be shared spaces. There are also several pathway connections, providing enhanced neighbourhood connectivity, particularly connecting Honeylocust Avenue to Malahat Way and Cranesbill Road to the Susanna Kemp Park. There is also a well-developed trail network to the north of Cranesbill Road which provides connectivity to Terry Fox Drive and neighbouring developments to the north.

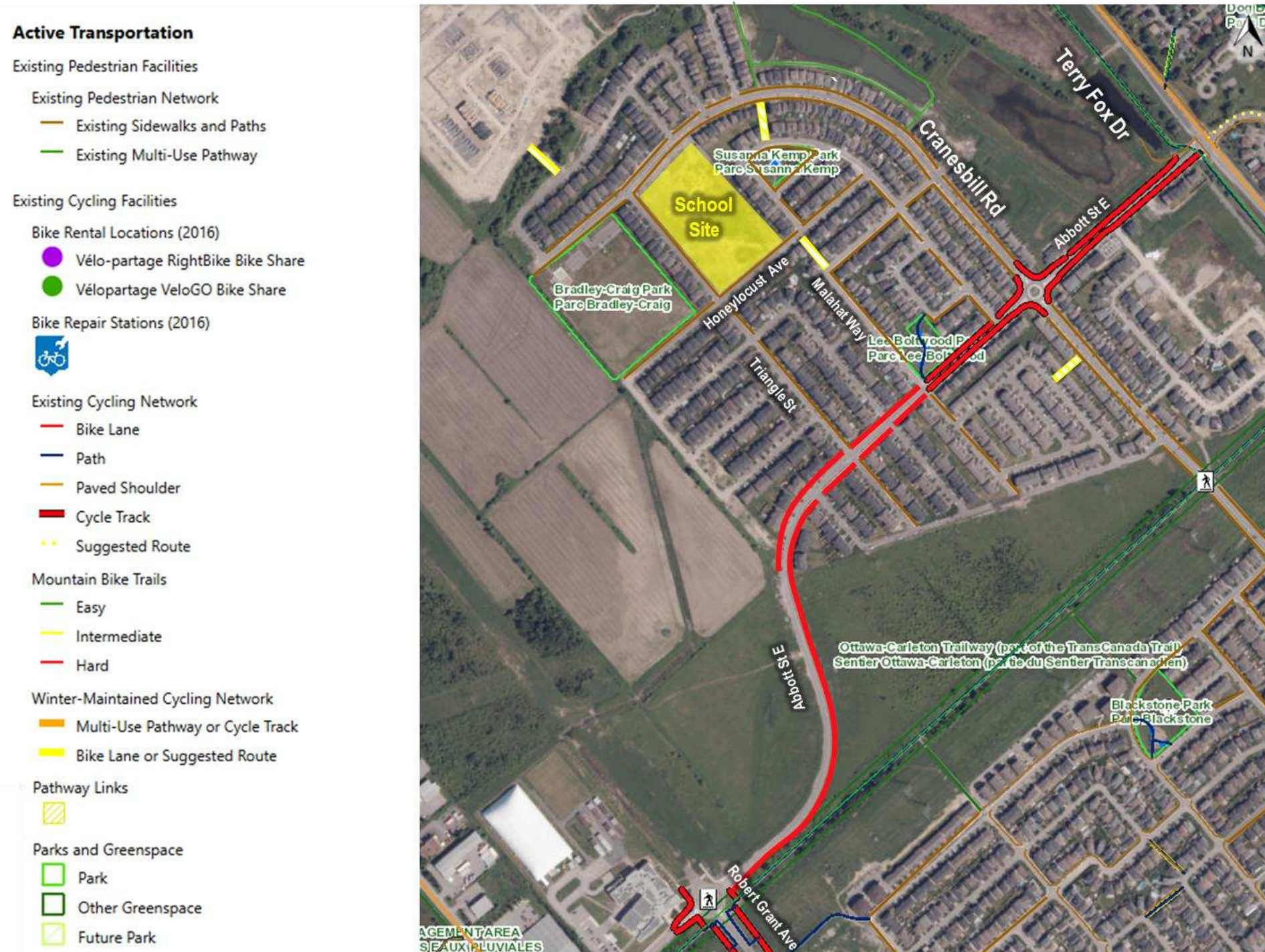


Figure 10: Existing Area Active Transportation Facilities (Courtesy of GeoOttawa)

### 3.5 Existing Transit Network

The existing area transit network is illustrated in Figure 11. Currently local route 67 provides service along Terry Fox Drive and Rouncey Road and connects the Terry Fox Transit Station at the Kanata Centrum in the north to Fernbank Road in the south. Various other routes outside of walking distance include rapid transit route 61. Rapid transit route 61 provides connectivity between Rideau A to Cardelrec-Goulbourn Complex.

As illustrated in Figure 12, area transit stops are located along Abbott Street East and Rouncey Road, serving local transit route 67 which has an approximately 30-minute frequency during morning peak hours (6:00 AM to 9:00 AM) and 1-hour during off peak hours (9:00 AM to 9:00 PM). Route 67 does not operate during weekends. The closest transit stops located on Abbott Street East are approximately 700 m walking distance from the site.

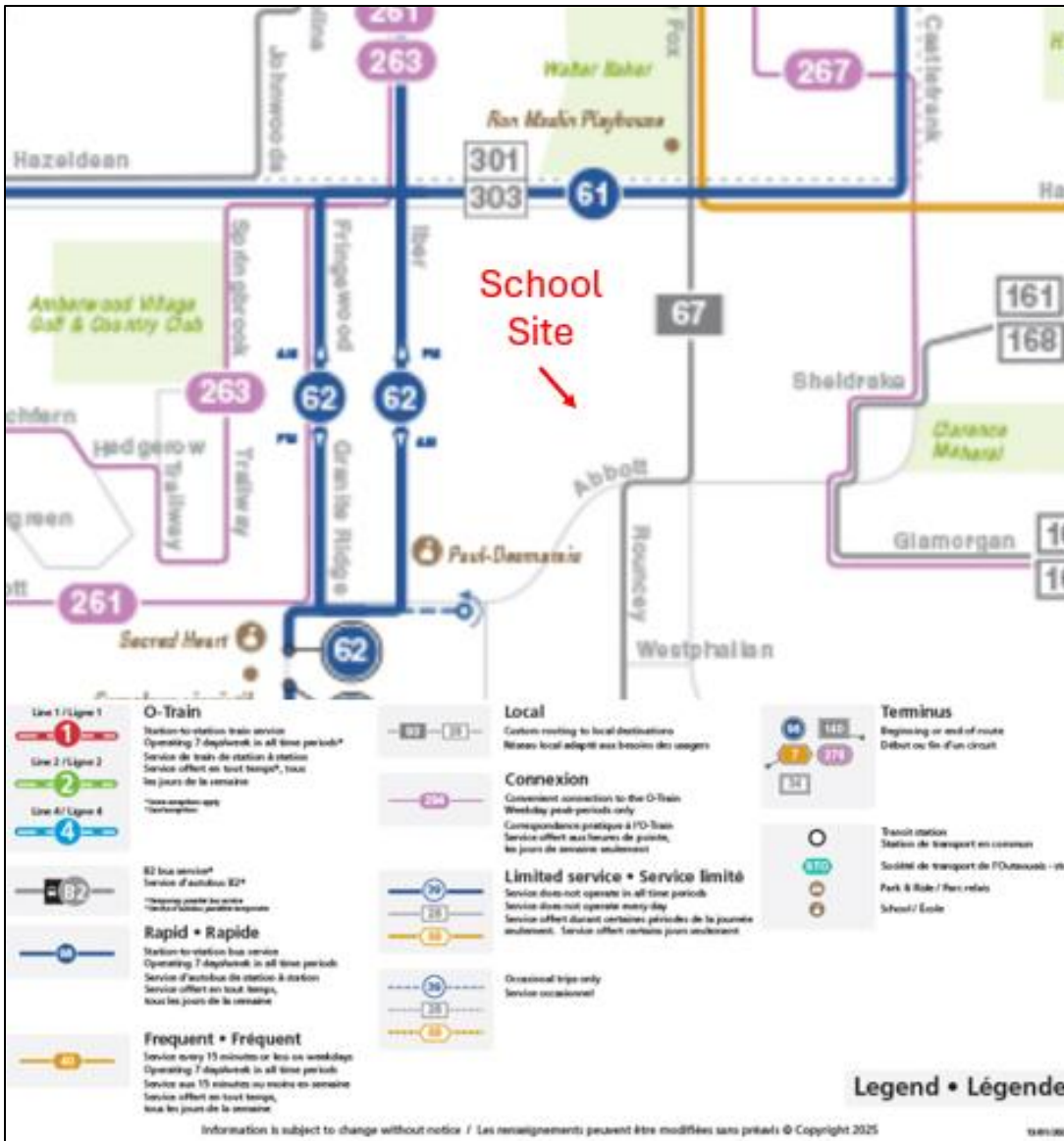


Figure 11: Existing Area Transit Routes

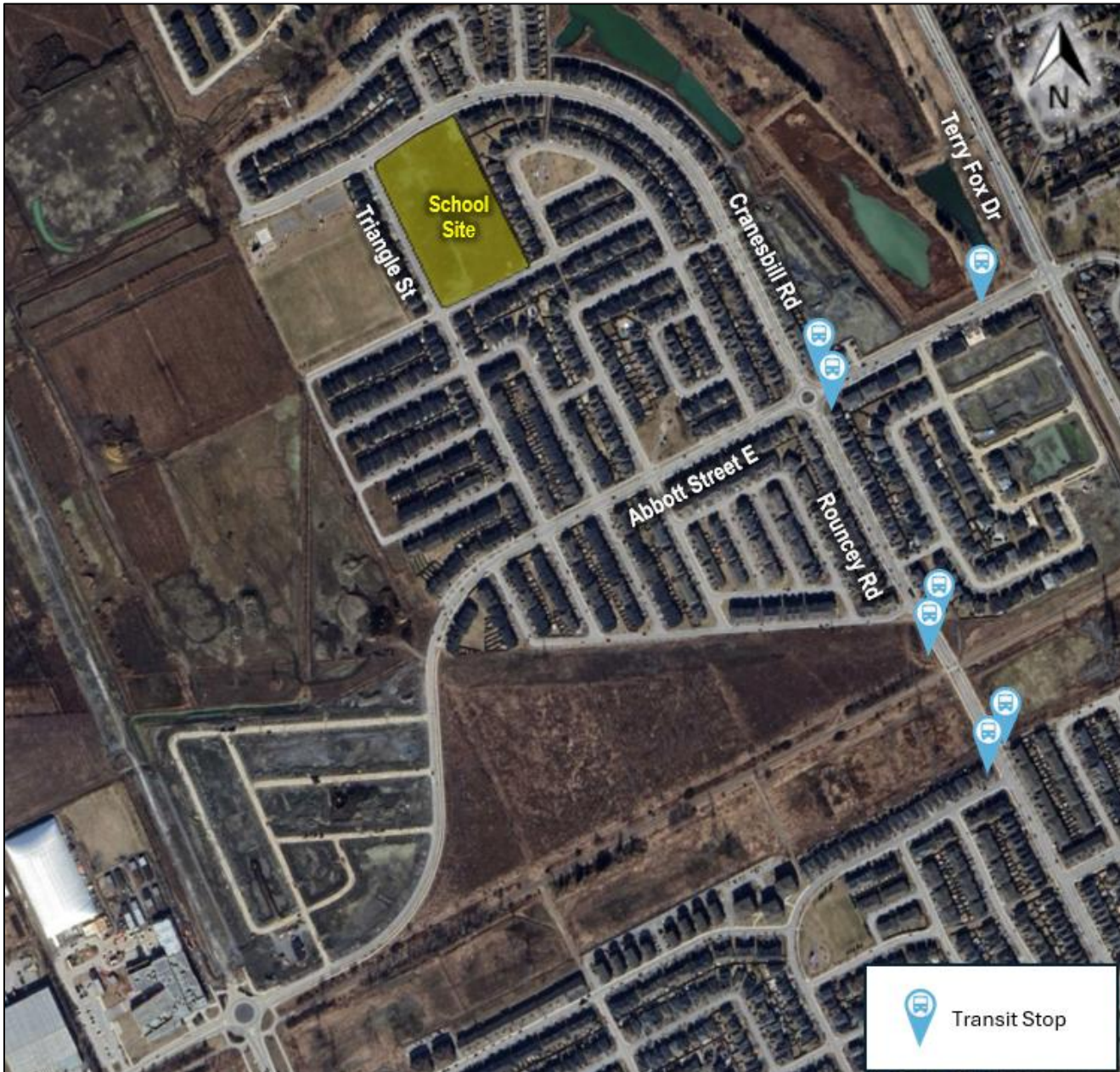


Figure 12: Existing Area Transit Stops

### 3.6 Existing Area Traffic Management Measures

Review of the area transportation network does not indicate presence of area traffic management measures. Additionally, no permanent traffic calming measures were identified. However, field assessments were undertaken during the winter months and available aerial photographs for the development are limited due to the recency of construction of the surrounding development. As such, the presence of temporary seasonal measures such as centre-line flex delineators can not be confirmed. Speed limit pavement markings were identified on Castlefrank Road, indicating a 40 km/h speed limit.

### 3.7 Existing Traffic Volumes

Turning Movement Count (TMC) data for the study area intersections have been obtained from the City of Ottawa as a basis for operational analysis. Table 1 summarizes the provided traffic data used for this study. All available traffic data can be found in Appendix C.

Table 1: Available Traffic Data

Intersection	Traffic Control	Peak Periods Captured	Date of Collection	AM Peak	PM Peak
Abbott Street East / Castlefrank Road at Terry Fox Drive	Signalized	Weekday AM, Mid-day, and PM	27-Nov-18	08:00 09:00	16:15 17:15
Abbott Street East at Cranesbill Road / Rouncey Road	Roundabout		08-Jan-25	08:30 09:30	15:15 16:15
Abbott Street East at Triangle Street	Stop Control		08-Jan-25	08:30 09:30	15:30 16:30
Abbott Street East at Robert Grant Avenue	Roundabout		27-Sep-22	08:15 09:15	17:00 18:00
Triangle Street at Honeylocust Ave	Stop Control		08-Jan-25	07:30 08:30	15:30 16:30
Triangle Street at Cranesbill Road	Stop Control		08-Jan-25	08:30 09:30	15:15 16:15
Hazeldean Road at Terry Fox Drive	Signalized		29-Oct-24	07:45 08:45	16:00 17:00
Terry Fox Drive at Sobey's Access	Signalized		19-Jan-22	07:45 08:45	16:00 17:00

Existing (2025) traffic volumes were developed for the morning and afternoon peak hours based on the above noted TMC data. The typical morning peak hour was observed from 08:30 to 09:30 while the afternoon peak was observed from 15:30 – 16:30, except for the intersection of Abbott Street East / Castlefrank Road at Terry Fox Drive which had a later afternoon peak hour from 16: 15 – 17:15.

the older count at the Terry Fox Drive / Abbott Street East intersection were projected to the 2025 baseline study year utilizing a 2% annual growth rate and balanced to more recent count data at the adjacent intersections on Terry Fox Drive and Abbott Street East. An annual growth rate of 2.0% is expected to adequately capture background growth and remain consistent with past area studies. Further rationale for this growth rate is provided in Section 6.4. The developed existing (2025) vehicle traffic volumes are illustrated in Figure 13. Pedestrian and bike volumes are summarized in Table 2. No bike volumes were captured within the study area except at the intersection of Abbott Street East at Robert Grant Avenue, which was also the sole traffic count conducted during summer months.

Table 2: Existing (2025) Pedestrian and Bike Volumes

Location	AM Peak				PM Peak			
	NB	SB	EB	WB	NB	SB	EB	WB
<b>Pedestrian Volumes</b>								
Abbott Street East / Castlefrank Road at Terry Fox Drive	3	2	1	3	1	4	1	3
Abbott Street East at Cranesbill Road / Rouncey Road	0	3	0	0	0	0	0	1
Abbott Street East at Triangle Street	4	2	7	3	5	0	11	6
Abbott Street East at Robert Grant Avenue	7	33	6	41	3	4	10	1
Triangle Street at Honeylocust Avenue	2	1	0	3	0	0	0	0
Triangle Street at Cranesbill Road	0	1	0	0	0	0	0	0
<b>Bike Volumes</b>								
Abbott Street East at Robert Grant Avenue	29	2	33	29	2	3	1	5
NB - Northbound SB - Southbound EB - Westbound WB - Westbound								

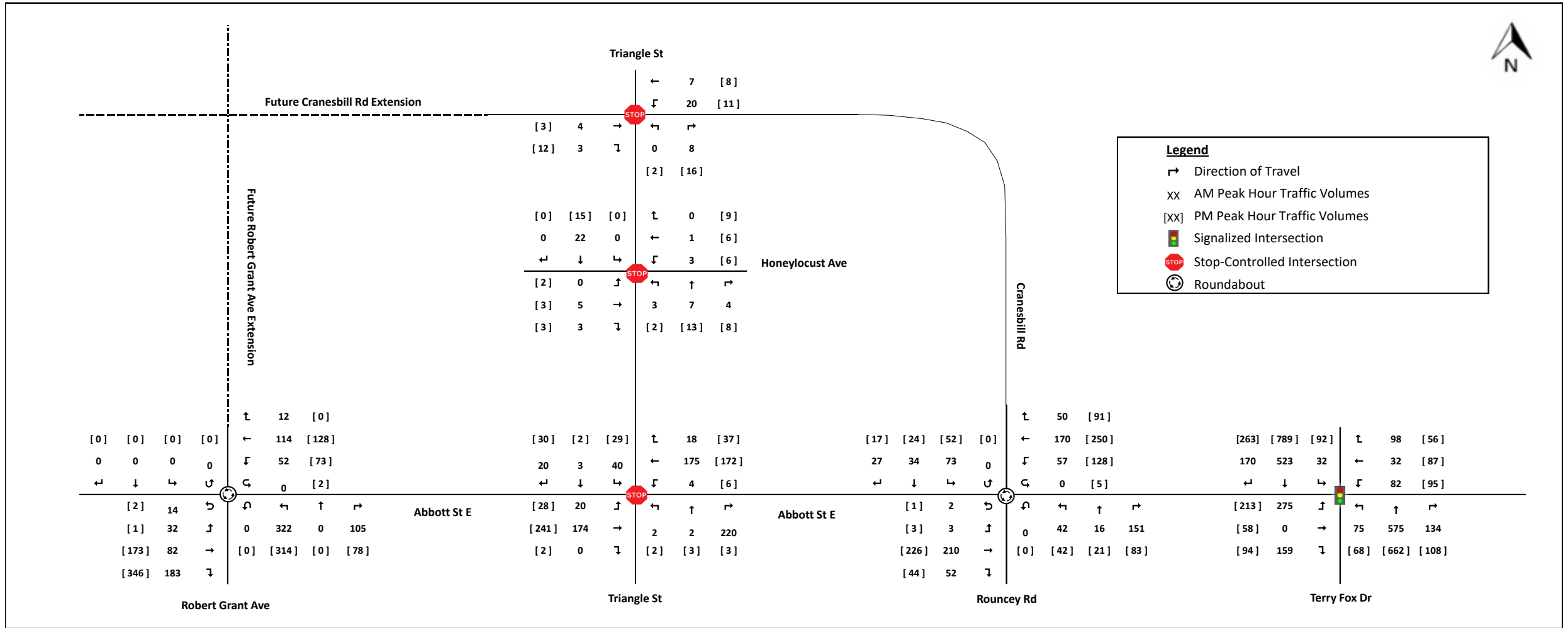


Figure 13: Existing (2025) Vehicle Traffic Volumes

### 3.7.1 Existing Mode Shares

It is noted that traffic data collected in support of this study was collected during winter months and the greater surrounding Fernbank development area is still in development/construction. As such, it is anticipated that active modes of transportation may be underrepresented in the provided traffic data. Table 3 summarizes the overall mode shares to, from, and within the Kanata – Stittsville district based on the most recent 2011 TRANS Origin-Destination (O-D) Survey, provided in Appendix C.

Table 3: Kanata / Stittsville - Mode Share (Trans 2011 O-D Survey)

<b>Trips By Mode</b>	<b>AM Peak (06:30 - 08:59)</b>	<b>PM Peak (15:30 - 17:59)</b>
<b>Auto Driver</b>	<b>56%</b>	<b>62%</b>
<b>Auto Passenger</b>	<b>12%</b>	<b>19%</b>
<b>Transit</b>	<b>12%</b>	<b>9%</b>
<b>Bicycle</b>	<b>0%</b>	<b>0%</b>
<b>Walk</b>	<b>8%</b>	<b>5%</b>
<b>Other*</b>	<b>11%</b>	<b>4%</b>
<b>Total</b>	<b>100%</b>	<b>100%</b>

\*Other indicates modes such as school bus, paratransit, motorcycle / scooter, taxi, train, or airplane

It is worth noting, TRANS completed an updated Origin-Destination (O-D) survey in the Fall of 2022. At the time of reporting, only preliminary results are available, which highlight city wide mode shares. While detailed O-D data is not available specifically for the Kanata-Stittsville district, city wide auto vehicle and auto passenger mode shares remain relatively consistent in 2022 as compared to 2011. A significant change that is highlighted is the shift from transit to active modes of transportation. The transit mode share saw a decrease of almost 5.5 % from 2011 to 2022 while active transportation (walking, cycling, and micromobility) saw an overall increase of 5.3%. This is identified as a potential outcome of a higher proportion of work from home employment.

### 3.8 Historical Collision Review

The latest five-year (2018-2022) collision data was provided by the City of Ottawa, and included in Appendix C. The data is summarized in Table 4. As illustrated, most intersections within the study area have relatively few collisions except for the Abbott Street East / Castlefrank Road at Terry Fox Drive intersection which had 46 at intersection and intersection related collisions. Of these collisions, as outlined in Table 5, three angle collisions, six turning movement, one sideswipe, 28 rear-end, seven SMV other and one other collision were recorded at the intersection. Thirteen rear-end collisions involved southbound vehicles, one of which also involved an eastbound vehicle; twelve involved northbound vehicles, one of which involved three northbound vehicles; and three involved eastbound vehicles. Seven collisions were classified as SMV Other, five of which involved a southbound vehicle, and two of which involved turning westbound vehicles. This is to be expected given the traffic volumes identified in Section 3.7 and is typically reflective of collision patterns in urban and sub-urban environments. Overall, no significant trends or safety concerns were identified. No collisions were identified which involved a pedestrian or cyclist. A total of 16 collisions within the study area resulted in a non-fatal injury and no fatal collisions were recorded.

Table 4: Area Collision History (2018 – 2022) Summary

Location	Collision Frequency						Most Common Initial Impact Type	Pedestrian	Non-Fatal Injuries
	2018	2019	2020	2021	2022	Total			
<b>At Intersection / Intersection Related Collisions</b>									
Abbott Street at Cranesbill Road / Rouncey Road (0018110)	0	3	2	0	2	7	Angle	0	2
Abbott Street at Lanceleaf Way / Malahat Way (0018144)	0	0	1	0	0	1	Angle	0	0
Abbott Street at Lift Lane (0018138)	0	1	0	0	0	1	Turning Movement	0	0
Abbott Street at Ponderosa Street (0018146)	0	0	0	0	1	1	SMV other	0	0
Abbott Street at Robert Grant Avenue (0017398)	1	2	0	0	1	4	SMV other	0	2
Terry Fox Drive at Abbott Street / Castlefrank Road (0011757)	10	6	7	15	8	46	Rear End	0	10
<b>Midblock Collisions (Non-Intersection / At / Near Private Driveway)</b>									
Cranesbill Road from Abbott Street to Nordman Fire Court	0	2	1	1	0	4	SMV unattended vehicle	0	2
Lift Lane between Abbott Street and Triangle Street	0	0	0	1	0	1	SMV unattended vehicle	0	0
Malahat Way between Abbott Street and Ego Terrace	1	0	1	0	0	2	SMV unattended vehicle	0	0
Nordman fire Court between Cranesbill Road and End	0	0	1	0	2	3	SMV unattended vehicle	0	0
Oxalis Crescent between Ponderosa Street N & Ponderosa Street S	2	1	0	0	0	3	SMV unattended vehicle	0	0
Triangle Street between Abbott Street and Plank Street	0	1	0	0	0	1	SMV unattended vehicle	0	0
Triangle Street between Thunderbolt Street / Twist Way and Warrior Street	1	1	0	0	0	2	SMV unattended vehicle	0	0

Location	Collision Frequency						Most Common Initial Impact Type	Pedestrian	Non-Fatal Injuries
	2018	2019	2020	2021	2022	Total			
Twist Way between Abbott Street and Ego Terrace	0	0	1	0	0	1	Angle	0	0
Twist Way between Ego Terrace and Triangle Street	0	1	1	0	0	2	SMV unattended vehicle	0	0
Warrior Street between Backbend Terrace and Triangle Street	0	0	1	0	0	1	SMV unattended vehicle	0	0

Table 5 Terry Fox Drive at Abbott Street E / Castlefrank Road Intersection Collisions

Impact Type	Number of Collisions	NB	SB	EB	WB
Angle	3	NB / WB (2); SB / EB / EB (1)			
Turning Movement	6	NB / SB			
Sideswipe	1	NB			
Rear End	28	12	13	3	-
SMV Other	7	-	5	-	2
Other	1	SB / WB			

## 4.0 PLANNED CONDITIONS

### 4.1 Road Network Modifications

Road network modifications are assumed based on the current City of Ottawa Transportation Master Plan (TMP) which was adopted in 2013. However, it is noted that at the time of this report, an update to this plan is currently being developed but updated road network implementation plans have not yet been produced.

The Fernbank Community Design Plan (CDP) was also completed in 2009 and encompassed the area between Stittsville, Kanata West, and Kanata South, and extending south from Hazeldean Road to Fernbank Road. The transportation network identified within the Fernbank CDP is illustrated in Figure 14. Much of the proposed road network has already been constructed or is anticipated to be constructed through continued development of the community. Robert Grant Avenue (Illustrated as N-S Arterial within Fernbank CDP) is currently under construction and anticipated to be completed in the near future (1-2 years). The roadway is being constructed as a two-lane roadway; however, it is anticipated to be widened in the future to accommodate addition development growth. The intersection of Robert Grant Avenue at Cranesbill Road is expected to be designed as a roundabout. Upon widening of Robert Grant Avenue, the intersection is expected to be converted to a signalized intersection.

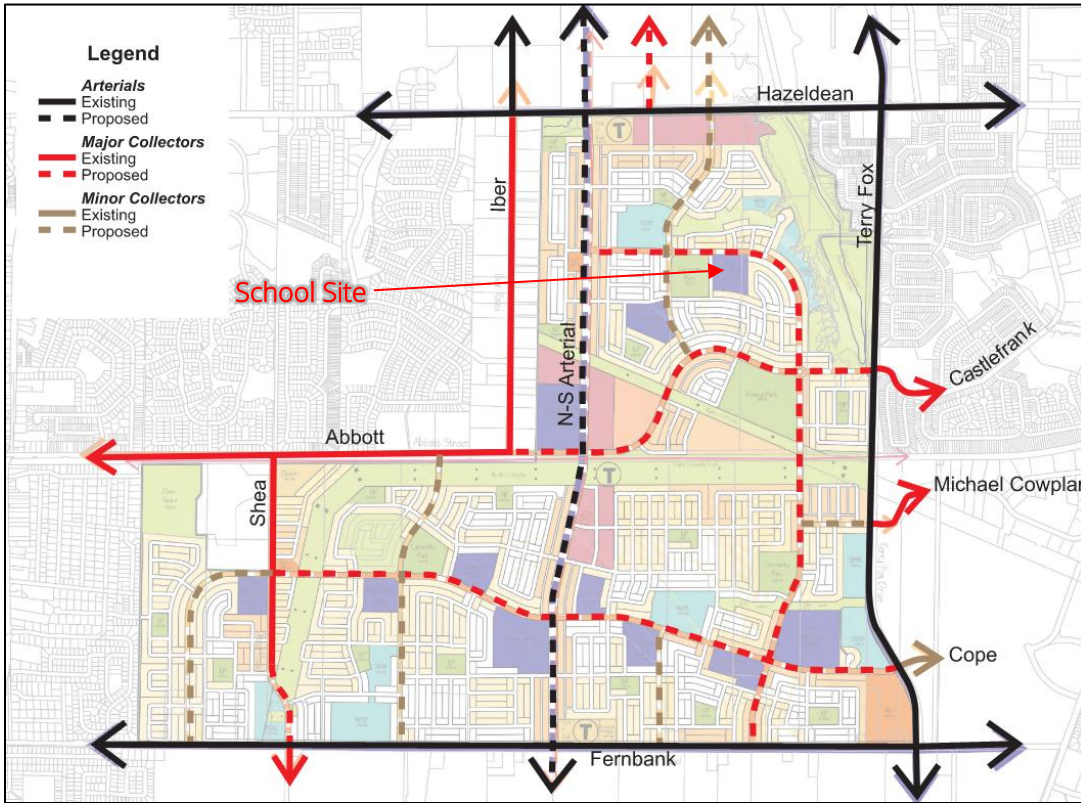


Figure 14: Proposed Major Road Network (Fernbank Community TMP, 2009)

Based on the 5618 Hazeldean Road Community Transportation Plan, Draft Plan of Subdivision, illustrated in Figure 15, Backend Terrace (Street No. 1) is anticipated to provide north-south connectivity from Cranesbill Road to Abbott Street East and connecting to Honeylocust Avenue.

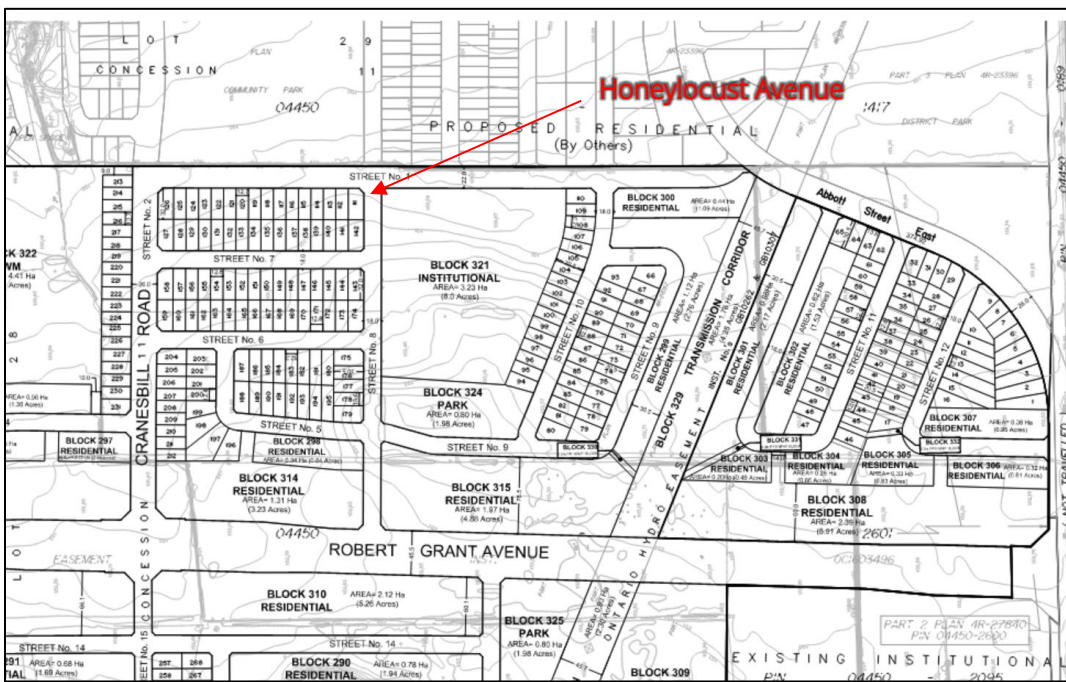


Figure 15: 5618 Hazeldean Road Draft Plan of Subdivision

The current City of Ottawa TMP (2013) 2031 Road Network and Affordable Network concept also indicates a number of other area network modifications as illustrated in Figure 16 and Figure 17, respectively. As shown, Terry Fox Drive is also anticipated to be widened from two to four lanes, south of Castlefrank Road. It is noted the phase implementation timing illustrated in the 2031 Affordable Road network is largely out of date and subject to change.

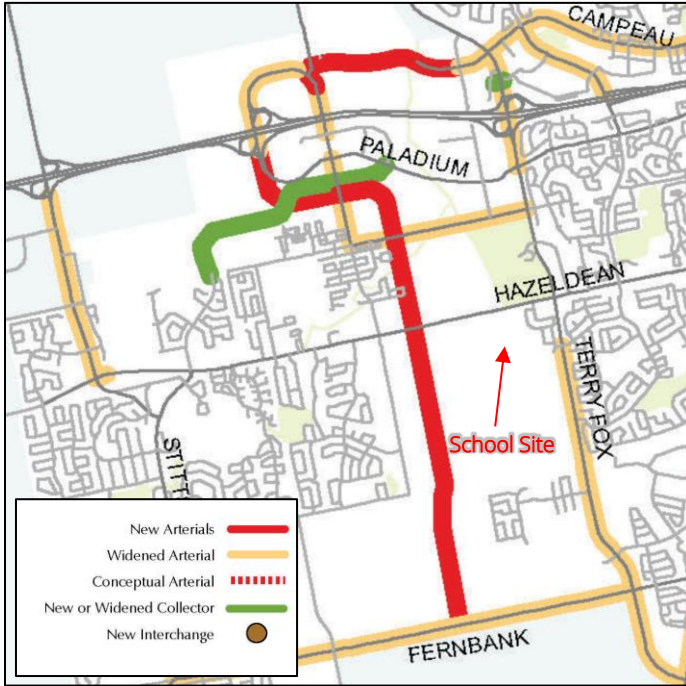


Figure 16: 2031 Affordable Road Network Concept

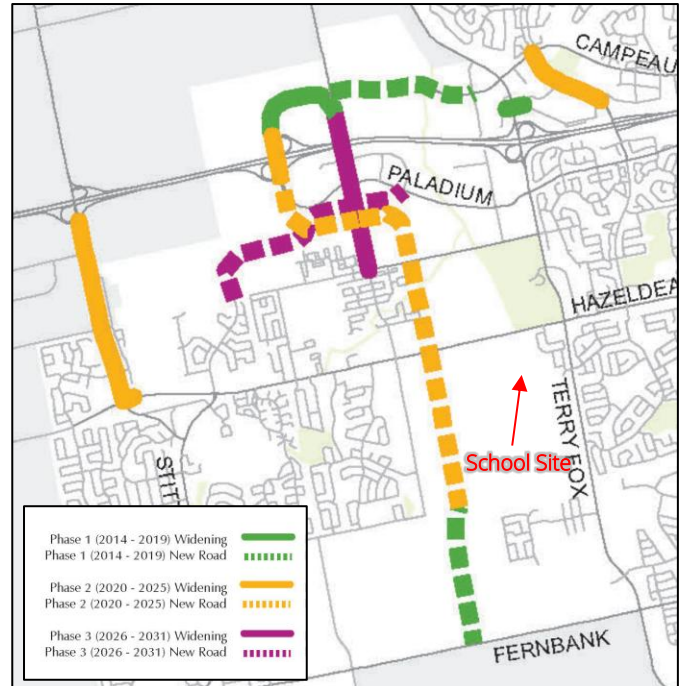


Figure 17: 2031 Affordable Road Network Concept

## 4.2 Transit

Upon implementation of the *New Ways to Bus* OC Transpo service, additional transit options will be available within study area, as illustrated in Figure 18. New area routes are expected to include local route 163 and 60. Route 163 is expected to serve as a connection between the Timbermere neighbourhood of Stittsville and Terry Fox Station in Kanata. Route 163 will provide all week local service to Stittsville and Kanata via Stittsville Main Street, Abbott Street East and Castlefrank Road, while resulting in the addition of transit stops at the Triangle / Abbott intersection. Route 60 will run between Kanata South and Terry Fox Station, with peak period extension to Tunney's Pasture Station. Route 67 is not anticipated to be changed in the future.

The current City of Ottawa 2013 TMP, Rapid Transit and Transit Priority 2031 Network and Affordable Network concepts are illustrated in Figure 19 and Figure 20, respectively. As illustrated, some additional potential changes to the study area transit service are expected. A potential Bus Rapid Transit (BRT) is illustrated to travel along Robert Grant Avenue; however, the affordable network concept illustrates this as a Transit Priority Corridor (Isolated Measures).

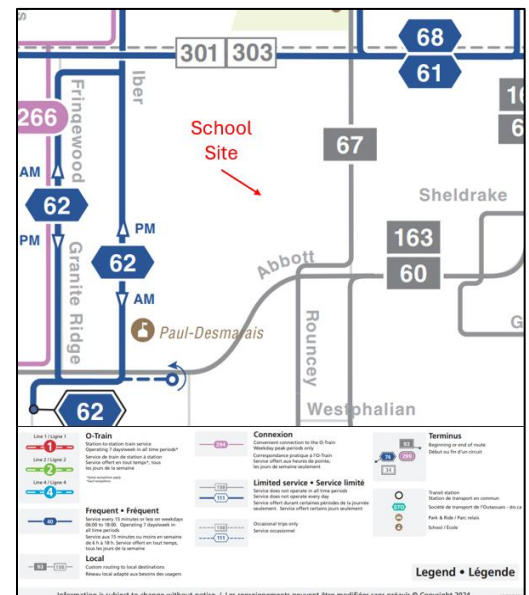


Figure 18: Area Transit Routes (Courtesy of OC Transpo)

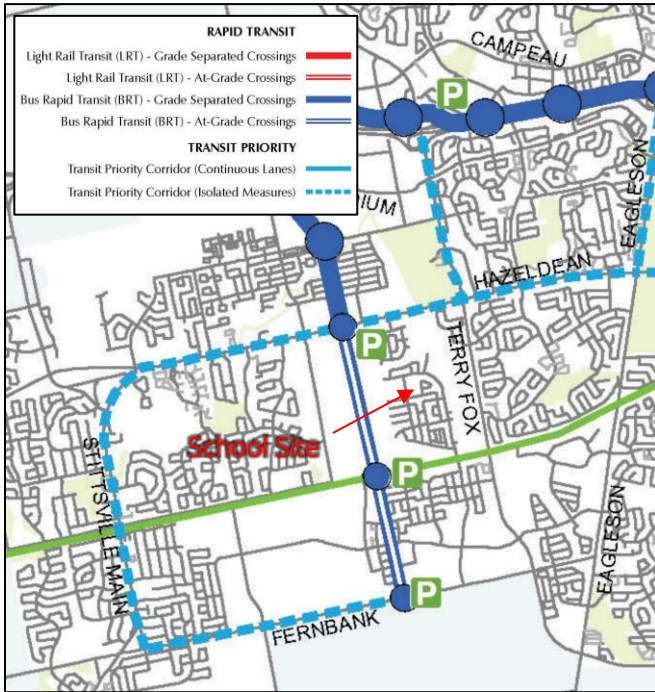


Figure 19: Rapid Transit and Transit Priority - 2031 Network Concept

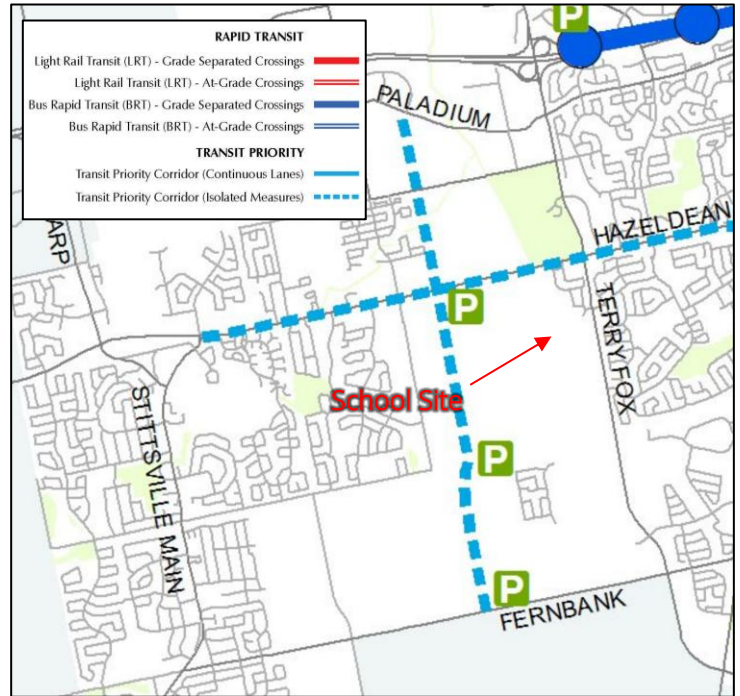


Figure 20: Rapid Transit and Transit Priority - 2031 Affordable Network Concept

### 4.3 Future Active Transportation

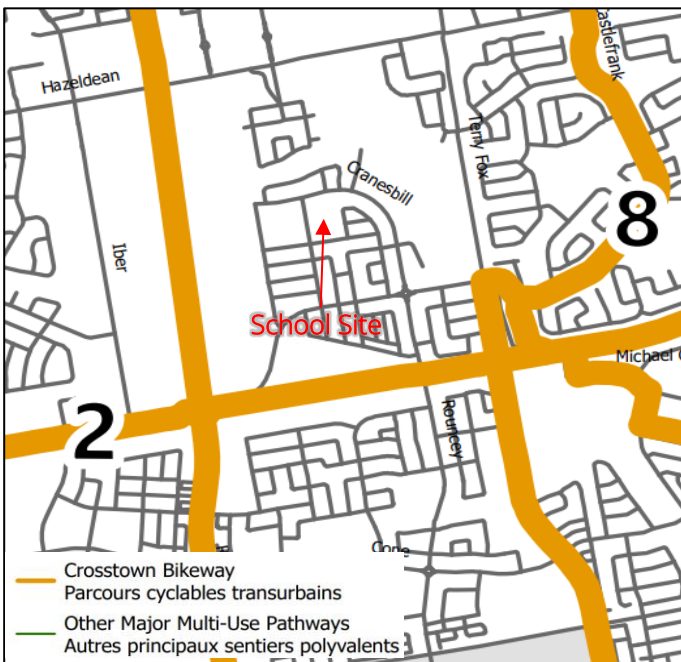


Figure 21: Future Cycling Network

Figure 21 illustrates the City of Ottawa 2023 TMP future cycling network. As illustrated, the Ottawa-Carleton Trailway (part of the Trans-Canada Trail) forms part of Crosstown Bikeway Route 2, while Terry Fox Drive and Castlefrank Road form part of Crosstown Bikeway Route 8. Robert Grant Avenue. A crosstown bikeway also connects Castlefrank Road and Eagleson Road (OR 49) via Castle Glen Crescent, the Ottawa-Carleton Trailway, Didsbury Road, Michael Cowpland Drive, Akerson Road, and the multi-use pathway connection between these roads.

The Fernbank CDP identifies the anticipated pedestrian pathways upon full build-out as illustrated in Figure 22. While many are already constructed, continued development of the community will see additional pathways, with connectivity to Robert Grant Avenue, Hazeldean Road (OR 36), Abbott Street.



Figure 22: Fernbank Community Design Plan - Pathways

#### 4.4 Future Background Developments

One active development application was identified within the vicinity of the site.

- 5000 Robert Grant Avenue, Site Plan Control (Application # D07-12—24-0172, On Circulation; Initial Submission Review). The development will be located along Robert Grant Avenue, south of Abbott Street East. The development is expected to include an 18-storey tower, 9-storey building and a 6-storey building with a total of 504 units and 651 parking spaces.

Two approved developments which have not begun construction were identified, including the following:

- 5618 Hazeldean Road, Plan of Subdivision (Application # D07-16—16-0020, Post Approval). As illustrated in Figure 23, the development will be located directly west of the study area. The residential subdivision is expected to include a neighborhood commercial block, elementary school, transit station block, and parks / open space. The overall site is expected to have a total of 1845 residential units, with low-, medium-, and high-density housing types. A Community Transportation Study was completed in June 2020, with subsequent responses to comments provided.

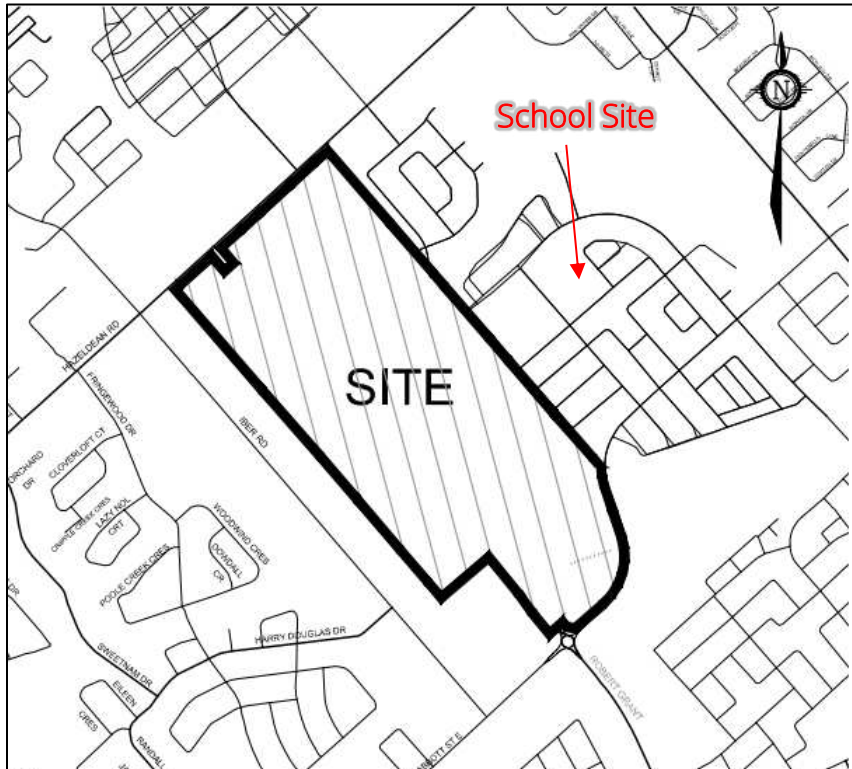


Figure 23: 5618 Hazeldean Road Site Location

- 5315 Abbott Street – Secondary School Extension (Application # D07-22-0157, Post Approval). The expected development includes an addition to the existing French Catholic School located within the north-west quadrant of the Abbott Street East at Robert Grant Avenue intersection. The addition is expected to include 18 classrooms in place of the existing portables. As such, an increase in the number of students and staff is not expected.

One approved development which has begun construction was identified, including the following:

- 360 Bobolink Ridge, Plan of Subdivision (Application # D07-12-21-0163, Post Approval). The mixed-use development, located at the corner of Bobolink Ridge and Robert Grant Avenue, includes the construction of two stand-alone six-storey apartment buildings, two six-storey mixed-use buildings, one low-rise commercial/office building and four amenity areas. A total of 407 rental apartments, 192 underground parking spaces, 358 surface parking spaces, and 208 bicycle spaces are expected. Construction began in August 2024 and is expected to be complete by the summer of 2025.

## 5.0 DEVELOPMENT GENERATED TRAVEL DEMAND

### 5.1 Trip Generation and Mode Shares

While the Institute of Transportation Association (ITE) Trip Generation manual provides rates for various institutional land uses, for the purposes of estimating development-generated trips, detailed occupancy data was provided by OCSB. As such, a first principles has been adopted as the methodology for person trip estimates. Table 6, provides a summary of the estimated site occupancy according to various site aspects. As illustrated, the site is expected to accommodate a total of 610 persons (including staff, and students).

Table 6: Site Occupancy Estimates

Occupancy Type	Occupancy (Persons)
Childcare Centre Activity Room (18 Month to 30 month)	16
Childcare Centre Activity Room (30 Month to 59 Month)	24
16 Classrooms	368
6 Kindergarten Rooms	156
Staff	46 (including 10 in childcare)
<b>Total</b>	<b>610</b>

Given the nature of the site, mode shares are expected to differ according to the different site operations. Staff would be expected to have similar mode shares to the general surrounding Stittsville / Kanata district as described in Table 3 and would likely consist of primarily inbound trips during the morning and outbound trips during the afternoon. Young children attending the childcare centre would likely be dropped off/picked up by a parent. Children attending elementary school / kindergarten would have a mix of school bus trips, walking, or being dropped off/picked up by parents via vehicle or walking trips.

Specific for staff trip estimates, while most staff would arrive on site and remain on site for the duration of the school day, some additional ancillary and visitor trips are expected which could arrive and depart during the same peak study hour. These ancillary type trips are expected to be primarily for business related reasons (maintenance, visits from school board staff, etc.) and are assumed to be primarily vehicle trips. As such, to provide a conservative estimate, an additional 20% of the staff numbers were assumed as in/out trips during both morning and afternoon peak hours. To account for staff arriving or departing during off-peak hours, the overall trips were reduced by 20%. Staff trip estimates by mode share are summarized in Table 7. These mode shares reflect the mode shares illustrated in Table 3, with some reduction in transit mode shares to reflect the 2022 O-D trends and area study area specific context.

Table 7: Staff – Person Trips by Mode Share

Staff Trips*	Mode Share		AM Peak			PM Peak		
	AM	PM	In	Out	Total	In	Out	Total
Auto Driver	60%	65%	26	7	33	7	28	35
Auto Passenger	15%	19%	6	0	6	0	8	8
Transit	4%	2%	2	0	2	0	1	1
Bicycle	6%	3%	3	0	3	0	1	1
Walk	15%	11%	6	0	6	0	5	5
Other	0%	0%	0	0	0	0	0	0
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>43</b>	<b>7</b>	<b>50</b>	<b>7</b>	<b>43</b>	<b>50</b>

\* Assumes 80% of Staff arrive during morning peak and leave during afternoon peak

\*Additional 20% of staff assumed as ancillary in/out Trips

Similarly, for parents dropping off young children (18 to 59 months) at the childcare centre, these parents would likely be dropping their children off. As such, these trips would have similar mode shares to those of the school staff. However, while attendance to the childcare centre would not be restricted to the school catchment area, generally trips would be expected originate within closer proximity to the school than for staff. Overall, these types of trips are expected to be primarily walking and vehicle trips. Additionally given that daycare centres can typically have extended operational hours compared to schools, the overall development generated trips were reduced by 20%, as summarized in Table 8.

*Table 8: Childcare Centre – Person Trips by Mode Share*

Childcare Centre	Mode Share		AM Peak			PM Peak		
	AM	PM	In	Out	Total	In	Out	Total
Auto Driver	70%	70%	28	28	56	28	28	56
Walk	30%	30%	12	12	24	12	12	24
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>40</b>	<b>40</b>	<b>80</b>	<b>40</b>	<b>40</b>	<b>80</b>

In order to assist in estimating mode shares for the children attending elementary school and kindergarten, OCSB provided the preliminary school catchment area. Additionally, school bus eligibility per the Ottawa Student Transportation Authority (OSTA) is based on walking distance to the school. For Junior and Senior Kindergarten, a 0.8 km walk or longer qualifies for bus eligibility and for grades one to eight, 1.6 km walking distance or longer qualifies for bus eligibility. Additional considerations are also afforded to eligibility criteria such as walkability and hazards including major road crossings. In some instances, walking routes may be within the walking limits, however, would require students to walk on roads which may not have adequate pedestrian protections for vulnerable road users. Based on the review of the preliminary catchment area and the above considerations, the anticipated bus eligible areas are illustrated in Figure 24. Residential unit counts were also estimated by Development Zones to provide insight on potential trip distributions and mode shares. As illustrated, approximately 35% of the catchment area residential units are within walking distance and not considered eligible for buses. Based on the assessment of the catchment area and neighbouring residential unit distribution, approximately 183 students are expected to be in walking distance while the remaining 341 are bus eligible. However, some proportion of students regardless of bus eligibility would likely be picked up/dropped off at school by a parent by vehicle. This proportion is assumed to be approximately 10% of peak trips with an estimated 20% (2% overall trips) of the auto trips picking up / dropping off two students. Approximately 2% of students are expected to bike. As such, the remaining students would either walk or bus based on eligibility. For the purposes of walking trips, it is assumed that some students would also be accompanied by a parent or a day care provider. As such, walking trips were increased by a further 20% and considered as both in and out trips.

For the purposes of assessing future network capacity and development impacts on the network, the 300 students expected to bus are anticipated to be accommodated via a total of 10 school buses, resulting in an average occupancy of 30 students per bus. Based OSTA, a typical normal loading capacity ranges between 48 and 70 students per bus, however, buses may accommodate other schools as well. Bus drivers have been factored into the person trips estimates as a single in/out trip for each bus during the peak hours.

Based on the above assessment and assumptions, the overall development generated trips for students in kindergarten and elementary school students are summarized in Table 9 while parent trips are summarized in Table 10, and the total combined trips illustrated in Table 11.

Table 9: Elementary School and Kindergarten – Person Trips by Mode Share for Students

Elementary School / Kindergarten	Mode Share		AM Peak			PM Peak		
	AM	PM	In	Out	Total	In	Out	Total
Auto Driver	0%	0%	0	0	0	0	0	0
Auto Passenger	10%	10%	52	0	52	0	52	52
School Bus	57%	57%	300	0	300	0	300	300
Bicycle	2%	2%	10	0	10	0	10	10
Walk	31%	31%	162	0	162	0	162	162
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>524</b>	<b>0</b>	<b>524</b>	<b>0</b>	<b>524</b>	<b>524</b>

Table 10: Elementary School and Kindergarten – Person Trips by Mode Share for Parents

Elementary School / Kindergarten	Mode Share*		AM Peak			PM Peak		
	AM	PM	In	Out	Total	In	Out	Total
Auto Driver	80%	80%	42	42	84	42	42	84
Auto Passenger	0%	0%	0	0	0	0	0	0
School Bus	0%	0%	10	10	20	10	10	20
Bicycle	0%	0%	0	0	0	0	0	0
Walk	20%	20%	32	32	64	32	32	64
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>84</b>	<b>84</b>	<b>168</b>	<b>84</b>	<b>84</b>	<b>168</b>

\* Mode share % reported based on total student trips

Table 11: Elementary and Kindergarten – Total Trips by Mode Share for Parents and Students

Elementary School / Kindergarten	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Auto Driver	42	42	84	42	42	84
Auto Passenger	52	0	52	0	52	52
School Bus	310	10	320	10	310	320
Bicycle	10	0	10	0	10	10
Walk	194	32	226	32	194	226
<b>Total</b>	<b>608</b>	<b>84</b>	<b>692</b>	<b>84</b>	<b>608</b>	<b>692</b>



Figure 24: Preliminary Future Attendance Boundary

Overall, considering all site operations, the development-generated person trips are summarized in Table 12 while the auto vehicle specific trips are illustrated in Table 13.

Table 12: Development-Generated Person Trip Estimates

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Auto Driver	90	71	161	71	92	163
Auto Passenger	58	0	58	0	60	60
Public Transit	312	10	322	10	311	321
Bicycle	13	0	13	0	11	11
Walk	210	42	252	42	209	251
School Bus	310	10	309	10	299	309
<b>Total</b>	<b>683</b>	<b>123</b>	<b>806</b>	<b>123</b>	<b>683</b>	<b>806</b>

Table 13: Development-Generated Auto Trip Estimates

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Auto Driver	90	71	161	71	92	163
School Bus	10	10	20	10	10	20
<b>Total</b>	<b>100</b>	<b>81</b>	<b>181</b>	<b>81</b>	<b>102</b>	<b>183</b>

## 5.2 Future Mode Share Targets

Given the nature of the site, the anticipated mode shares described in Section 5.1 are not likely to be able to significantly change. While mode share improvements could be achieved for staff, the overall person-generated trips for staff are relatively small compared to the trips generated by the student population which are primarily school bus and walking trips. Additionally, no significant changes in available transit options are anticipated which could result in increased transit mode shares.

## 5.3 Trip Distribution

Trip distribution is expected to differ for staff and students / parents. The anticipated trip distribution for students and parents is based on the catchment area and residential unit estimates provided in Figure 24. The resulting estimated distribution is summarized in Table 14.

Table 14: Preliminary Trip Distribution - Students and Parent Trips

To/From	VIA	In / Out (%)
North / North-West	Future Robert Grant Avenue / Cranesbill Road	37%
South-West	Abbott Street / Future Robert Grant Avenue / Cranesbill Road	33%
North-East	Terry Fox Drive / Abbott Street	5%
South	Cranesbill Road / Triangle Street	11%
Internal*	Local Road Network	14%
<b>Total</b>		<b>100%</b>

\* Internal trips distributed within immediate surround development area based on population densities (Zone 8 within Figure 24)

Trip distribution for staff is expected to follow the general Kanata / Stittsville distribution trends highlighted within the 2011 TRANS O-D survey, as summarized in Table 15.

Table 15: Preliminary Trip Distribution – Staff / Ancillary Trips

To/From	VIA	In / Out%
East	Terry Fox Drive / Highway 417	19%
South-East (Barrhaven)	Terry Fox Drive / Strandherd Drive	8%
West (Carp / Renfrew County / Carleton Place)	Robert Grant Avenue (Future Extension) / Highway 417	7%
Internal (Kanata / Stittsville) *	-	66%
<b>Total</b>		<b>100%</b>

\* Internal trips distributed according to existing study area travel patterns

It is also noted that staff and ancillary/visitor vehicle trips identified in Table 7, would access the site parking area via the access on Triangle Street. School buses and parent vehicle trips would be predicated on the orientation of the layby areas.

Buses would access the site via Triangle Street from the south while parent vehicle trips would access the site via Honeylocust Avenue from the east.

#### 5.4 Trip Assignment

Given the site build-out anticipated in 2027, the future Robert Grant Avenue Extension and the 5618 Hazeldean Subdivision are anticipated to be completed prior to the site build-out. As such vehicle and bus trips were assigned to the network with the assumption the new arterial and subdivision road network would be complete. Trips were assigned to the network based on the highlighted trip distribution as well as consideration of the proposed site layby areas and parking area. As previously discussed, the Layby area on Triangle Street is anticipated to serve school bus pick up and drop off while the layby area on Honeylocust Avenue is intended for parent pick-up and drop-offs. The layby areas are only expected to be accessible via the side of road in which they are situated which significantly influences travel patterns for site generated trips. Figure 25 illustrates the site generated vehicle trips assigned to the development area road network, while Figure 26.

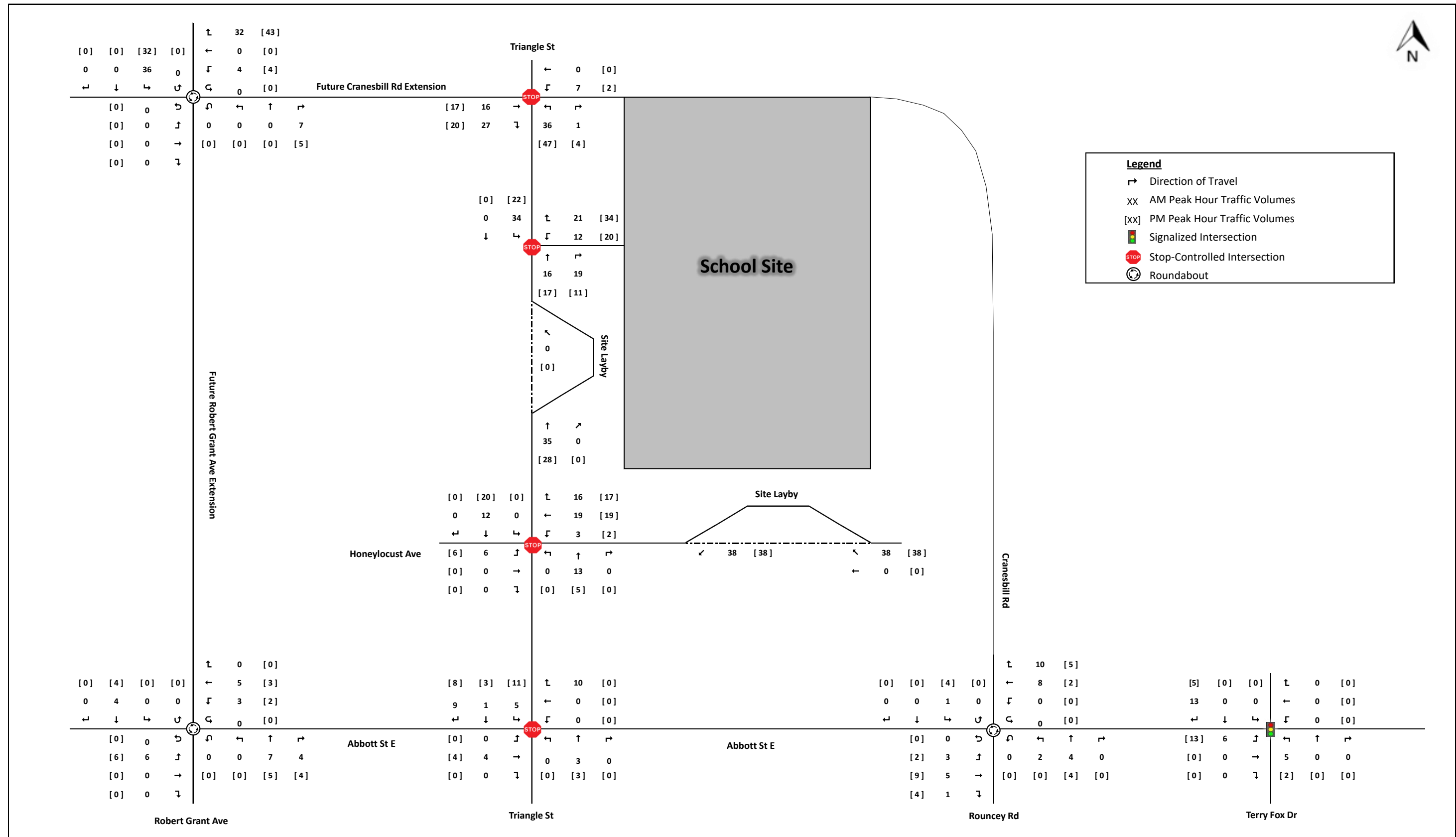


Figure 25: Trip Assignment - Vehicle Trips

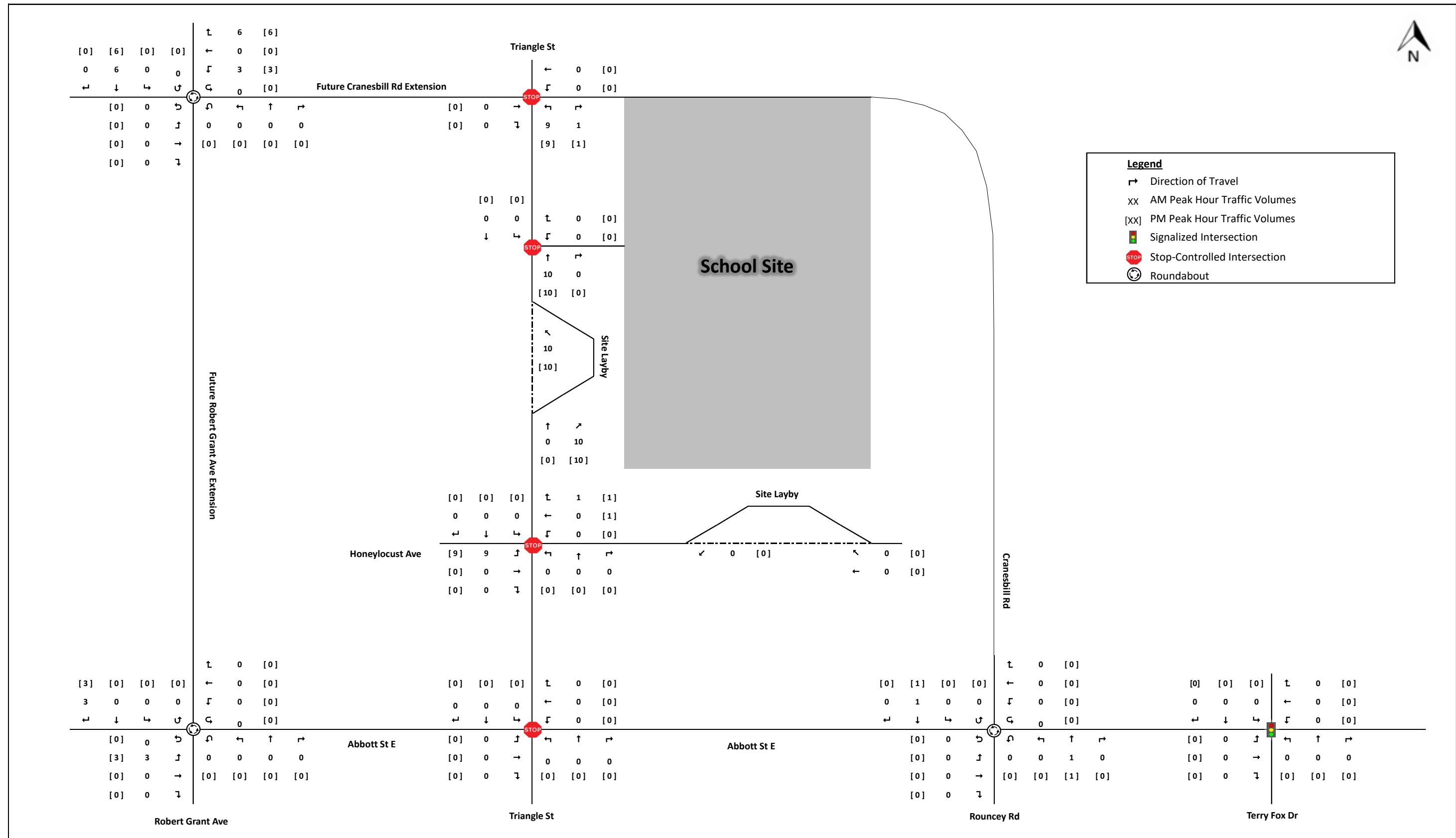


Figure 26: Trip Assignment - Bus Trips

## 6.0 STUDY AREA AND TIME PERIODS

### 6.1 Study Area

The proposed study area as previously outlined in Section 2.1 will include the following intersections:

- Abbott Street East / Castlefrank Rd at Terry Fox Drive;
- Abbott Street East at Cranesbill Road / Rouncey Road;
- Abbott Street East at Triangle Street;
- Triangle Street at Honeylocust Avenue;
- Triangle Street at Cranesbill Road;
- Abbott Street East at Robert Grant Avenue;
- Future development access on Triangle Street, and;
- Future Robert Grant Avenue Extension at Future Cranesbill Road Extension.

### 6.2 Study Time Periods

As identified in Section 3.7, the peak hour of adjacent street traffic generally coincides with the school’s anticipated peak hour of generator (pick up / drop off times). As such, morning and afternoon peak hours are expected to adequately capture the development network impacts.

### 6.3 Horizon Years

It is anticipated that the TIA traffic analysis will include a full build-out scenario (2027) as well as a build-out plus five years (2032) scenario.

### 6.4 Preliminary Background Network Travel Demands

An annual growth rate of 2.0% is expected to adequately capture background growth consistent with past area studies. In order to develop future background network travel demands, existing traffic volumes have been projected to the applicable horizon year utilizing the 2% annual growth rate. Site generated traffic from the identified area TIAs will be distributed along this study’s transportation network based on existing travel patterns. For the future intersection of Robert Grant Avenue at Cranesbill Road and Abbott Street East at Robert Grant Avenue, background traffic volumes will be extracted from the 5618 Hazeldean Road Community Transportation study and adjusted accordingly to the appropriate horizon years. The 5618 Hazeldean Road site-generated traffic will be added to background traffic.

### 6.5 Exemptions Review

Based on review of the proposed development and surrounding road network, a summary of the anticipated TIA Module exemptions is summarized in Table 16.

*Table 16: Preliminary TIA Module Exemptions Review*

Module / Element	Exemption Considerations	Exemption and Rationale
<b>4.1 Development Design</b>		
4.1.1 Design for Sustainable Modes	Required for All TIAs	<b>Required</b>
4.1.2 Circulation and Access	Only required for site plans and ZBA	<b>Required</b>
4.1.3 New Street Network	Only required for plans of subdivision	<b>Exempt</b>
<b>4.2 Parking</b>		
4.2.1 Parking Supply	Only required for site plans and ZBA	<b>Required</b>
4.2.2 Spillover Parking	Deleted per 2023 TIA Guidelines Update	<b>Exempt</b> – Deleted per 2023 TIA Guidelines Update
<b>4.3 Boundary Streets</b>	Required for All TIAs	<b>Required</b>

Module / Element	Exemption Considerations	Exemption and Rationale
4.4 Access Intersections Design	Deleted and moved to 4.9 per 2023 TIA Guidelines Update	N/A
4.5 TDM	Required for All TIAs	Required
4.6 Neighbourhood Traffic Calming	Required 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:	<b>Exempt</b> – all criteria are met except for application type, site plan control.
	1. Access to Collector or Local;	Condition met – access via Triangle Street
	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.	Condition met – proposed school, daycare and adjacent residential use.
	3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision;	Condition not met – application is for site plan control.
	4. At least 75 site-generated auto trips;	To be determined based on anticipated school catchment area and number of students provided bussing, but likely to be met.
	5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	To be determined based on anticipated school catchment area and number of students being provided bussing. Likely to be met during isolated pickup and drop-off periods on Triangle Street compared with existing residential use.
4.7 Transit		
4.7.1 Route Capacity	Required if > 75 site transit trips	<b>Exempt</b> – transit use will be limited to staff only, 46 total staff anticipated.
4.7.2 Transit Priority	Required if > 75 site auto trips	<b>Exempt</b> – while condition is met, limited potential for transit priority on surrounding intersections where transit is present (Abbott Street roundabouts)
4.8 Network Concept	When proposed development generates > 200 person-trips during the peak hour	<b>Exempt</b> , site is zoned for school use.

Module / Element	Exemption Considerations	Exemption and Rationale
	in excess if the equivalent volume permitted by established zoning	
<b>4.9 Intersection Design</b>		
4.9.1 Intersection Control	Required if > 75 site auto trips	<b>Not Exempt</b>
4.9.2 Intersection Design	Required if > 75 site auto trips	<b>Not Exempt</b>

## 7.0 BACKGROUND NETWORK TRAVEL DEMANDS

### 7.1 Transportation Network Plans

Future transportation network plans have been previously identified and discussed in Section 4.0. Significant plans include the construction of the Robert Grant Avenue extension which is anticipated to be completed prior to the 2027 study build-out horizon. Robert Grant Avenue, in addition to providing a new north-south arterial connection will also serve as a designated rapid transit corridor. However, it is noted that the extension at its closest is approximately 600 m away from the school site.

### 7.2 Other Developments

All current and approved area development applications of significance have been identified in Section 4.4. All development generated trips from the respective application TIA's have been accounted for in the estimation of future background traffic volume projections.

### 7.3 Background Traffic Growth

Given the considerable impacts to travel patterns within the study area as a result of the Robert Grant Avenue extension, typical application of area wide growth is not expected to be appropriate. As such, 2022 baseline and 2046 future conditions TRANS model plots for the study area were provided by city staff and are attached in Appendix D. The TRANS model plots were utilized to estimate annual growth rates at a link level which were applied to the respective existing turning movement counts to project volumes to the future study horizon years. Background growth along the study local road network was anticipated to be negligible as there is minimal opportunity for growth through new development or intensification on these roads. As such, it was anticipated that all background traffic volumes increase / decrease would occur primarily on the major network roadways (Arterials and Collectors).

Traffic volumes at the future fourth leg of the Robert Grant Avenue at Abbott Street East intersection and the future intersection of Robert Grant Avenue at Cranesbill Road were developed in consideration of the 5618 Hazeldean Road, Plan of Subdivision, Community Transportation Study, total traffic estimates, provided in Appendix D.

Estimated future 2027 and 2032 background traffic volumes are illustrated in Figure 27 and Figure 28, respectively. Future total volumes have been developed by combining estimated site-generated traffic volumes with future background volumes. Figure 29 and Figure 30 illustrate the future 2027 and 2032 total traffic volumes, respectively.

## 8.0 DEMAND RATIONALIZATION

Based on existing traffic volumes and the projected total traffic volumes extracted from the 5618 Hazeldean Road, Plan of Subdivision, Community Transportation Study, and preliminary review of traffic operations results, it is anticipated the Abbott Street East at Terry Fox Drive eastbound left turn movement operating near capacity. Additionally, the TRANS model plots illustrate an overall reduction in eastbound traffic on Abbott Street from the 2022 baseline to the 2046 future conditions scenarios. However, volume projections developed within the 5618 Hazeldean Road, Plan of Subdivision Community Transportation Study, illustrated significant increase in eastbound traffic along Abbott Street East due to both background growth and development-generated growth. Given the current capacity deficiencies and in consideration to the nature of Abbott Street functioning as a low speed (40 km/h) collector roadway, the increase in traffic volume assigned to Abbott Street East are not expected to be feasible as long delays will result in drivers seeking alternative routes. As such, eastbound traffic on Abbott Street East was adjusted according to the TRANS model growth with the estimated increase illustrated in the Community Transportation Study redistributed along Robert Grant Avenue.

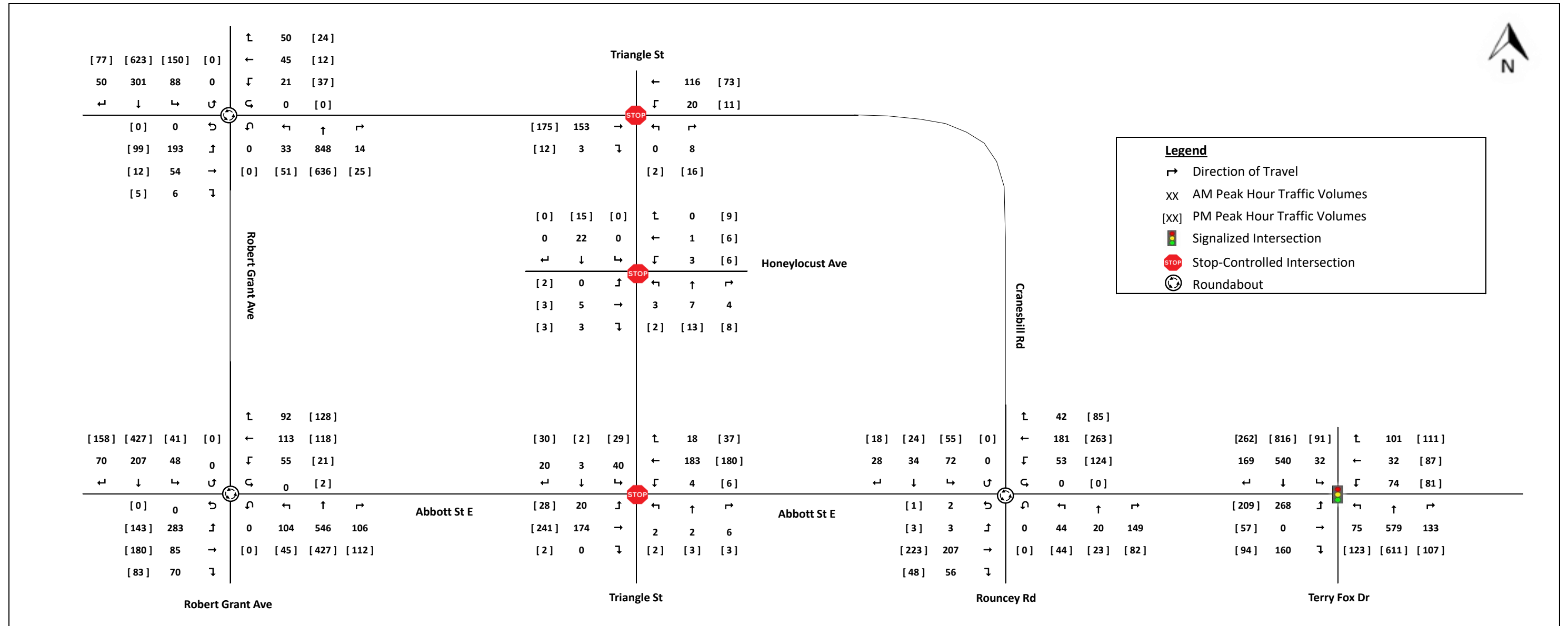


Figure 27: Future (2027) Background Traffic Volumes

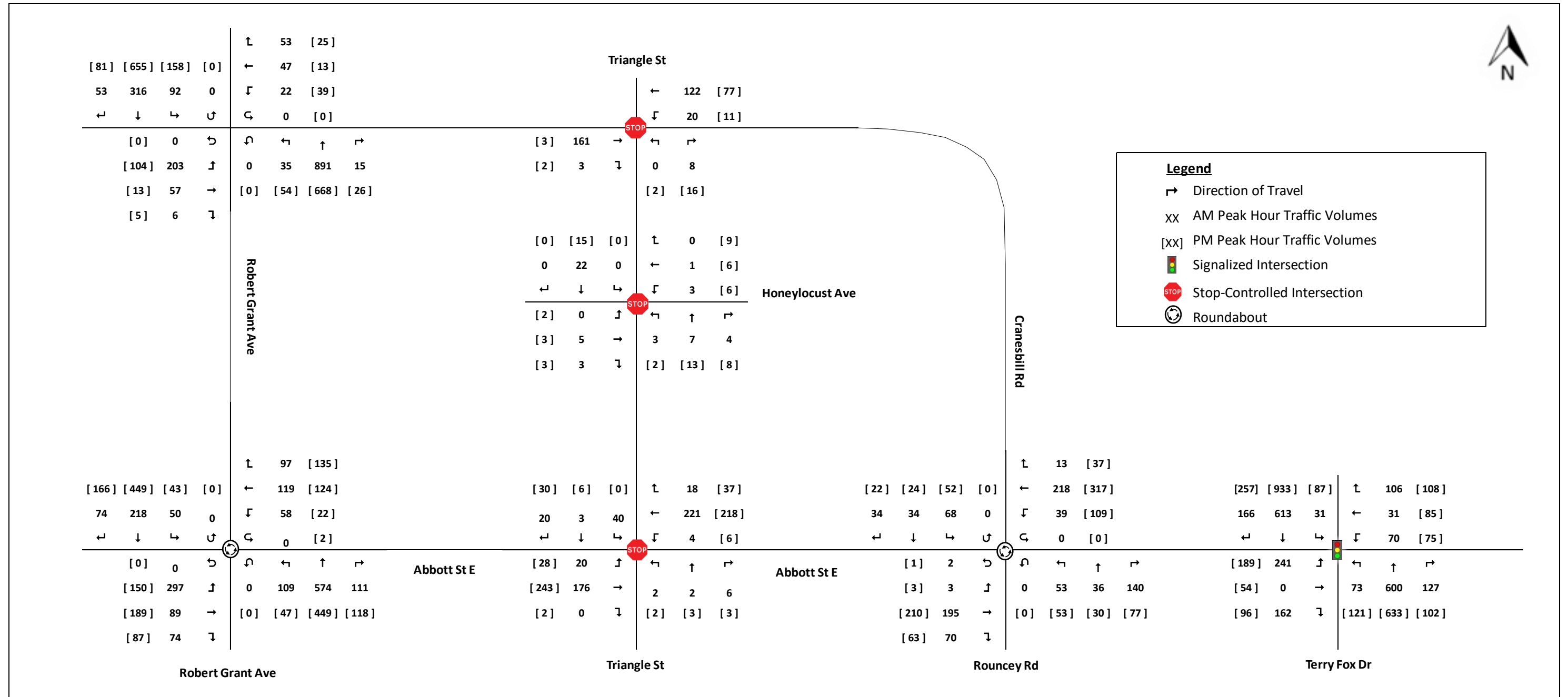


Figure 28: Future (2032) Background Traffic Volumes

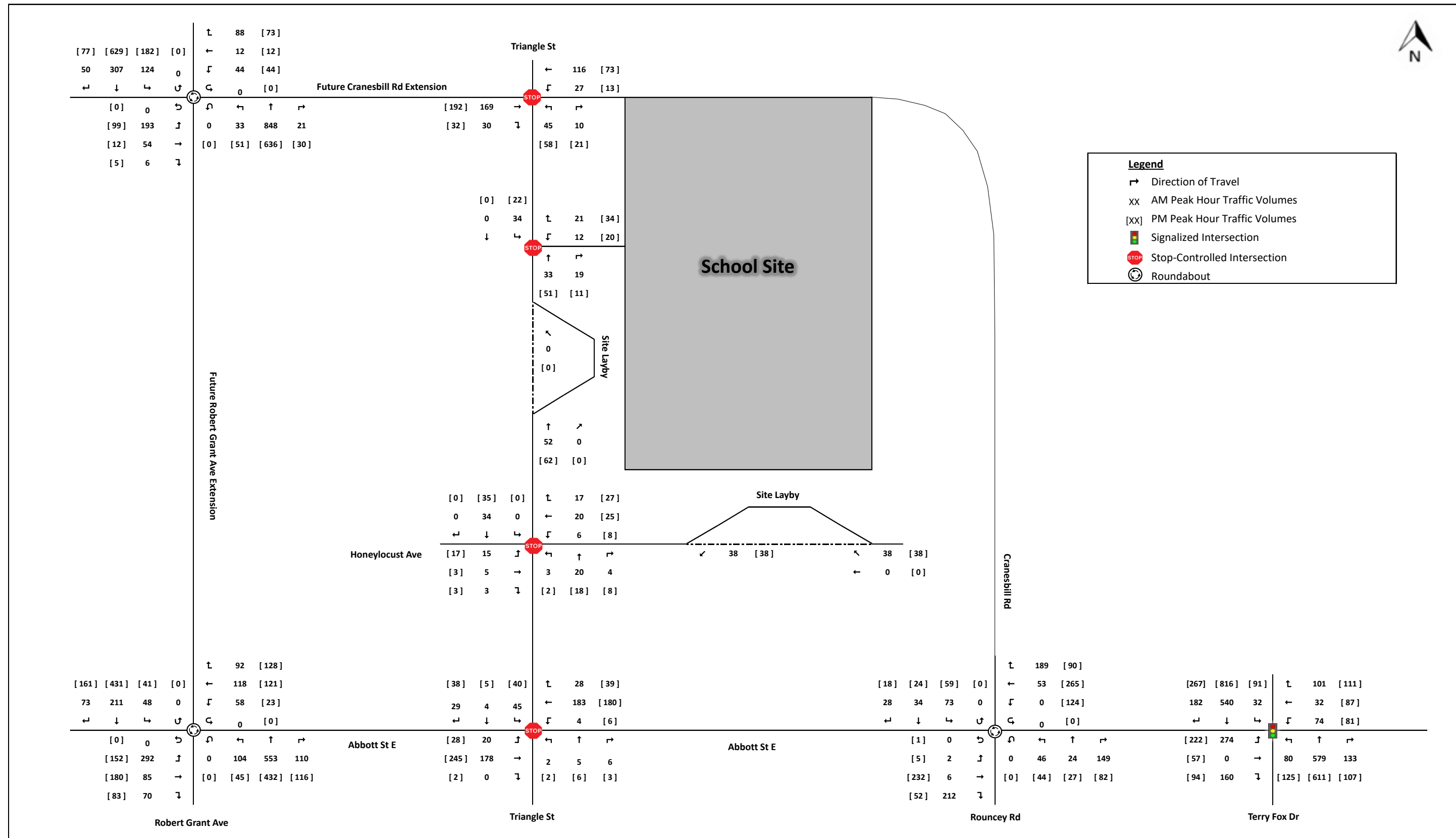


Figure 29: Future (2027) Total Traffic Volumes

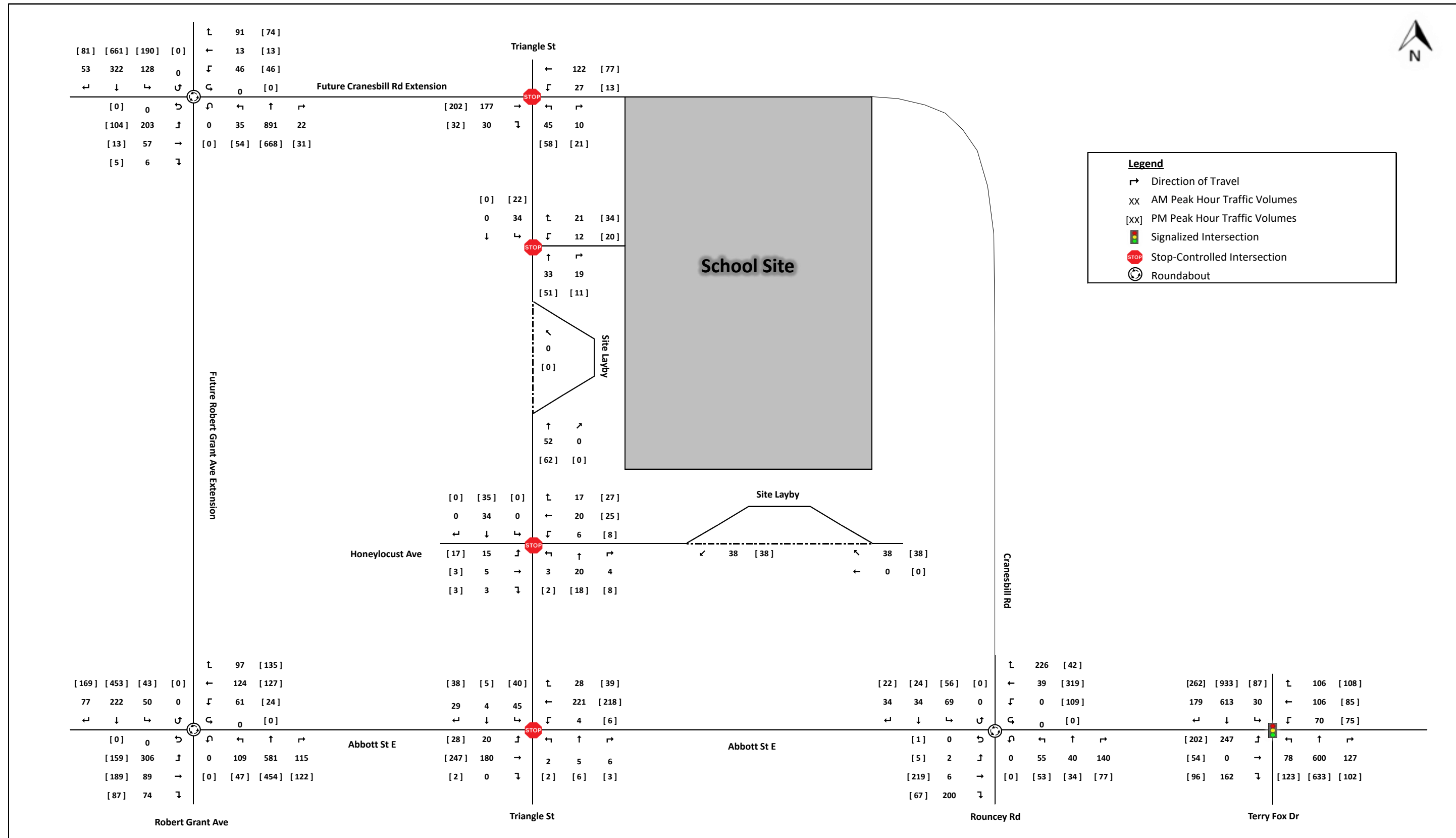


Figure 30: Future (2032) Total Traffic Volumes

## 9.0 DEVELOPMENT DESIGN

This section will review the proposed development and its transportation network elements in order to ensure that a safe and efficient design has been proposed that encourages walking, cycling, and transit use. In support of this section, the City of Ottawa's Transportation Demand Management (TDM)-supportive Development and Design and Infrastructure checklist has been completed and is provided in Appendix E. The TDM-supportive Development Design and Infrastructure checklist outlines the TDM elements to be included in the proposed development.

### 9.1 Design for Sustainable Modes

Given the nature of the site being a school and it being located within a residential neighborhood, there is a high degree of intrinsic TDM measures in place such as dedicated transit for students and a defined catchment area which generally results in shorter trip distances than other types of development. However, it is critical to ensure safe and efficient means of accessing the site for all modes of transportation.

The site's auto and bicycle parking spaces are located close to the school's entrances and are accessible via the sidewalk network along Triangle Street and Honeylocust Avenue. The site is bordered by sidewalks on all side fronting roads with wide landscaped boulevards that can be used as waiting areas.

As described in Section 4.2, currently the closest transit stops to the site are located at the intersection of Abbott Street East at Cranesbill Road / Rouncey Road. However, transit stops are anticipated at the intersection of Triangle Street at Abbott Street East. Through review of existing conditions and future planned conditions, it was noted that there are currently no north-south protected pedestrian crossings on Cranesbill Road, Honeylocust Avenue, or Abbott Street. Given the residential development surrounding the school as well as the developed trail network north of Cranesbill Road and the Ottawa-Carleton Trailway to the south, there are clear north-south desire lines through the development area. Currently, the Abbott Street East at Cranesbill Road roundabout provides the only north-south protected crossing location within the study area.

Figure 31 illustrates two locations within the study area located along key desire lines, where there appears to be pedestrian crossings implied by the existing curb depressions and TWSIs, however, no signage is provided to mark them as either protected or unprotected pedestrian crossings. In some instances, such as at the intersection of Abbott Street East at Malahat Way / Lanceleaf Way, these implied crossing locations are present on both the east and west sides of the intersection. It is noted there are several locations within the study area particularly along Cranesbill Road, Honeylocust Road, Malahat Way, Abbott Street East, etc., with similar implied crossing locations to those illustrated in Figure 31. While the surrounding development area is still in varying phases of construction, if no plans have been established for these locations, the city should assess them independently of this study and either install the appropriate protected pedestrian crossing treatments (PXOs, stop-control, IPS, or MPS), install the appropriate signage for an unprotected pedestrian crossing (pedestrians yield to traffic signage), or remove the curb depressions and TWSIs. The consideration of PXO locations should reflect the desired spacing of 200m between protected crossing locations as identified in OTM Book 15. The potential for confusion between pedestrians and motorists relating to right-of-way is not desirable from a safety and operations perspective, particularly in consideration to the higher volume of vulnerable road users expected within the study area.



Figure 31: Unsigned / Unprotected Pedestrian Crossings

As noted in Table 12, the school is anticipated to generate a total of 252 walking trips during the morning peak and 251 in the afternoon peak. PXOs at a given location are generally considered for feasibility review where the 8-hour pedestrian volume exceeds 100 (adjusted based on vulnerable road users) and the 8-hour vehicle volume exceeds 750 vehicles. At the intersection of Honeylocust Avenue at Triangle Street, while the pedestrian volume is likely to exceed the 100 pedestrian volume threshold, the traffic volume is well below the 750-vehicle threshold. As such, a marked School Crossing with designated crossing guard could be implemented. However, marked school crossing locations without the presence of a crossing guard is considered an uncontrolled crossing as they can create a false sense of security on the part of pedestrians, particularly children, who may enter the crossing expecting that approaching drivers will see them and stop. As such, despite the low traffic volume on Honeylocust Avenue, a Level 2 Type D PXO is recommended at this location with crossing guard during school start and end periods.

It should be noted that the concern related to the design of potential crossing locations is specific to the background transportation network and ongoing residential development in the area and should be addressed by the City of Ottawa independently of this development application. Specific to pedestrian connectivity for school operations, it is anticipated that school crossing guards will be used as required, in accordance with the Highway Traffic Act. School crossing guards can also be used at protected crossing facilities as an optional component, providing enhanced protection. Despite this, further consideration has been given to PXO locations and types with respect to operating speeds and traffic volumes and the selection criteria outlined in OTM Book 15 to guide additional City review.

At the intersection of Abbott Street East and Malahat Way / Lanceleaf Way, the traffic volume threshold is expected to be met and a Level 2 Type D PXO would be appropriate for the east side of the intersection. This would provide a protected pedestrian crossing across Abbott Street East and would be located adjacent to Lee Boltwood Park. While this would be located just within a 200m spacing to the existing crossing on the west leg of the Abbott / Rouncey roundabout, a crossing on the east leg would be better aligned with the existing along the east side of Malahat Way. As stated previously, future transit stops are expected at Triangle Street and Abbott Street East. Given the recommended PXO location, consideration should be given to relocating the transit stop east of Malahat Way / Lanceleaf Way to mitigate potential for uncontrolled

crossings at Triangle Street. Similarly, at the intersection of Cranesbill Road at Triangle Street, a Level 2 Type D PXO would be appropriate. Given that the crossing location identified on Cranesbill Road, east of Nordmann Fir Court, is approximately 275 m away, a PXO could still be installed here at the City's discretion.

The following provides a summary of the recommended pedestrian connectivity improvements:

- City to consider installation of Level 2 Type D PXOs at:
  - Cranesbill Road at Triangle Street.
  - Triangle Street at Honeylocust Avenue.
  - Abbott Street East at Malahat Way / Lanceleaf Way.
- Consider locating the future transit stops on Abbott Street East at Malahat Way / Lanceleaf way in place of Triangle Street.
- City of Ottawa to Assess and Implement PXOs at uncontrolled crossings, where appropriate.
- City of Ottawa provides pavement markings for pedestrian crossings.

It is noted that the recommended PXO locations, while benefiting pedestrian connectivity to and from the proposed school, is not expected to be a direct result of the proposed school itself. The proposed PXO locations would serve to address pedestrian connectivity along existing desire lines established through the location of existing active transportation facilities, previously built neighbourhood pathway links, and the overall surrounding Fernbank development. As such, protected pedestrian crossing locations would be expected to have been reviewed and addressed under the development and planning within the CDP area.

### 9.1.1 Layby Considerations

As previously discussed in Section 2.0, layby areas are proposed along Triangle Street (east side) and Honeylocust Avenue (north side) intended to respectively accommodate school buses and parents pick up / drop offs. While approval and discussion of the layby areas will be addressed through a Road Modification Application (RMA), this section will provide some discussion and context on the suitability of the proposed design and location from a traffic operations and planning perspective.

Currently, Triangle Street and Honeylocust Avenue are approximately 8.4 m wide and allow on-street parking on both sides of the road. The proposed layby areas would extend the overall pavement width to approximately 10.5m on Triangle Street and 10.0m on Honeylocust Avenue to include laybys areas on both segments and align with preferred pavement widths identified by City of Ottawa staff. The proposed site plan includes bump-outs at each end of the proposed laybys to frame the layby areas, and would narrow the pavement width to 7.5m adjacent to the bump-outs on both streets.

Cross-section elements such as lane widths should be reflective of the roadways design speed. The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads provides recommended lane widths for varying design speeds, as illustrated in Table 17.

Table 17: Through Lane Widths – Urban Roadways

Design Domain				
Design Speed	Practical Lower Limit	Recommended Lower Limit	Recommended Upper Limit	Practical Upper Limit
60 and Less	2.7m	3.0m	3.7m	4.0m

For an urban roadway with a design speed of 60 km/h or less the recommended lower limit is 3.0 m. However, given the requirement for the roadway to facilitate school buses, which require wider lanes to operate, a minimum lane width of 3.3 m is recommended with an upper recommended limit of 3.7 m. The TAC guidelines also recommend parking lanes be 2.4 m wide. Local Roads in urban areas such as Triangle Street, however, typically do not have defined travelled lanes as

they are intended to be lower speed roads and local conditions and provisions such as emergency access and snow storage need to be considered.

The construction of the layby areas in effect removes an on-street parking lane from the side of road in which the layby area is constructed. This effectively widens the overall roadway lane widths which poses some concern with respect to increasing operating speeds as a result. A potential mitigation for the increase in lane widths would be to narrow the layby areas so that vehicles protrude into the through lanes. However, considering the layby areas effectively remove a parking lane, narrowing would provide minimal lane width reductions, and ultimately would reduce the level of protection given to the pick-up and drop-off operations as a result of the lack of separation between the travel lane and the parking lane. This could pose a risk for people exiting vehicles or for cyclists.

As such, maintaining layby area widths to sufficiently accommodate buses is recommended. However, to mitigate the potential for higher operating speeds, the bump-outs at each end of the layby areas are proposed; these will function as a traffic calming measure to encourage a reduction in vehicle speeds, as well as framing depth of the laybys to provide a visual indication of the width of the layby and adjacent travel lanes. This approach will also allow the overall road widths to be maintained in alignment with the guidelines of the City 30 km/h Design Toolbox.

## 9.2 Speed Limit Considerations

Traffic conditions near school zones and playgrounds represent particular concern to communities. World Health Organization (WHO) statistics show a significant improvement in survival rates when speed limits are decreased. For example, there is a reported 1.5 in 10 survival rates for pedestrians being struck at 50 km/h. However, at 30 km/h the survival rate is increased to 9 in 10.

While the study area currently lies within a designated 40 km/h neighborhood speed zone, consideration should be given to designating the proposed school boundary roads as a School Zone with a posted speed limit of 30 km/h. Additional consideration could be given to designating the area, particularly along Cranesbill Road as a Community Safety Zone with Automated Speed Enforcement (ASE) in accordance with the Safer School Zones Act, 2017 and Council adoption. Traffic calming measures and consideration of the City of Ottawa Local Residential Streets 30 km/h Design Toolbox would be required to promote the desired operating speeds.

## 9.3 Circulation and Access Review

The proposed development is expected to include one access on Triangle Street. A secondary future gated fire route access will be located on Honeylocust Avenue. Site access and circulation has been reviewed based on the site plan provided to RCI on January 24, 2025. Vehicle tracking software was used to simulate various design vehicles accessing and circulating through the site. Design vehicles were identified as a fire truck, and a medium single unit truck. All design vehicles swept path figures have been provided in Appendix F. Overall, no concerns were identified.

# 10.0 PARKING

As part of this study, a parking justification assessment was completed to ensure the site is providing sufficient parking supply while balancing operational needs and encouragement of sustainable travel modes, and desire to minimize neighborhood impacts.

## 10.1 Vehicle Parking Supply

As stated in Section 2.0, the site is anticipated to provide a total of 89 parking spaces for staff and visitors including four barrier free accessible parking spaces (two type A and two type B). The site is also anticipated to have a total of 48 bicycle parking spaces situated adjacent to the building access points.

As illustrated in Table 18, based on the City of Ottawa Zoning By-Law Number 2008-250 parking requirements, the proposed development will require a total of 33 parking spaces. It should be noted that the proposed parking supply will also serve to accommodate future expansion of the school, however, this would be addressed through future site plan control.

Table 18: Site Parking Requirements

Land Use	By-Law Rate	GFA / Unit	Required Parking	Provided Parking	Meets Requirements (Yes/No)
School, other (N81)	1.5 per classroom (includes portables)	18 (includes 16 classrooms + 6 kindergartens)	27	89 spaces	Yes
Daycare (N30)	2 per 100m <sup>2</sup> of gross floor area	275 m <sup>2</sup>	6		
Total			33		

Additional parking space requirements, applicable to the site as outlined within the City of Ottawa zoning bylaws include the following:

- Based on the total number of parking spaces provided (76–100), a total of four accessible parking spaces including 2 type A and 2 Type B are required. As such, the accessible parking supply requirements are met.
- For schools with a GFA between 2,000 and 4,999 m<sup>2</sup>, one loading space is required. The site plan proposes to provide a loading zone area along the east side of the parking lot, adjacent to the school entrance.
- The site parking space dimensions meet the City of Ottawa minimum dimension requirements of 2.6 m x 5.1 m, and the minimum drive aisle widths of 6.7 m.

While parking requirements for future school expansions would be addressed through future site plan control, the existing parking surplus is expected to serve to accommodate potential layby spillover demand. Additionally, given the nature of the site, the additional parking supply is not expected to result in lower sustainable mode shares such as walking and cycling.

## 10.2 Bicycle Parking Supply

The site is expected to supply a total of 48 bicycle parking spaces located adjacent to the school entrance on Honeylocust Avenue, the parking area and the school entrance on Triangle Street. As detailed in Table 19, the City of Ottawa Zoning By-Law requires a total of 47 bicycle spaces for the site. As such, the site bicycle parking supply is sufficient.

Table 19: Site Bicycle Parking Requirements

Land Use	By-Law Rate	GFA / Unit	Required Parking	Provided Parking	Meets Requirements (Yes/No)
School	1 per 100 m <sup>2</sup> of gross floor area	4,647 m <sup>2</sup>	47	48 (6 bike racks w/ 8 spaces)	Yes

## 11.0 BOUNDARY STREET DESIGN

This section will assess the design elements of the noted boundary streets and their ability to accommodate the proposed development as well as consistency with the City of Ottawa’s Complete Street design philosophy and urban design objectives. .

### 11.1.1 Boundary Segment Multi-Modal Level of Service

Multi-Modal Level of Service (MMLOS) was assessed for the study road segments fronting the proposed school site along Triangle Street, Honeylocust Avenue, and Cranesbill Road, based on the City’s updated 2025 MMLOS guidelines. The results of the Segment MMLOS analysis are summarized in Table 20; the detailed MMLOS Worksheets are included in Appendix J.

Table 20: Boundary Road Segment MMLOS Evaluation

Segment	Side	Existing				Future (2032)			
		PLOS	BLOS	TLOS	PRLOS	PLOS	BLOS	TLOS	PRLOS
<b>TARGET</b>		<b>C</b>	<b>C</b>	<b>E</b>	<b>-</b>	<b>B</b>	<b>C</b>	<b>E</b>	<b>-</b>
<b>Triangle Street</b> Cranesbill to Honeylocust	West	F (F)	A (A)	C	C	F (F)	A (A)	C	C
	East	B (B)	A (A)	C	A	A (B)	A (A)	C	A
<b>Honeylocust Ave</b> Triangle to Ponderosa	North	B (B)	A (A)	C	A	A (B)	A (A)	C	A
	South	F (F)	A (A)	C	C	F (F)	A (A)	C	C
<b>Cranesbill Drive</b> Triangle to Silence Terr.	North	A (A)	A (A)	C	A	B (B)	C (C)	C	B
	South	A (A)	A (A)	C	A	B (B)	C (C)	C	B
PLOS and BLOS reported as Majority and (Critical) scores, per current Ottawa MMLOS Guidelines.									

The MMLOS analysis indicates the following for the boundary roads around the proposed school:

The existing **Pedestrian LOS (PLOS)** target of B is based on the “outer urban or suburban” designation while the future target is based on the “within 300m of a school” designation. These targets are met under the existing configuration for all segments where sidewalks exist, but will remain at F on the sides of the boundary streets where sidewalks do not exist. The proposed laybys on Triangle Street and Honeylocust Avenue will improve the PLOS on these segments to A in the future as a result of the greater separation between the sidewalks and vehicle lanes. The increase in traffic volumes along Cranesbill Drive as a result of the future connection to Robert Grant Avenue will increase the PLOS on this segment to B.

**The Bicycle LOS (PLOS)** target of C is based on the “elsewhere” (i.e. not cross-town bikeway) classification and is met for all boundary road segments as a result of the low traffic speeds and volumes. The increase in future traffic volumes along Cranesbill Drive as a result of the future connection to Robert Grant Avenue will increase the BLOS on this segment to C, which will still meet the target.

While there is no existing transit on any of the boundary streets, the existing road configuration is expected to result in a **Transit LOS (TLOS)** of C on all segments, as there would not be significant delays to transit expected. This would meet a hypothetical target of E based on mixed traffic operation. This is expected to be true under future conditions as well, although pickup and drop-off periods at the school may result in brief periods where more delay would be expected.

**Public Realm LOS (PRLOS)** is A for all road segments with sidewalks and C for segments without sidewalks. This is expected to remain consistent in the future as no dedicated cycling facilities and associated boulevards are proposed. However, the PRLOS for the Cranesbill Drive segments will increase to B as a result of the additional traffic from the future connection to Robert Grant Avenue.

## 11.2 Road Safety

Available collision data within the study area was reviewed and is presented in Table 4. The City of Ottawa TIA guidelines require the identification of any patterns with more than six collisions in five years. It's noted the intersection of Terry Fox Drive at Abbott Street East / Castle Frank Road experienced a total of 46 collisions between 2018 and 2022, with 28 rear end, 6 turning movement, and 7 SMV Other collisions. However, rear-end collisions are generally considered the most frequent collision type at intersections within urban environments and are typically avoidable. The intersection was observed to have long unobstructed distances on all approaches except for Castlefrank Road. However, the majority of

collisions were observed to occur in the north and south approaches. Overall, no significant safety concerns are identified at the intersection. The collision frequency is expected in part due to the relatively high traffic volume and not a result of identifiable design / operational deficiencies.

## 12.0 TRANSPORTATION DEMAND MANAGEMENT

This section is intended to identify the post-occupancy TDM program measures that could complement the development design and infrastructure elements to ensure acceptable performance and benefits to occupants and visitors.

### 12.1 Context for TDM

As discussed previously, given the nature of the site being an elementary school, mode shares are generally reflective of the operational characteristics of the school itself and not necessarily the surrounding area mode shares. The mode shares are not expected to be significantly influenced through TDM measures in the way that office / retail land uses would be. Factors such as the school catchment area and walkability for students are the primary factors for influencing mode shares to the site. However, there is some opportunity for mode share adjustments, primarily relating to staff trips.

### 12.2 Need and Opportunity

Given the nature of the site, reducing auto trips is expected to provide improved operations during pick-up and drop-off periods, particularly at the parent designated layby area on Honeylocust Avenue. Potential for traffic accessing the layby areas to spill into through lanes could result in significant operational and safety concerns.

Promoting walkability through appropriate pedestrian connections has been recommended to facilitate access to the school from the various catchment area zones and is key to reducing auto trips. Additionally, while existing transit service within the study area is limited, the anticipated extension of Robert Grant Avenue, and existing transit on Hazeldean Road could result in some additional walking / cycling trips for parents and staff.

### 12.3 TDM Program

The City of Ottawa's TDM Measures checklist was completed for the proposed development and is provided in Appendix G. Overall, recommendations include displaying local area maps at the school entrances including cycling, walking and transit routes. It is additionally recommended that the school consider bicycle skills training courses targeted to both staff and students. Additionally, it is anticipated the school will be equipped with a faculty room / lounge and change amenities would be provided as part of typical school operations.

## 13.0 INTERSECTION DESIGN

This section will examine the design elements of the proposed development access and study intersections and assess their alignment with the City of Ottawa's Complete Street philosophy, MMLOS Guidelines and urban design objectives.

### 13.1 Access Location and Design

The access for the proposed development is expected to be located on the east side of Triangle Street, approximately 40 m south of Cranesbill Road. The access will provide a single lane in each direction, accommodating northbound / southbound ingress/egress from Triangle Street. Opposite the site access along Triangle Street is private residential access driveways.

The proposed access will be required to meet the requirements of the City's private approach by-law (2003-447). Table 21 below provides a summary of the applicable requirements and comparison with the proposed access.

Table 21: City of Ottawa Private Approach Bylaw Review

Bylaw Section	Bylaw Requirement	Proposed Access Configuration	Compliant?
11.1	A private approach shall have a minimum width of 2.4 metres and a maximum width of 9.0 metres, and in no case shall the width exceed 50% of the frontage on which the approach or approaches are located. (2015-207)	Proposed width 6.7m	Yes
17	The centerline of a private approach shall intersect the centreline of the roadway as nearly as practicable at a right angle, but in no case shall the acute angle between the centre line of the private approach and the centreline of the roadway be less than 70 degrees.	Proposed access will intersect Triangle Street at a 90 degree angle.	Yes
25.1a,b	<p>a. The maximum number of private approaches permitted shall be as follows:</p> <ol style="list-style-type: none"> <li>1. less than 20 metres of frontage, one (1) two-way private approach;</li> <li>2. 20 metres to 34 metres of frontage, one (1) two-way private approach or two (2) one-way private approaches;</li> <li>3. 35 metres to 45 metres of frontage, two (2) two-way private approaches or two (2) one-way private approaches;</li> <li>4. 46 metres to 150 metres of frontage, one two-way private approach and two one-way private approaches or two two-way private approaches; and</li> <li>5. for each additional 90 metres of frontage in excess of 150 metres, one two-way private approach or two one-way private approaches.</li> </ol> <p>b. On a corner lot or a lot abutting on more than one highway, the provisions of paragraph (a) hereof shall apply to each frontage separately.</p>	<p>One two-way access proposed for approximately 210m frontage along Triangle Street.</p> <p>One gated two-way fire access proposed for approximately 115m of frontage along Honeylocust Avenue.</p>	Yes
25.1c	No private approach intended for two-way vehicular traffic shall exceed 9 metres in width at the street line, and at the curb line or roadway edge.	Proposed width 6.7m	Yes
25.1o	No person shall construct a private approach within an intersection or on the corner radius of an intersection or within 1.5 metres of the point of tangency of such radius or so that the distance between the nearest limit of a private approach and the intersecting street line or its extension is less than 6 metres.	Proposed Triangle Street is located approximately 36 m from Cranesbill Drive.	Yes
25.1s,u	<p>S. No person shall construct a private approach serving any parking area with a grade exceeding 2% and the grade on the private approach shall descend in the direction of the roadway.</p> <p>u. No person shall construct a private approach serving a parking area with more than 50 parking spaces, with a grade exceeding 2% within the private property for a distance of 9 metres from the highway line or future highway line.</p>	Proposed access destined to a grade of 1.9%. Refer to site grading plan for additional detail.	Yes

The review indicates that the proposed access will satisfy the bylaw requirements for an access to an institutional use site.

### 13.2 Access Sightlines

Intersection Sight Distance (ISD) for Case B1 – Left Turn from the minor road was reviewed at the proposed site access on Triangle Street. The TAC Geometric Design Guide for Canadian Roads provides minimum sight distances based on design speed, as illustrated in Table 22. As Triangle Street is expected to be signed as a school zone with a posted 30 km/h speed limit, a design speed of 40 km/h was deemed appropriate. However, due to the access' proximity to Cranesbill Road, drivers would be able to see vehicles on Cranesbill Road turning onto Triangle Street. As such, a reduced design speed of 20 km/h was used as it reflects typical turning movement speeds. Available sight distances from the site access are illustrated in Figure 32. Overall, no concerns are identified related to sight distances.

Table 22: Intersection Sight Distance Requirements – Case B1

Approach	Design Speed (Km/h)	Required Intersection Sight Distance for Passenger Cars (m)
North Approach	20	45
South Approach	40	85



Figure 32: Available Sight Distance

### 13.3 Access Control

In consideration of existing and projected traffic volumes, the site access does not warrant traffic signals. Stop control is recommended for the access approach.

### 13.4 Access Design (MMLOS)

The City of Ottawa MMLOS guideline provides methodology for signalized intersections only. As such, MMLOS assessment was not conducted for the intersection. Generally, there are no concerns anticipated with respect to the access location and design.

### 13.5 Intersection Control

As discussed in Section 13.3, due to the low volumes of traffic, signals are not expected to be warranted at the proposed site access. Based on review of existing and future projected traffic volumes, the two stop-controlled intersections with the highest traffic volumes include Triangle Street at Abbott Street East and Triangle Street East at Cranesbill Road. Traffic signal warrants were completed at these two intersections using future 2032 total traffic volumes. Traffic signals are not expected to be warranted. As such, no new traffic signals are expected to be warranted within the study area. As mentioned within Section 4.0, the new intersection of Robert Grant Avenue at Cranesbill Road is expected to be constructed as a roundabout with potential to be converted to a signalized intersection in the future. Traffic Signal Warrants have been provided in Appendix I.

### 13.6 Intersection Auxiliary Lanes

Auxiliary left and right turn lanes were considered at the study area two-way stop-controlled intersections. With respect to left turn lanes, the Ministry of Transportation (MTO) Design Supplement to the TAC Geometric Design Guide for Canadian Roads, provides nomographs for determining if left turn lanes are warranted. Based on a design speed of 50 km/h and 5% of left turning volume, the combined approaching and opposing traffic volume required to warrant a left turn lane is approximately 900 vehicles per hour (vph). Generally left turn lanes are considered where high-speed differentials between through traffic and turning traffic warrants separation of the two movements for enhanced safety. As such, given the low study area design speed and traffic volumes, left turn lanes are not expected to be warranted.

With respect to right turn lanes at the study area two-way stop-controlled intersection, TAC recommends implementation when right-turning traffic volume exceeds 10% of the total approach volume and the right turning volume is at least 60 vph. Review of the 2032 future total traffic indicates no right turn volume is expected to exceed 60 vph. As such auxiliary right turn lanes are not expected to be warranted.

### 13.7 Intersection Vehicular Level of Service (LOS)

Level of Service (LOS) is a qualitative measure that defines operational conditions within a traffic stream and how its perceived by motorists. The city MMLOS guidelines provides definitions for LOS at signalized intersections related to volume to capacity ratio (V/C) as illustrated in Table 23. While the MMLOS guidelines provides methodology for signalized intersections only, the below definitions have been applied to stop-controlled intersections as well.

*Table 23: Level of Service Definitions*

Level of Service	V/C Ratio
A	0 to 0.60
B	0.61 to 0.70
C	0.71 to 0.80
D	0.81 to 0.90
E	0.91 to 1.00
F	> 1.00

Traffic operations were assessed at the study intersections for weekday morning and afternoon peak hours. Synchro 12 software was used to determine V/C ratios in accordance with Appendix C: Synchro Analysis Parameters of the City of Ottawa TIA Guidelines. Study area roundabouts were assessed utilizing SIDRA, an industry approved software package for assessing roundabout capacity and delays was used to assess roundabout operations.

Existing signal timing information such as phasing, pedestrian minimums and clearance intervals was provided by the City of Ottawa for the signalized intersection of Terry Fox Drive at Abbott Street East / Castlefrank Road. The traffic signal timing form can be found in Appendix C. Signal timing adjustments were made for the future 2027 and 2032 horizon periods during the afternoon peak hour to accommodate the future travel demand. Adjustments included increasing the cycle

length from 100 seconds to 115 seconds with increased green allocation to the north and south approaches. All Synchro 12 output reports have been provided in Appendix H.

### 13.7.1 Existing (2025) Traffic

Existing traffic operations are summarized in Table 24. The study intersections are generally operating well with the exception of the intersection of Terry Fox Drive at Abbott Street East / Castlefrank Road which has several movements operating at or approaching capacity including the north / south approaches of Terry Fox Drive and the eastbound left movement on Abbott Street East. While the Northbound approach is shown to operate at a V/C of 1.03 during the afternoon peak hour, it is expected that the saturated flow rate may in reality be slightly higher than the City of Ottawa specified 1,800 vphpl modelling parameter which would result in a lower V/C.

Table 24: Existing (2025) Traffic Operations

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
<b>Signalized</b>									
Terry Fox Drive at Abbott Street / Castlefrank Road	EBL	E	1.00	82	#97	D	0.87	65	#62
	EBTR*	A	0.26	1	0	A	0.33	1	25
	WBL	A	0.54	48	30	B	0.61	53	34
	WBTR	A	0.44	16	21	B	0.61	43	41
	NBL	A	0.24	11	14	A	0.40	17	14
	NBTR	E	0.98	54	#242	F	1.03	64	#273
	SBL	A	0.22	12	7.2	A	0.55	26	#28
	SBT	C	0.72	27	#139	E	0.98	51	#279
SBR	A	0.25	4	12	A	0.37	3	15	
<b>Stop-Controlled</b>									
Triangle Street at Abbott Street East	NBLTR	A	0.01	11	0	A	0.02	13	1
	EBL	A	0.02	8	0	A	0.02	8	1
	WBL	A	0.00	8	0	A	0.01	8	0
	SBLTR	A	0.12	12	3	A	0.12	13	3
Triangle Street at Cranesbill Road	NBLR	A	0.01	9	0	A	0.02	9	1
	WBL	A	0.02	8	1	A	0.01	7	0
Triangle Street at Honeylocust Avenue	NBLTR	A	0.02	9	1	A	0.03	9	1
	EBL	A	0.00	0	0	A	0.00	7	0
	WBL	A	0.00	7	0	A	0.00	7	0
	SBLTR	A	0.03	9	1	A	0.02	9	1
<b>Roundabout</b>									
Abbott Street E at Cranesbill Road / Rouncey Road	NB	A	0.21	4	8	A	0.15	4	5
	WB	A	0.19	4	9	A	0.37	6	21
	SB	A	0.11	7	4	A	0.11	9	4
	EB	A	0.22	5	10	A	0.27	6	12
Abbott Street E at Robert Grant Avenue	NB	A	0.34	5	15	A	0.34	6	14
	WB	A	0.19	8	8	A	0.22	8	10
	EB	A	0.22	5	12	A	0.40	5	24

\* EBT restricted during the AM Peak Hour

#95<sup>th</sup> Percentile volume exceeds capacity, queue may be longer

The future 2027 and 2032 background traffic operations are summarized in Table 26 and Table 27, respectively, respectively. As illustrated, a slight operational improvement is expected at the intersection of Terry Fox Drive at Abbott Street East / Castlefrank Road. This is in part a result of the increased Peak Hour Factor from 0.9 under existing conditions to 1.0 for future conditions as required by the City of Ottawa TIA guidelines. This is also as a result of the change in travel patterns and overall increased network capacity from the expected completion of the Robert Grant Extension. Overall, all intersections are expected to operate at acceptable levels of service under the background 2027 and 2032 traffic conditions, with the exception of the Terry Fox Drive at Abbott Street East / Castlefrank Road. While the traffic signal adjustments provide some increased capacity, the intersection is expected to have several movements reach capacity by the 2032 horizon year, however, operating similar to existing conditions. The northbound approaches at the future roundabouts on the new Robert Grant Avenue are also shown to be approaching capacity by the 2032 horizon year. However, it should be noted that as previously discussed within this report and past area studies, there is potential for future widening of Robert Grant Avenue and signalization of the Robert Grant Avenue at Cranesbill Road intersection.

Table 25: Future (2027) Background Traffic Operations

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
<b>Signalized</b>									
Terry Fox Drive at Abbott Street / Castlefrank Road	EBL	D	0.88	58	#79	D	0.83	56	#52
	EBTR*	A	0.24	1	0	A	0.29	12	21
	WBL	A	0.47	46	25	A	0.43	44	26
	WBTR	A	0.43	16	20	B	0.70	41	45
	NBL	A	0.19	10	12	A	0.59	29	#38
	NBTR	D	0.88	36	#202	D	0.82	34	#212
	SBL	A	0.15	10	6	A	0.38	15	16
	SBT	B	0.66	24	116	E	0.99	57	#254
SBR	A	0.22	4	11	11	A	0.31	4	14
<b>Stop-Controlled</b>									
Triangle Street at Abbott Street East	NBLTR	A	0.02	10	0	A	0.02	12	0
	EBL	A	0.01	8	0	A	0.02	8	1
	WBL	A	0.00	8	0	A	0.01	8	0
	SBLTR	A	0.11	12	3	A	0.10	12	2
Triangle Street at Cranesbill Road	NBLR	A	0.01	9	0	A	0.02	10	1
	WBL	A	0.02	8	0	A	0.01	8	0
Triangle Street at Honeylocust Avenue	NBLTR	A	0.02	9	0	A	0.03	9	1
	EBL	A	0.00	0	0	A	0.00	7	0
	WBL	A	0.00	7	0	A	0.00	7	0
	SBLTR	A	0.03	9	1	A	0.02	9	1
<b>Roundabout</b>									
Abbott Street E at Cranesbill Road / Rouncey Road	NB	A	0.21	4	8	A	0.15	4	6
	WB	A	0.23	5	11	A	0.38	6	22
	SB	A	0.13	8	5	A	0.11	9	4
	EB	A	0.24	5	11	A	0.27	6	12
Abbott Street E at Robert Grant Avenue	NB	D	0.89	16	126	B	0.63	6	44
	WB	B	0.69	30	55	A	0.42	10	23
	SB	A	0.33	7	14	A	0.55	6	32

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
Robert Grant Avenue at Cranesbill Road	EB	A	0.48	10	27	A	0.56	12	37
	NB	D	0.90	13	129	B	0.66	5	46
	WB	A	0.40	21	23	A	0.14	13	7
	SB	A	0.35	6	17	B	0.66	6	46
	EB	A	0.31	11	14	A	0.23	15	11

\* EBT restricted during the AM Peak Hour. #95<sup>th</sup> Percentile volume exceeds capacity, queue may be longer

Table 26: Future (2032) Background Traffic Operations

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
<b>Signalized</b>									
Terry Fox Drive at Abbott Street / Castlefrank Road	EBL	E	0.91	64	#82	E	0.92	83	#67
	EBTR*	A	0.28	2	3	A	0.32	18	28
	WBL	A	0.50	47	26	A	0.44	52	29
	WBTR	A	0.40	16	21	C	0.76	54	54
	NBL	A	0.29	11	13	B	0.67	40	#50
	NBTR	F	1.00	57	#244	C	0.74	26	187
	SBL	A	0.21	12	6.5	A	0.32	12	14
	SBT	D	0.84	33	#182	E	0.99	54	#299
	SBR	A	0.24	4	12	A	0.27	3	12
<b>Stop-Controlled</b>									
Triangle Street at Abbott Street East	NBLTR	A	0.02	11	0	A	0.02	12	0
	EBL	A	0.02	8	0	A	0.02	8	1
	WBL	A	0.00	8	0	A	0.01	8	0
	SBLTR	A	0.11	12	3	A	0.11	12	2
Triangle Street at Cranesbill Road	NBLR	A	0.01	9	0	A	0.02	10	1
	WBL	A	0.02	8	0	A	0.01	8	0
Triangle Street at Honeylocust Avenue	NBLTR	A	0.02	9	0	A	0.03	9	1
	EBL	A	0.00	0	0	A	0.00	7	0
	WBL	A	0.00	7	0	A	0.00	7	0
	SBLTR	A	0.03	9	1	A	0.02	9	1
<b>Roundabout</b>									
Abbott Street E at Cranesbill Road / Rouncey Road	NB	A	0.23	4	9	A	0.16	4	6
	WB	A	0.24	6	12	A	0.38	6	22
	SB	A	0.14	8	5	A	0.12	9	4
	EB	A	0.25	5	11	A	0.26	5	12
Abbott Street E at Robert Grant Avenue	NB	E	0.95	23	175	B	0.68	7	53
	WB	C	0.79	41	72	A	0.46	12	27

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
Robert Grant Avenue at Cranesbill Road	SB	A	0.35	7	16	A	0.59	6	36
	EB	A	0.52	10	30	B	0.60	14	44
	NB	E	0.96	20	181	C	0.71	6	55
	WB	A	0.47	26	28	A	0.16	14	8
	SB	A	0.37	6	18	B	0.69	6	52
	EB	A	0.33	11	16	A	0.25	16	13

\* EBT restricted during the AM Peak Hour. #95<sup>th</sup> Percentile volume exceeds capacity, queue may be longer

The future 2027 and 2032 total traffic operations are summarized in Table 28 and Table 29, respectively.

Table 27: Future Total (2027) Traffic Operations

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
<b>Signalized</b>									
Terry Fox Drive at Abbott Street / Castlefrank Road	EBL	D	0.90	61	#82	E	0.92	76	#72
	EBTR*	A	0.24	1	0	A	0.30	16	26
	WBL	A	0.47	46	25	A	0.45	50	29
	WBTR	A	0.43	16	20	C	0.75	50	52
	NBL	A	0.21	10	12	A	0.59	27	#33
	NBTR	D	0.88	36	#202	C	0.77	29	#203
	SBL	A	0.15	10	6	A	0.36	14	16
	SBT	B	0.66	24	116	E	0.93	45	#250
SBR	A	0.24	4	12	A	0.30	3	13	
<b>Stop-Controlled</b>									
Triangle Street at Abbott Street East	NBLTR	A	0.02	11	0	A	0.02	13	1
	EBL	A	0.02	8	0	A	0.02	8	1
	WBL	A	0.00	8	0	A	0.01	8	0
	SBLTR	A	0.13	12	3	A	0.15	13	4
Triangle Street at Cranesbill Road	NBLR	A	0.08	11	0	A	0.11	11	3
	WBL	A	0.02	8	0	A	0.01	8	0
Triangle Street at Honeylocust Avenue	NBLTR	A	0.03	10	1	A	0.03	10	1
	EBL	A	0.01	7	0	A	0.01	7	0
	WBL	A	0.00	7	0	A	0.01	7	0
	SBLTR	A	0.04	10	1	A	0.05	10	1
Triangle Street at Site Access	WBLR	A	0.03	9	1	A	0.06	9	1
	SBL	A	0.00	0	0	A	0.00	0	0
<b>Roundabout</b>									
Abbott Street E at Cranesbill Road / Rouncey Road	NB	A	0.22	4	9	A	0.16	4	6
	WB	A	0.25	5	13	A	0.39	6	23
	SB	A	0.14	8	5	A	0.12	9	4

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
	EB	A	0.25	5	11	A	0.28	6	13
Abbott Street E at Robert Grant Avenue	NB	D	0.89	16	125	B	0.65	7	47
	WB	C	0.70	30	57	A	0.44	11	24
	SB	A	0.34	7	15	A	0.56	6	33
	EB	A	0.50	10	28	A	0.57	13	39
Robert Grant Avenue at Cranesbill Road	NB	E	0.93	17	156	B	0.69	7	51
	WB	A	0.56	28	37	A	0.26	2	13
	SB	A	0.39	6	20	B	0.69	7	52
	EB	A	0.32	11	15	A	0.24	2	12

\* EBT restricted during the AM Peak Hour

#95<sup>th</sup> Percentile volume exceeds capacity, queue may be longer

Table 28: Future (2032) Total Traffic Operations

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
<b>Signalized</b>									
Terry Fox Drive at Abbott Street / Castlefrank Road	EBL	D	0.82	51	#69	E	0.98	98	#76
	EBTR*	A	0.25	1	0	A	0.32	18	28
	WBL	A	0.45	45	24	A	0.44	52	29
	WBTR	A	0.44	16	20	C	0.76	54	54
	NBL	A	0.23	10	12	B	0.67	40	#52
	NBTR	D	0.89	37	#206	C	0.74	26	187
	SBL	A	0.15	10	6	A	0.32	12	14
	SBT	C	0.75	28	#151	E	0.99	55	#299
	SBR	A	0.23	4	11	A	0.28	3	12
<b>Stop-Controlled</b>									
Triangle Street at Abbott Street East	NBLTR	A	0.03	10	0	A	0.03	13	1
	EBL	A	0.01	7	0	A	0.02	8	1
	WBL	A	0.00	7	0	A	0.01	8	0
	SBLTR	A	0.04	10	3	A	0.11	13	4
Triangle Street at Cranesbill Road	NBLR	A	0.09	11	0	A	0.12	11	3
	WBL	A	0.02	8	0	A	0.01	8	0
Triangle Street at Honeylocust Avenue	NBLTR	A	0.03	10	1	A	0.03	10	1
	EBL	A	0.01	7	0	A	0.01	7	0
	WBL	A	0.00	7	0	A	0.01	7	0
	SBLTR	A	0.04	10	1	A	0.05	10	1
Triangle Street at Site Access	WBLR	A	0.03	9	1	A	0.06	9	1
	SBL	A	0.00	0	0	A	0.01	7	0
<b>Roundabout</b>									
	NB	A	0.24	4	9	A	0.17	4	6

Intersection	Movement	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Delay (s/veh)	95th Percentile Queue	LOS	V/C	Delay (s/veh)	95th Percentile Queue
Abbott Street E at Cranesbill Road / Rouncey Road	WB	A	0.25	5	13	A	0.39	6	23
	SB	A	0.14	8	5	A	0.12	9	5
	EB	A	0.25	5	11	A	0.28	5	13
Abbott Street E at Robert Grant Avenue	NB	E	0.98	28	199	B	0.70	8	56
	WB	D	0.83	47	82	A	0.48	12	29
	SB	A	0.36	7	16	A	0.60	6	37
	EB	A	0.53	11	32	B	0.62	14	46
Robert Grant Avenue at Cranesbill Road	NB	E	0.99	29	227	C	0.73	7	61
	WB	B	0.64	37	46	A	0.29	13	15
	SB	A	0.41	6	21	C	0.73	6	59
	EB	A	0.35	11	17	A	0.28	17	14

\* EBT restricted during the AM Peak Hour

#95<sup>th</sup> Percentile volume exceeds capacity, queue may be longer

As illustrated, the site access on triangle street is expected to operate at LOS A during both the 2027 and 2032 horizons, with minimal delays and queues. Overall, the site-generated traffic is expected to have negligible impacts on the background transportation network.

While not quantifiable through Synchro software, consideration was given to a qualitative assessment of the layby area on Honeylocust Avenue which is expected to be dedicated to parent pick-up / drop-offs. As previously mentioned, the layby areas is approximately 100 m. Assuming an average vehicle length of 6 m with and a 1 m standstill distance, the layby area is expected to be able to accommodate a total of 14 vehicles. As described in Table 10, a total of 42 vehicle drop offs are expected during school pick-up and drop-off times. It's assumed that any spillover traffic not accommodated for by the layby area could be accommodated within the school parking area. However, operations should be monitored in the future and mitigation measures be implemented as required.

### 13.8 Intersection Level of Service (MMLoS)

Methodology for assessing Intersection levels of service for PLOS, BLOS, TLOS, and TLOS is outlined within the City of Ottawa MMLoS Guidelines. As noted previously, the guideline provides methodology for signalized intersections only. Within the study area, Terry Fox Drive at Abbott Street East / Castlefrank Road is the only signalized intersection; MMLoS analysis of this intersection is summarized in Table 29; detailed MMLoS worksheets are included in Appendix J.

**The Pedestrian LOS (PLOS)** target of B is based on the Outer Urban or Suburban classification. The target is met for all legs under existing and future conditions except for the North crossing, which will reach PLOS C as a result of the high peak hour EB left turn volumes. It is not expected that this crossing can be improved to meet the target of B with a conversion of fully protected operation alone, additional protected intersections elements would be required to meet the target.

**The Bicycle LOS (PLOS)** target of B is based on the east and south legs of the intersection being designated as part of the cross-town bikeway. The target is not met on any of the intersection legs as there are no dedicated cycling crossings provided. It is anticipated that additional protected intersection measures would be required to meet or approach the target.

Table 29: Intersection MMLOS Evaluation

Intersection	Side	Existing				Future (2032)			
		PLOS	BLOS	TLOS	AutoLOS	PLOS	BLOS	TLOS	AutoLOS
<b>TARGET</b>		<b>B</b>	<b>B</b>	<b>E</b>	<b>E</b>	<b>B</b>	<b>B</b>	<b>E</b>	<b>E</b>
<b>Terry Fox Drive / Abbott Street / Castlefrank Druive</b>	North (SB)	C	F	A	E	C	F	A	F
	South (NB)	B	D	E		B	E	E	
	East (WB)	B	C	D		B	C	D	
	West (EB)	B	F	F		B	F	F	

The **Transit LOS (TLOS)** target of E is based on mixed traffic operation and is met on most of the intersection segment, but peak hour delays for the EB left turn will correspond to TLOS F. This operation is anticipated to remain at a similar level in the future as traffic increases.

**Auto LOS (VLOS)** target of E is based on the Outer Urban or Suburban classification. This target is met under existing conditions, but will include movements that increase to F by the 2032 horizon, as outlined in the traffic analysis in the preceding sections.

It is noted that all of the future MMLOS impacts at the Terry Fox / Abbott / Hazeldean will be driven by development and overall traffic growth in the area with the proposed school as a small driver of the increases. The need for future improvements at this intersection should be monitored by the City of Ottawa and may change as traffic patterns shift once the Robert Grant Drive extension is opened to the west.

## 14.0 SUMMARY AND RECOMMENDATIONS

The following summarizes the conclusions and recommendations provided throughout this TIA:

- OCSB is planning to construct a new elementary school at 620 Triangle Street in the Fernbank neighborhood.
- The proposed development will include a single storey building with a GFA of approximately 4,960 m<sup>2</sup> including 16 elementary school classrooms and a two age-group child care center accommodating an anticipated total of 610 staff and students.
- The site is anticipated to generate a total of 806 person trips during the morning and afternoon peak hours. This includes a total of 10 school buses and 90 auto driver trips.
- The site is anticipated to have a total of 48 bicycle spaces and 89 parking spaces for staff and visitors including four barrier free accessible spaces which meets the City of Ottawa Zoning by-law requirements.
- The study area boundary streets are anticipated to be operating at acceptable multi-modal levels of service, including PLOS, BLOS, and TLOS.
- There are however, a number of recommendations with respect to enhanced pedestrian protection that the City should consider including the following:
  - Installation of Level 2 Type D PXOs at:
    - Cranesbill Road at Triangle Street.
    - Triangle Street at Honeylocust Avenue.
    - Abbott Street East at Malahat Way / Lanceleaf Way (east side).
  - Consider locating the future transit stops on Abbott Street East at Malahat Way / Lanceleaf way in place of Triangle Street.
  - City of Ottawa to Assess and Implement PXOs at uncontrolled crossings, where appropriate.
  - City of Ottawa provides pavement markings for pedestrian crossings.

- The construction of the layby areas will be approved through the City's Road Modification Application, consideration should be given to the proposed widths with supplementary traffic calming measures to address potential speeding as a result of the increased road width.
- Additional considerations should be given to the implementation of a 30 km/h school zone speed limit and community safety zone adoption.
- The study area stop-controlled intersections are operating well and are anticipated to continue to operate well to the future 2032 horizon year.
- The intersection of Terry Fox Drive at Abbott Street East / Castlefrank Road is expected to be operating with some movements (EBL, NBT / SBT) near capacity. While the intersection is expected to see some improvements as a result of travel pattern changes associated with the Robert Grant Avenue extension and through signal timing adjustments, by the 2032 horizon year the identified movements are expected to approach capacity.
- The AM peak hour NB approaches on the roundabouts on the future Robert Grant Extension are expected to approach capacity as a result of future background volume growth; previous reports highlight the possibility of the future widening of the Robert Grant extension to accommodate future volumes.
- Overall, the development-generated traffic is minimal and is expected to have negligible impacts on the study area transportation network.
- It is assumed that any pick-up / drop-off layby area spillover could be accommodated within the school parking area. However, operations should be monitored in the future and mitigation measures be implemented as required.



## Certification Form for Transportation Impact Assessment (TIA) Study

### TIA Reports

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 and 2023 amendments.

Please note that the Certification is only required for the submission of a TIA. The Screening can be undertaken by a non-certified individual for the purpose of identifying if a TIA is needed or not.

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<sup>1</sup> professional in good standing, whose field of expertise

is either transportation engineering



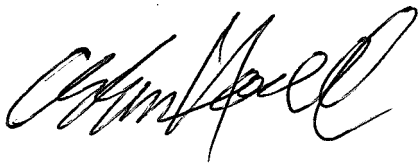
or transportation planning.

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

Dated at Ottawa this 25th day of September, 20 25.  
(City)

Name : Adam Howell, P.Eng.

Professional title: Senior Project Manager, Transportation Planning



Signature of individual certifier that they meet the above four criteria

<b>Office Contact Information (Please Print)</b>
Address: <u>210-350 Palladium Drive</u>
City / Postal Code: <u>Ottawa, ON, K2V1A8</u>
Telephone / Extension: <u>613-592-6060 x132</u>
Email Address: <u>ahowell@rcii.com</u>

Stamp



Adam Howell

Digitally signed by Adam Howell  
DN: C=CA, E=ahowell@rcii.com,  
O=Robinson Consultants Inc.,  
CN=Adam Howell  
Reason: I am the author of this  
document  
Date: 2025.09.25 15:43:16-04'00'

**APPENDIX A**  
**Proposed Site Plan Concept**

ZONING CONFIRMATION REPORT			
Municipality	City of Ottawa		
Legal Description	Block 116 Registered Plan 4M-1628 and Block 204 Registered Plan		
Survey Information	Survey Information Prepared By: Stantec Geomatics Ltd., dated 3 September 2024		
Common Address	4140 Kelly Farm Dr, Ottawa, Ontario		
Project Information	Lot Size: 27,149.52 sm Ground Floor Area: 4,690sm		
Zoning	I1A	Institutional 1A	
	Bylaw Provisions	Proposed	Compliance
Minimum Lot Width	15m	126.45	Complies
Minimum Lot Area	400 sm	7,149.52sm	Complies
Minimum Front Yard Setback	7.5m	93.6m	Complies
Minimum Rear Yard Setback	7.5m	8.9	N/A
Minimum Interior Side Yard Setback	7.5m	62.7m	Complies
Minimum Corner Side Yard Setback	4.5m	4.52m	Complies
Maximum Building Height	15.0m	7.65m	Complies

Required Parking (Schedule 1A - Area C) Rate = 1.5 per classroom (includes 16 classrooms + 6 kindergartens) Childcare 2/100sm	1.5 x 22 classrooms = 33 Spaces + 275sm Childcare/100smx2 = 6 Spaces 39 Total spaces required	89 Spaces Proposed	Complies
Future Parking (18 future portables)	1.5 x 18 portables = 27 additional Spaces total (27 + 39) = 66 Spaces	89 Spaces Proposed	Complies
HC Parking Requirements	Based on 94 parking spaces provided	4 HC Spaces Required 2 @ type A 2 @ type B	Complies
Required Bicycle Parking (1/100sm Gross Floor Area)	1/100sm X4,647sm = 47 spaces required	48 spaces (6 Bike Racks @ 8 spaces)	Complies
Required Loading Zones 1 per 1000-9999 sm of gross floor area	1 Loading Zone = 3.5m(W) X 7m (L) x 4.2m (H) As per zoning Section 113 (4) & (5)	1	Complies
Minimum Width of Landscaped Area (Landscape Buffer)	Abutting A Street = 3.0m Abutting residential, institutional = 3.0m Other Cases - None	3.0m 3.0m N/A	Complies

Landscaped Provisions for Parking Lots	Landscape buffer width: 3m abutting a street, 1.5m not abutting a street	3.6m	Complies
Refuse collection areas must be minimum 9.0m from property line abutting a street <td>Refuse collection areas must be minimum 3.0m from other property lines</td> <td>13m N/A</td> <td></td>	Refuse collection areas must be minimum 3.0m from other property lines	13m N/A	
Refuse collection area must be screened with minimum 2.0m height screen	Earth bins provided, screened by soft landscaping		
Minimum landscaped area of parking lot = 15%	Parking Lot Area = 1782sm Landscape around Parking = 478sm => 15%		

- GENERAL NOTES:**
- SEE SITE SERVICES, ELECTRICAL & MECHANICAL DRAWINGS FOR UNDERGROUND UTILITIES LINES AND FOR NEW GRADING EXCAVATE BACKFILL & PROVIDE CONCRETE TO REQUIREMENTS OF MECHANICAL, ELECTRICAL & SITE SERVICES DRAWINGS AND SPECIFICATIONS AND TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
  - PROVIDE 0.5M RADIUS FOR CONCRETE CURBS UNLESS OTHERWISE NOTED.
  - PERFORM LANDSCAPE & SITE WORKS INCLUDING WALKWAYS THE INS WITHIN THE ROAD ALLOWANCE & SITE SERVICES AS INDICATED.
  - CONTRACTOR SHALL CONSTRUCT BUS LAY BY & CAR LAY BY, INCLUDING CURBS, WALKS, ASPHALT, PAVING, GRAN. BASES, TOPSOIL & SOD.
  - CONTRACTOR TO PROVIDE TEMPORARY CONSTRUCTION FENCING ALONG PROPERTY LINE TO PROTECT THE PUBLIC DURING CONSTRUCTION.
  - CONTRACTOR TO REPORT ANY ERRORS, OMISSIONS OR DISCREPANCIES ON SITE PLAN WITH ACTUAL SITE CONDITIONS TO THE ARCHITECT BEFORE PROCEEDING WITH CONSTRUCTION.
  - CONTRACTOR IS TO NOTIFY ALL UTILITY COMPANIES AND AUTHORITIES PRIOR TO ANY EXCAVATION AND ASCERTAIN LOCATIONS OF UNDERGROUND SERVICES.
  - CONTRACTOR IS TO COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.
  - CONTRACTOR TO MAINTAIN POSITIVE SURFACE RUN-OFF THROUGHOUT ENTIRE CONSTRUCTION PERIOD.

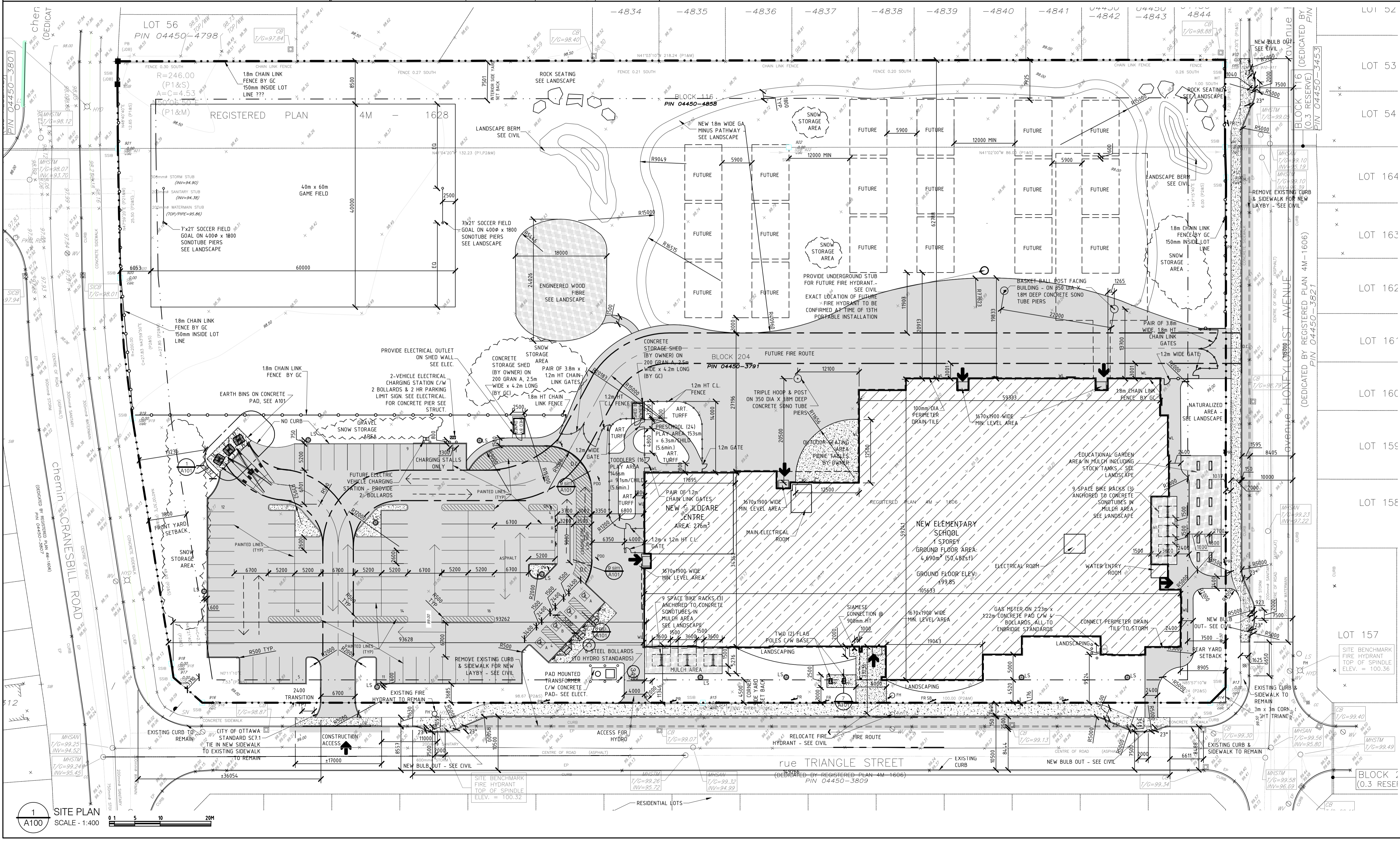


CONTEXT MAP

**OTTAWA CATHOLIC SCHOOL BOARD**  
570 WEST HUNT CLUB ROAD, NEPEAN, ON, K2G 3K4 (613)224-4455

**SITE LEGEND**

⊙ FH	FIRE HYDRANT - SEE MECH
▬ DC	DEPRESSED CURB - SEE CIVIL
▬	CONCRETE CURB - SEE CIVIL
▬	CONCRETE SIDEWALK - SEE CIVIL
▬	ASPHALT - SEE CIVIL
▬	TACTILE WALKING SURFACE INDICATOR (TWSI)
▬	ENGINEERED WOOD FIBRE - SEE LANDSCAPE
▬	CATCH BASIN, NEW - SEE CIVIL
⊙ MH	MAN HOLE, NEW - SEE CIVIL
⊙ OC	OC TRANSPO BUS STOP SIGN
⊙ HC	HANDICAP PARKING SIGN
⊙ FR	FIRE ROUTE SIGN RX512 @ 25m SPACING
⊙ OW	ONE WAY TRAFFIC SIGN
⊙ DN	DO NOT ENTER SIGN
⊙ NP	NO PARKING SIGN (RB-52) @ 25M SPACING
⊙ NP(2)	NO PARKING SIGN (RB-55R)
⊙ NP(3)	NO PARKING SIGN (RB-51)
⊙ SB	SCHOOL BUS STOPPING ZONE SIGN (RB89R)
⊙ PDD	PARENT DROP-OFF ZONE/NO IDLING SIGN -
⊙ PPR	PARKING RESTRICTED 30 MIN. MON-FRI 7:00AM-4PM SIGN (RB-53R/RB-53L) @25M SPACING
⊙ IR	RESERVED FOR DAYCARE SIGN
⊙ BH	BORE HOLE
⊙ TP	TEST PIT
⊙ LS	LIGHT STANDARD - SEE ELECTRICAL
⊙ WL	WALL MOUNT LIGHT FIXTURE - SEE ELEC.
⊙ FP	FLAG POLE
⊙ EG	EXISTING GRADE
⊙	1.8m HT. GALVANIZED CHAIN LINK FENCE UNLESS OTHERWISE NOTED
⊙	1.2m HT. GALVANIZED CHAIN LINK FENCE
⊙	GAS METER
⊙	ENTRANCE ARROW
⊙	PAINTED LINES / NO PARKING



REV	REVISION DESCRIPTION	DATE
5	ISSUED FOR SITE PLAN CONTROL	22/SEP/2025
4	ISSUED FOR PHASE 3 SPC	7/APR/2025
3	ISSUED FOR 75% REVIEW	12/MAR/2025
2	ISSUED FOR SPC PRE-CONSULTATION	22/OCT/2024
1	ISSUED FOR CLIENT REVIEW	25/SEP/2024

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CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DIMENSIONAL ERRORS AND/OR POSSIBLE TRADE INTERFERENCE CONFLICT FOR CLARIFICATION PRIOR TO COMMENCEMENT OF THE WORK. DO NOT SCALE DRAWINGS.

**ONTARIO ASSOCIATION OF ARCHITECTS**  
REGISTERED ARCHITECT  
LICENCE 7650

Not for construction unless SEALED AND SIGNED

**P R PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.**

824 Meath St. Suite 200  
Ottawa, ON K1Z 6E8

613.724.7700  
info@prty.ca

**PROJECT**  
OCBS FERNBANK NORTH ELEMENTARY SCHOOL

Triangle Street OTTAWA, ONTARIO

**DRAWING**  
SITE PLAN  
ZONING MATRIX

PROJECT NO.	24031	DRAWING NO.	A100
SCALE	AS NOTED		
DRAWN	I.R.		
CHECKED	I.R.		
PLOT DATE	22/09/2025	PLOTTED BY:	

1 SITE PLAN  
SCALE - 1:400

#xxxxxx

**APPENDIX B**  
**TIA Screening Report**

**New OCSB Elementary School  
620 Triangle Street, Ottawa  
TIA Screening**

**Prepared For:**

Pye & Richards - Temprano & Young Architects Inc.

**Prepared By:**

Robinson Consultants Inc.

Consulting Engineers

Project No. 24098

Date: October 22, 2024

## 1.0 TIA SCREENING

Robinson Consultants Inc (RCI) has been retained by Pye & Richards - Temprano & Young Architects Inc. to prepare a Transportation Impact Assessment (TIA) screening to support a site plan control application for a new elementary school at the property municipally known as 620 Triangle Street in Ottawa, Ontario. The existing site is vacant and located in a development area that commenced construction around 2017. The subject site location and surrounding road context is illustrated in Figure 1 and the proposed site plan is included as Appendix A.

Per the City of Ottawa’s 2017 TIA Guidelines and 2023 update, TIA Screening has been undertaken for the proposed site concept; the screening evaluation is summarized in the Tables below.



Figure 1: Site Location and Local Road Network

Table 1: Description of Proposed Development

Municipal Address	620 Triangle Street, Ottawa
Description of Location	Existing vacant site reserved and zoned for school use. Bounded by Triangle Street to the west, Cranesbill Road to the north, Honeylocust Avenue to the south and houses fronting Ponderosa Street to the east.
Planning Application Type(s)	Site Plan Control
Land Use Classification	I1A
Development Size (units)	16 classrooms plus child care centre, 610 total population (students and staff)
Development Size (m <sup>2</sup> )	4,690 m <sup>2</sup>
Lot Area (m <sup>2</sup> )	23,482.62 m <sup>2</sup> (2.35 Ha)
Number of Accesses and Locations	One main access to parking from Triangle Street, gated emergency access from Honeylocust Avenue. Layby areas along Triangle Street (east side) and Honeylocust Avenue (north side)
Phases of Development	Single Phase
Buildout Year	2027

Table 2: Trip Generation Trigger

Land Use Type	Minimum Development Size	Proposed Development Size
Single-Family Homes	60 units	-
Multi-use Family (Low-Rise)	90 units	-
Multi-Use Family (High-Rise)	150 units	-
Office	3,500 m <sup>2</sup>	-
Industrial	5,000 m <sup>2</sup>	-
Fast-food restaurant or coffee shop	100 m <sup>2</sup>	-
Destination Retail	1,000 m <sup>2</sup>	-
Gas Station or convenience market	75 m <sup>2</sup>	-
<b>School</b>	-	610 students and staff

Per the June 2023 updates to the City of Ottawa TIA Guidelines, a development will meet the trip generation trigger if the development generates 60 or more person trips. As the proposed school will have a population of 610 students and staff who will be attending in person, it is expected that the trip generation trigger will be met.

Table 3: Location Triggers

Location Trigger	Trigger Met
Does the development propose a new driveway to a boundary street that is designated as part of the City's <a href="#">Transit Priority, Rapid Transit</a> or <a href="#">Cross-Town Bikeway Network</a> ?	No
Is the development in an <a href="#">Urban</a> or <a href="#">Village</a> Design Priority Area or <a href="#">Protected Major Transit Station Area</a> ?	No

The location trigger is not met based on the location of the site.

Table 4: Safety Triggers

Safety Trigger	Trigger Met
Are posted speed limits on a boundary street are 80 km/hr or greater?	No
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	No
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	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

Based on a review of the site location, the safety trigger is not met.

Table 5: TIA Screening Summary

Does the development satisfy the Trip Generation Trigger?	Yes
Does the development satisfy the Location Trigger?	No
Does the development satisfy the Safety Trigger?	No

Based on a review of the proposed site plan and site location, the proposed development is expected to meet the trip generation trigger for a TIA, but will not meet the location or safety triggers. As a result, a TIA study will be required.

## 2.0 PRELIMINARY SCOPING

It is anticipated based on the results of the TIA Screening that we will proceed to the preparation of the TIS Scoping Report. The following sections include a summary of the anticipated TIA parameters for verification by the City to facilitate the approach to the data collection required for the remainder of the TIA preparation.

### 2.1 Study Area

Based on a 1km radius around the site and anticipated traffic distribution to key corridors, destinations within the surrounding road network and a review of TIAs for nearby developments, we propose that the project study area include the proposed development accesses and the following existing intersections:

- Abbott Street E / Terry Fox Drive
- Abbott Street E / Cranesbill Road / Rouncey Road
- Abbott Street E / Triangle Street
- Triangle Street / Honeylocust Avenue
- Triangle Street / Cranesbill Road
- Future Robert Grant Avenue Extension / Future Cranesbill Road Extension

### 2.2 Study Time Periods

As the proposed development consists of residential uses, we propose that the TIA analysis be undertaken for weekday AM and PM peak hours. Shifted peak hour analysis may be considered to align with the pickup and drop-off periods in the vicinity of the anticipated school bell times.

### 2.3 Horizon Years

It is anticipated that the TIA traffic analysis will include a 2027 opening day scenario as well as a 2032 opening day plus five years scenario.

### 2.4 Exemptions Review

Based on a preliminary review of the proposed development and surrounding road network, a summary of the anticipated TIA Module exemptions is summarized in Table 6.

Table 6: Preliminary TIA Module Exemptions Review

Module / Element	Exemption Considerations	Exemption and Rationale
<b>4.1 Development Design</b>		
4.1.1 Design for Sustainable Modes	Required for All TIAs	<b>Required</b>
4.1.2 Circulation and Access	Only required for site plans and ZBA	<b>Required</b>
4.1.3 New Street Network	Only required for plans of subdivision	<b>Exempt</b>
<b>4.2 Parking</b>		
4.2.1 Parking Supply	Only required for site plans and ZBA	<b>Required</b>
4.2.2 Spillover Parking	Deleted per 2023 TIA Guidelines Update	<b>Exempt</b> – Deleted per 2023 TIA Guidelines Update
<b>4.3 Boundary Streets</b>	Required for All TIAs	<b>Required</b>

Module / Element	Exemption Considerations	Exemption and Rationale
4.4 Access Intersections Design	Deleted and Moved to 4.9 per 2023 TIA Guidelines Update	N/A
4.5 TDM	Required for All TIAs	Required
4.6 Neighbourhood Traffic Calming	Required 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:	<b>Exempt</b> – all criteria are met except for application type, site plan control.
	1. Access to Collector or Local;	Condition met – access via Triangle Street
	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.	Condition met – proposed school, daycare and adjacent residential use.
	3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision;	Condition not met – application is for site plan control.
	4. At least 75 site-generated auto trips;	To be determined based on anticipated school catchment area and number of students provided bussing, but likely to be met.
	5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	To be determined based on anticipated school catchment area and number of students being provided bussing. Likely to be met during isolated pickup and drop-off periods on Triangle Street compared with existing residential use.
4.7 Transit		
4.7.1 Route Capacity	Required if > 75 site transit trips	<b>Exempt</b> – transit use will be limited to staff only, 46 total staff anticipated.
4.7.2 Transit Priority	Required if > 75 site auto trips	<b>Exempt</b> – while condition is met, limited potential for transit priority on surrounding intersections where transit is present (Abbott Street roundabouts)
4.8 Network Concept	When proposed development generates > 200 person-trips during the peak hour in excess if the	<b>Exempt</b> , site is zoned for school use.

Module / Element	Exemption Considerations	Exemption and Rationale
	equivalent volume permitted by established zoning	
<b>4.9 Intersection Design</b>		
4.9.1 Intersection Control	Required if > 75 site auto trips	<b>Not Exempt</b>
4.9.2 Intersection Design	Required if > 75 site auto trips	<b>Not Exempt</b>

**APPENDIX C**  
**Traffic Data**

# Kanata - Stittsville

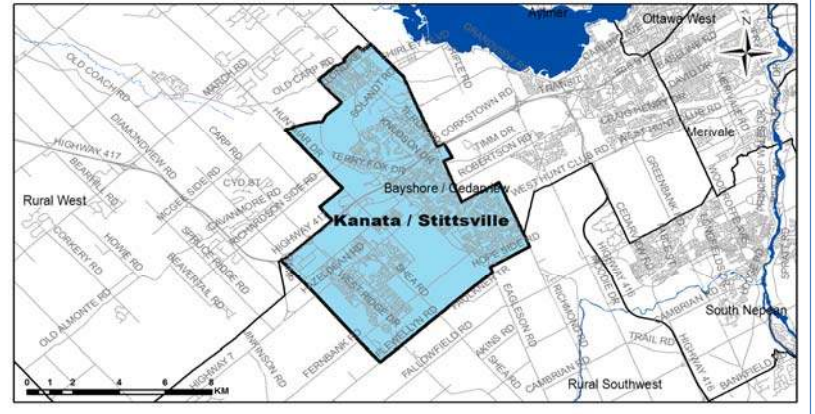
## Demographic Characteristics

Population	105,210	Actively Travelled	83,460
Employed Population	49,640	Number of Vehicles	64,540
Households	38,010	Area (km <sup>2</sup> )	82.6

Occupation Status (age 5+)	Male	Female	Total
Full Time Employed	24,670	19,590	44,260
Part Time Employed	1,540	3,840	5,380
Student	13,630	13,410	27,040
Retiree	6,480	8,350	14,820
Unemployed	850	940	1,790
Homemaker	160	3,310	3,470
Other	350	1,010	1,360
<b>Total:</b>	<b>47,690</b>	<b>50,440</b>	<b>98,120</b>

Traveller Characteristics	Male	Female	Total
Transit Pass Holders	5,940	6,920	12,860
Licensed Drivers	36,280	36,790	73,070
Telecommuters	200	380	580
Trips made by residents	135,300	143,330	278,630

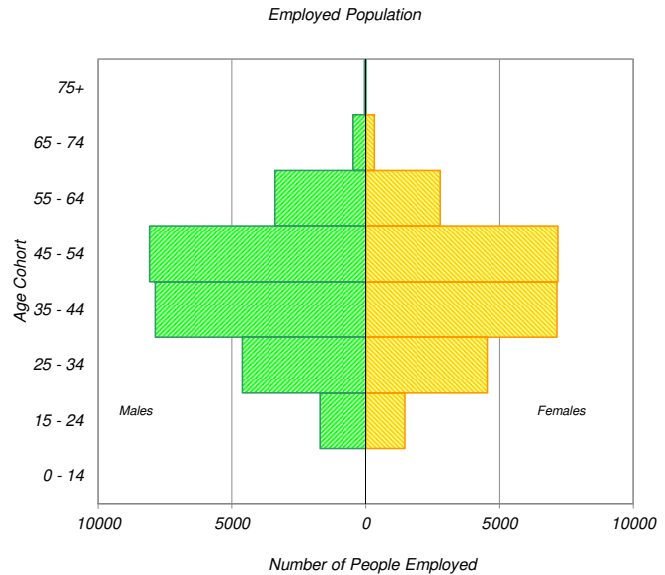
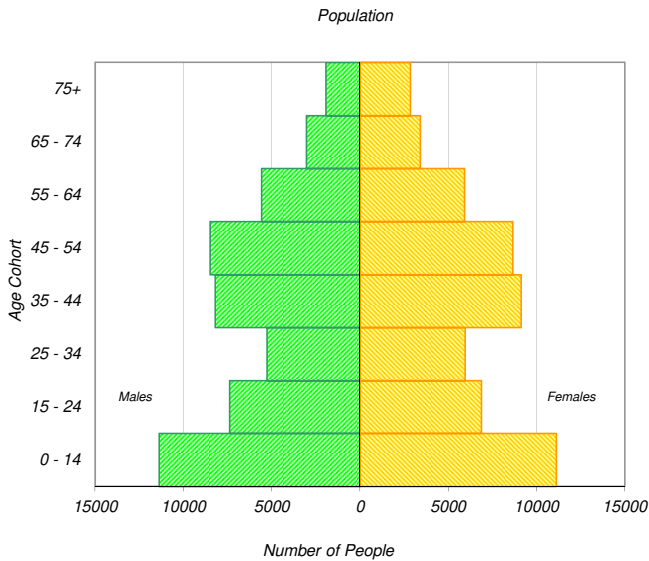
Selected Indicators	
Daily Trips per Person (age 5+)	2.84
Vehicles per Person	0.61
Number of Persons per Household	2.77
Daily Trips per Household	7.33
Vehicles per Household	1.70
Workers per Household	1.31
Population Density (Pop/km <sup>2</sup> )	1270



Household Size		
1 person	5,810	15%
2 persons	11,660	31%
3 persons	7,490	20%
4 persons	8,890	23%
5+ persons	4,160	11%
<b>Total:</b>	<b>38,010</b>	<b>100%</b>

Households by Vehicle Availability		
0 vehicles	1,050	3%
1 vehicle	14,090	37%
2 vehicles	19,110	50%
3 vehicles	3,000	8%
4+ vehicles	770	2%
<b>Total:</b>	<b>38,010</b>	<b>100%</b>

Households by Dwelling Type		
Single-detached	21,610	57%
Semi-detached	3,890	10%
Townhouse	10,550	28%
Apartment/Condo	1,960	5%
<b>Total:</b>	<b>38,010</b>	<b>100%</b>

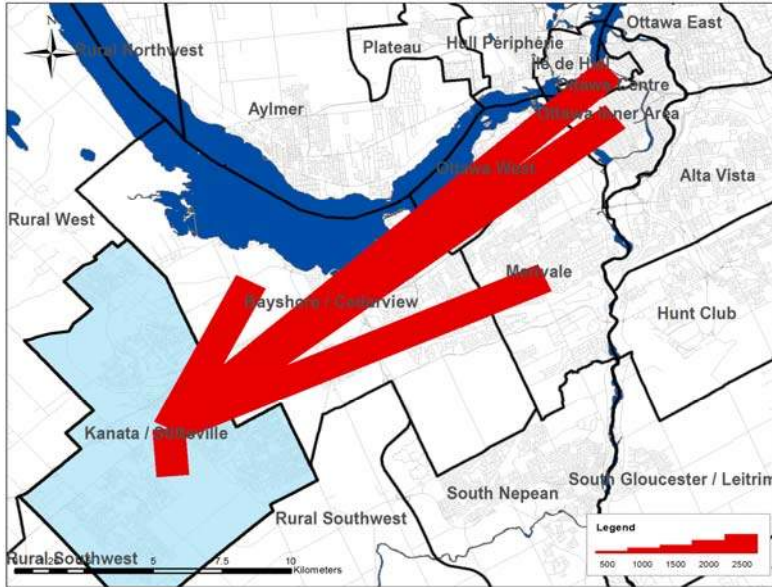


\* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

## Travel Patterns

### Top Five Destinations of Trips from Kanata - Stittsville

#### AM Peak Period



### Summary of Trips to and from Kanata - Stittsville

#### AM Peak Period (6:30 - 8:59)

Districts	Destinations of Trips From		Origins of Trips To	
	District	% Total	District	% Total
Ottawa Centre	4,560	8%	140	0%
Ottawa Inner Area	3,350	6%	970	2%
Ottawa East	660	1%	260	1%
Beacon Hill	280	0%	170	0%
Alta Vista	1,810	3%	660	1%
Hunt Club	490	1%	420	1%
Merivale	3,410	6%	1,200	3%
Ottawa West	2,020	4%	840	2%
Bayshore / Cedarview	5,010	9%	2,420	5%
Orléans	290	1%	500	1%
Rural East	100	0%	30	0%
Rural Southeast	50	0%	260	1%
South Gloucester / Leitrim	60	0%	140	0%
South Nepean	690	1%	1,800	4%
Rural Southwest	1,130	2%	1,850	4%
Kanata / Stittsville	30,360	54%	30,360	66%
Rural West	1,050	2%	3,250	7%
Île de Hull	670	1%	30	0%
Hull Périphérie	160	0%	30	0%
Plateau	100	0%	230	0%
Aylmer	0	0%	190	0%
Rural Northwest	20	0%	60	0%
Pointe Gatineau	20	0%	80	0%
Gatineau Est	0	0%	60	0%
Rural Northeast	30	0%	50	0%
Buckingham / Masson-Angers	30	0%	10	0%
<b>Ontario Sub-Total:</b>	<b>55,320</b>	<b>98%</b>	<b>45,270</b>	<b>98%</b>
<b>Québec Sub-Total:</b>	<b>1,030</b>	<b>2%</b>	<b>740</b>	<b>2%</b>
<b>Total:</b>	<b>56,350</b>	<b>100%</b>	<b>46,010</b>	<b>100%</b>

### Trips by Trip Purpose

24 Hours	From District		To District		Within District	
Work or related	27,180	29%	17,020	18%	14,550	9%
School	7,070	7%	2,500	3%	15,110	9%
Shopping	6,070	6%	9,150	10%	22,480	14%
Leisure	8,450	9%	10,590	11%	17,090	11%
Medical	2,520	3%	1,170	1%	2,660	2%
Pick-up / drive passenger	6,570	7%	5,470	6%	15,190	9%
Return Home	33,610	35%	45,620	48%	65,770	41%
Other	3,560	4%	3,590	4%	8,440	5%
<b>Total:</b>	<b>95,030</b>	<b>100%</b>	<b>95,110</b>	<b>100%</b>	<b>161,290</b>	<b>100%</b>

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Work or related	18,030	69%	11,020	70%	7,430	24%
School	4,890	19%	2,280	15%	11,740	39%
Shopping	170	1%	320	2%	760	3%
Leisure	340	1%	400	3%	780	3%
Medical	330	1%	230	1%	350	1%
Pick-up / drive passenger	1,260	5%	580	4%	4,760	16%
Return Home	290	1%	380	2%	1,980	7%
Other	670	3%	430	3%	2,560	8%
<b>Total:</b>	<b>25,980</b>	<b>100%</b>	<b>15,640</b>	<b>100%</b>	<b>30,360</b>	<b>100%</b>

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Work or related	390	2%	350	1%	930	2%
School	370	2%	0	0%	90	0%
Shopping	1,030	5%	1,910	7%	5,100	14%
Leisure	2,140	11%	3,080	11%	4,130	11%
Medical	230	1%	180	1%	400	1%
Pick-up / drive passenger	1,980	10%	1,980	7%	3,410	9%
Return Home	12,130	64%	20,550	71%	21,560	58%
Other	680	4%	860	3%	1,850	5%
<b>Total:</b>	<b>18,950</b>	<b>100%</b>	<b>28,910</b>	<b>100%</b>	<b>37,470</b>	<b>100%</b>

Peak Period (%)	Total:	% of 24 Hours	Within District (%)
24 Hours	351,430		46%
AM Peak Period	71,980	20%	42%
PM Peak Period	85,330	24%	44%

### Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	63,470	67%	63,830	67%	92,190	57%
Auto Passenger	15,220	16%	14,920	16%	31,880	20%
Transit	12,200	13%	12,270	13%	4,050	3%
Bicycle	360	0%	410	0%	960	1%
Walk	40	0%	50	0%	21,080	13%
Other	3,730	4%	3,660	4%	11,130	7%
<b>Total:</b>	<b>95,020</b>	<b>100%</b>	<b>95,140</b>	<b>100%</b>	<b>161,290</b>	<b>100%</b>

AM Peak (06:30 - 08:59)	From District		To District		Within District	
Auto Driver	15,360	59%	11,530	74%	13,630	45%
Auto Passenger	2,450	9%	1,160	7%	5,050	17%
Transit	6,230	24%	1,290	8%	1,210	4%
Bicycle	30	0%	80	1%	220	1%
Walk	0	0%	40	0%	5,730	19%
Other	1,900	7%	1,560	10%	4,510	15%
<b>Total:</b>	<b>25,970</b>	<b>100%</b>	<b>15,660</b>	<b>100%</b>	<b>30,350</b>	<b>100%</b>

PM Peak (15:30 - 17:59)	From District		To District		Within District	
Auto Driver	13,850	73%	17,660	61%	21,240	57%
Auto Passenger	3,240	17%	4,270	15%	8,570	23%
Transit	1,270	7%	5,980	21%	670	2%
Bicycle	40	0%	100	0%	260	1%
Walk	40	0%	0	0%	4,570	12%
Other	520	3%	910	3%	2,160	6%
<b>Total:</b>	<b>18,960</b>	<b>100%</b>	<b>28,920</b>	<b>100%</b>	<b>37,470</b>	<b>100%</b>

Avg Vehicle Occupancy	From District		To District		Within District	
24 Hours	1.24		1.23		1.35	
AM Peak Period	1.16		1.10		1.37	
PM Peak Period	1.23		1.24		1.40	

Transit Modal Split	From District		To District		Within District	
24 Hours	13%		13%		3%	
AM Peak Period	26%		9%		6%	
PM Peak Period	7%		21%		2%	

## Turning Movement Count - Study Results

### ABBOTT ST @ ROBERT GRANT AVE

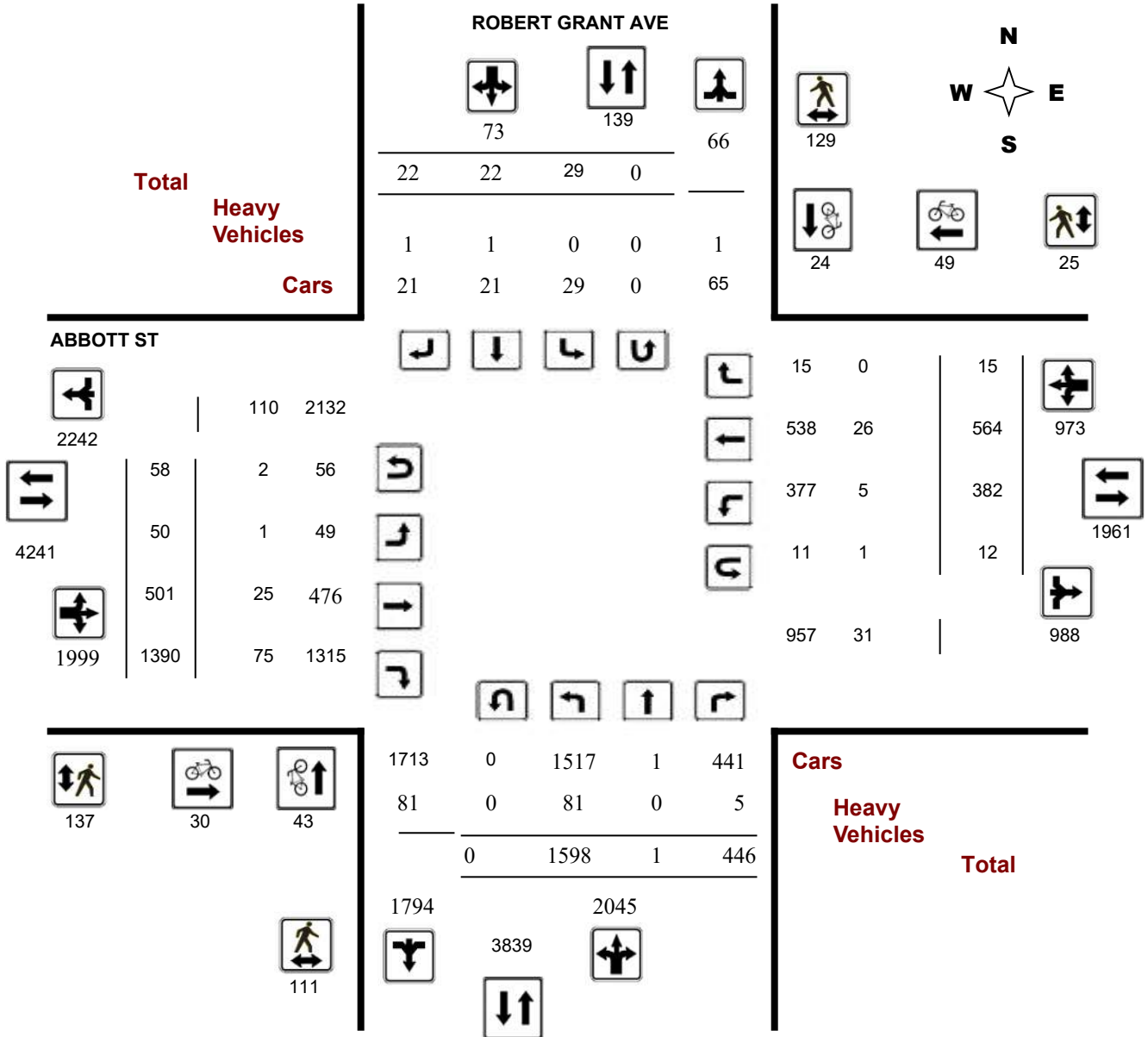
**Survey Date:** Tuesday, September 27, 2022

**WO No:** 40592

**Start Time:** 07:00

**Device:** Miovision

### Full Study Diagram



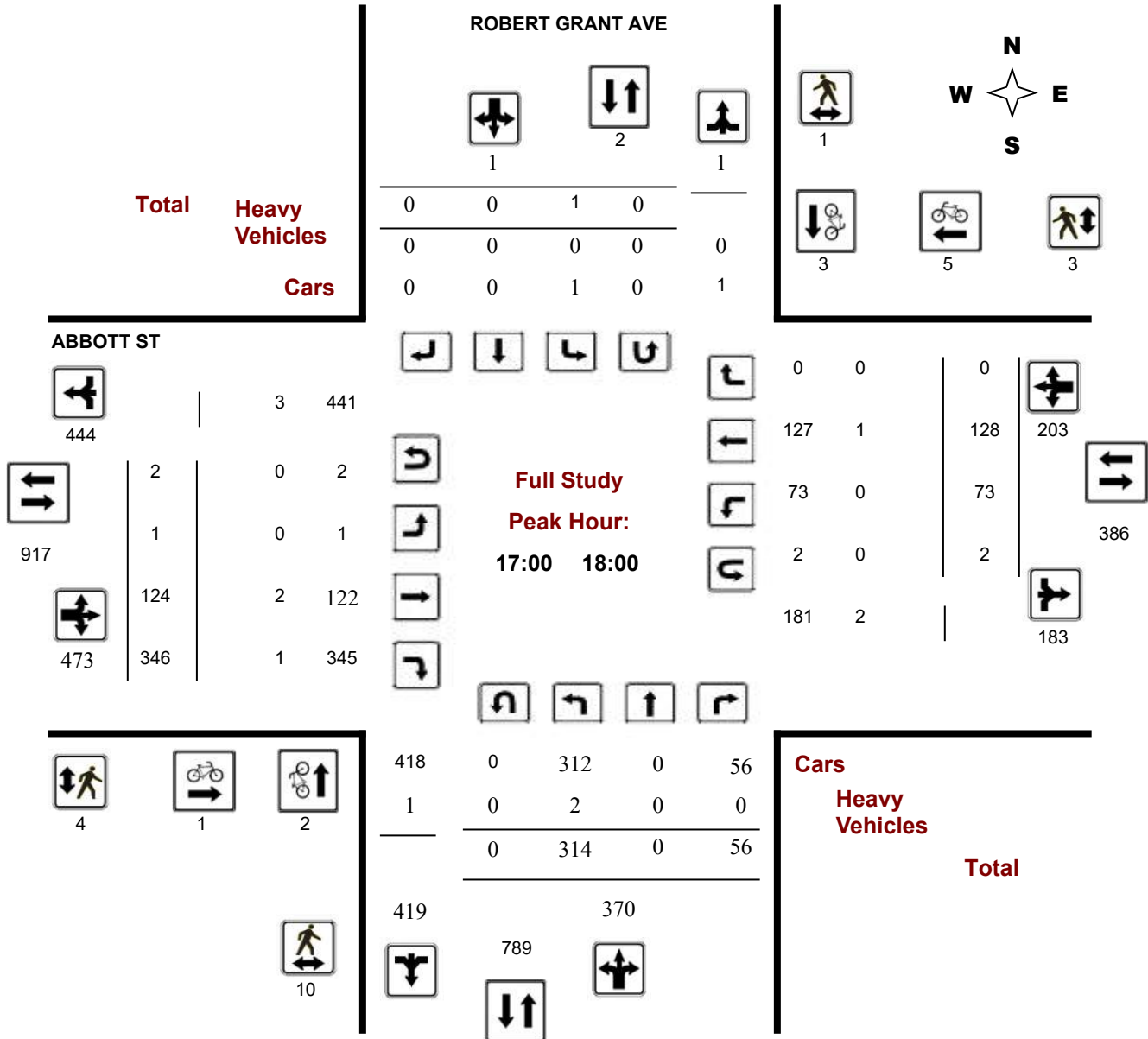
**Survey Date:** Tuesday, September 27, 2022

**WO No:** 40592

**Start Time:** 07:00

**Device:** Miovision

### Full Study Peak Hour Diagram





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

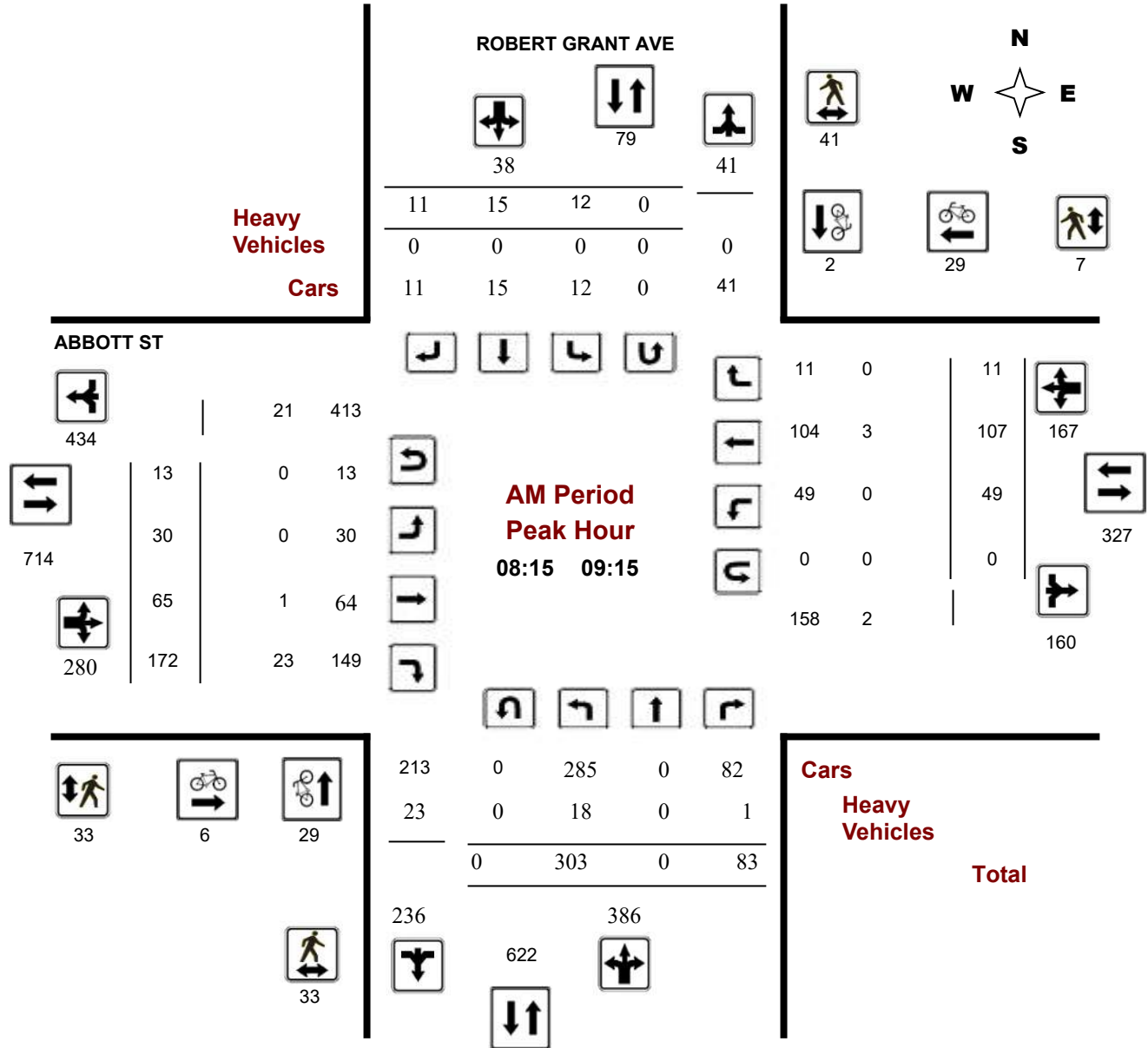
### ABBOTT ST @ ROBERT GRANT AVE

**Survey Date:** Tuesday, September 27, 2022

**Start Time:** 07:00

**WO No:** 40592

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

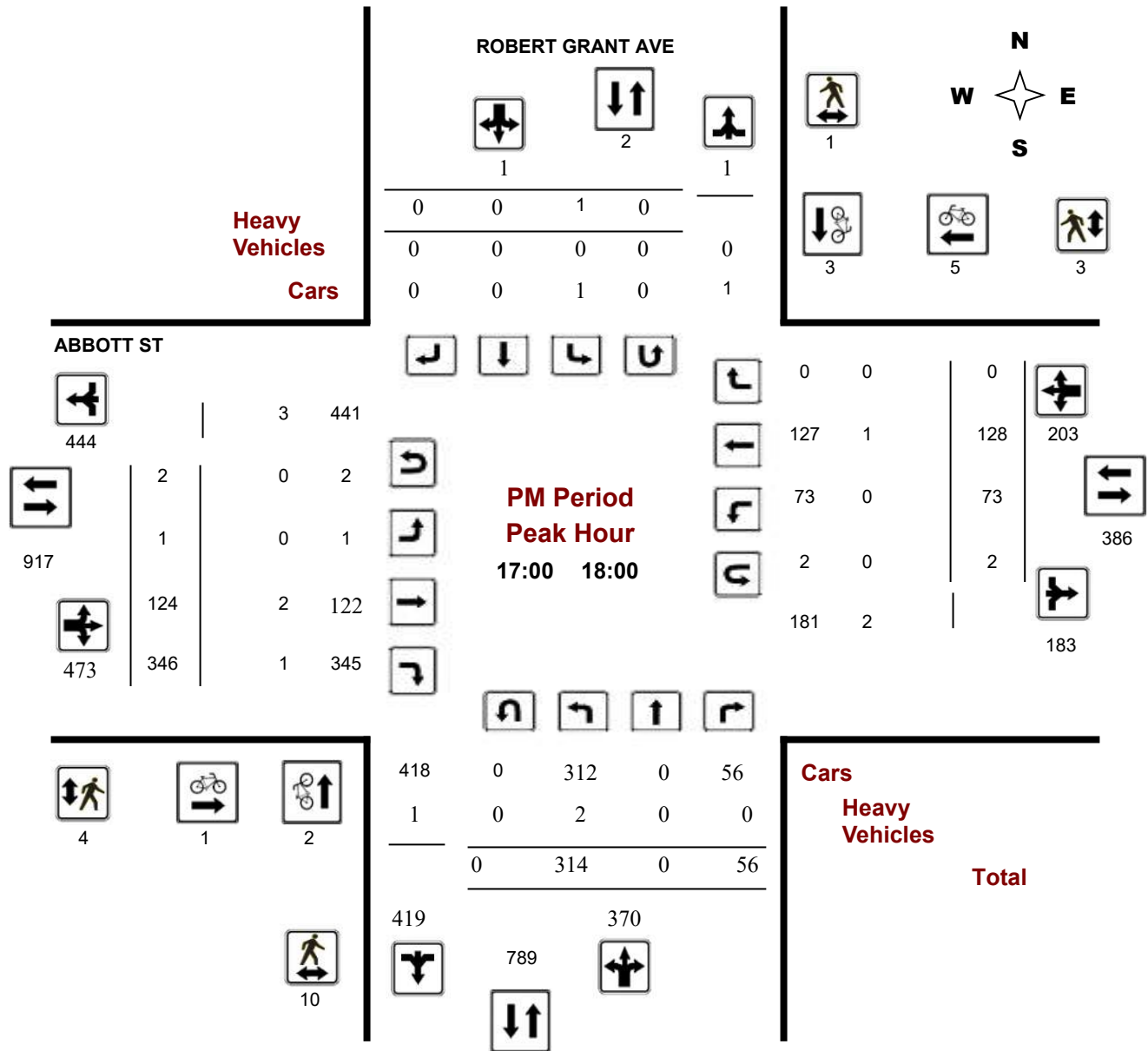
### ABBOTT ST @ ROBERT GRANT AVE

**Survey Date:** Tuesday, September 27, 2022

**Start Time:** 07:00

**WO No:** 40592

**Device:** Miovision



**Comments**



Turning Movement Count - Full Study Summary (No AADT) Report

**ABBOTT ST @ ROBERT GRANT AVE**

**Survey Date:** Tuesday, September 27, 2022

**Total Observed U-Turns**

Northbound: 0                      Southbound: 0  
Eastbound: 58                      Westbound: 12

**Full Study**

Period	ROBERT GRANT AVE									ABBOTT ST									Grand Total
	Northbound				Southbound					Eastbound			Westbound						
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	
07:00 08:00	253	0	77	330	0	3	1	4	334	2	39	131	172	42	96	0	138	310	644
08:00 09:00	307	1	72	380	7	2	5	14	394	15	69	171	255	64	103	6	173	428	822
09:00 10:00	216	0	64	280	7	15	7	29	309	17	52	158	227	47	66	7	120	347	656
15:00 16:00	218	0	81	299	13	2	9	24	323	13	100	257	370	89	61	2	152	522	845
16:00 17:00	290	0	96	386	1	0	0	1	387	2	117	327	446	67	110	0	177	623	1010
17:00 18:00	314	0	56	370	1	0	0	1	371	1	124	346	471	73	128	0	201	672	1043
<b>Sub Total</b>	1598	1	446	2045	29	22	22	73	2118	50	501	1390	1941	382	564	15	961	2902	5020
<b>U Turns</b>	0			0	0			0	0	58			58	12			12	70	70
<b>Total</b>	1598	1	446	2045	29	22	22	73	2118	108	501	1390	1999	394	564	15	973	2972	5090

**Comments:**

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



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ ROBERT GRANT AVE

**Survey Date:** Tuesday, September 27, 2022

**WO No:** 40592

**Start Time:** 07:00

**Device:** Miovision

### Full Study Cyclist Volume

#### ROBERT GRANT AVE

#### ABBOTT ST

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	1	0	1	1	1	2	3
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	3	0	3	0	1	1	4
17:45 18:00	0	0	0	0	2	2	2
07:45 08:00	1	0	1	0	0	0	1
08:00 08:15	0	0	0	0	1	1	1
08:15 08:30	0	0	0	1	2	3	3
08:30 08:45	11	0	11	2	11	13	24
08:45 09:00	11	1	12	2	8	10	22
09:00 09:15	7	1	8	1	8	9	17
09:15 09:30	2	1	3	1	1	2	5
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	1	0	1	1
15:00 15:15	0	0	0	1	0	1	1
15:15 15:30	3	0	3	1	1	2	5
15:30 15:45	0	10	10	7	3	10	20
15:45 16:00	2	8	10	4	0	4	14
16:00 16:15	0	0	0	1	1	2	2
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	4	3	7	7
16:45 17:00	0	0	0	2	3	5	5
17:00 17:15	0	2	2	0	1	1	3
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	2	1	3	1	2	3	6
<b>Total</b>	<b>43</b>	<b>24</b>	<b>67</b>	<b>30</b>	<b>49</b>	<b>79</b>	<b>146</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ ROBERT GRANT AVE

**Survey Date:** Tuesday, September 27, 2022

**WO No:** 40592

**Start Time:** 07:00

**Device:** Miovision

### Full Study Pedestrian Volume

#### ROBERT GRANT AVE

#### ABBOTT ST

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	0	1	1	1
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	1	0	1	1
17:45 18:00	1	1	2	0	0	0	2
07:45 08:00	0	0	0	1	0	1	1
08:00 08:15	3	2	5	0	0	0	5
08:15 08:30	4	1	5	0	1	1	6
08:30 08:45	4	2	6	2	2	4	10
08:45 09:00	14	3	17	19	4	23	40
09:00 09:15	11	35	46	12	0	12	58
09:15 09:30	2	1	3	2	0	2	5
09:30 09:45	4	4	8	2	0	2	10
09:45 10:00	5	0	5	0	0	0	5
15:00 15:15	1	4	5	0	0	0	5
15:15 15:30	7	1	8	5	0	5	13
15:30 15:45	31	64	95	82	10	92	187
15:45 16:00	5	10	15	5	3	8	23
16:00 16:15	0	0	0	2	0	2	2
16:15 16:30	5	0	5	0	0	0	5
16:30 16:45	2	0	2	0	0	0	2
16:45 17:00	3	1	4	0	1	1	5
17:00 17:15	1	0	1	0	0	0	1
17:15 17:30	6	0	6	2	1	3	9
17:30 17:45	2	0	2	2	2	4	6
<b>Total .....</b>	<b>111</b>	<b>129</b>	<b>240</b>	<b>137</b>	<b>25</b>	<b>162</b>	<b>402</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ ROBERT GRANT AVE

**Survey Date:** Tuesday, September 27, 2022

**WO No:** 40592

**Start Time:** 07:00

**Device:** Miovision

### Full Study Heavy Vehicles

#### ROBERT GRANT AVE

#### ABBOTT ST

Northbound                      Southbound                      Eastbound                      Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	3	0	1	9	0	0	0	0	9	0	2	5	10	0	0	0	3	13	11
07:15 07:30	2	0	0	8	0	1	0	1	9	0	0	5	7	0	0	0	0	7	8
07:30 07:45	5	0	0	11	0	0	0	0	11	0	1	4	11	2	1	0	4	15	13
17:45 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 08:00	7	0	1	12	0	0	0	0	12	0	0	4	11	0	0	0	1	12	12
08:00 08:15	3	0	1	5	0	0	1	2	7	1	2	0	7	1	0	0	4	11	9
08:15 08:30	1	0	1	5	0	0	0	0	5	0	0	3	4	0	0	0	1	5	5
08:30 08:45	2	0	0	7	0	0	0	0	7	0	0	5	8	0	1	0	1	9	8
08:45 09:00	8	0	0	17	0	0	0	0	17	0	1	9	20	0	2	0	3	23	20
09:00 09:15	7	0	0	13	0	0	0	0	13	0	0	6	13	0	0	0	0	13	13
09:15 09:30	9	0	0	11	0	0	0	0	11	0	1	2	14	0	0	0	1	15	13
09:30 09:45	0	0	0	3	0	0	0	0	3	0	0	3	5	0	0	0	0	5	4
09:45 10:00	4	0	0	4	0	0	0	0	4	0	1	0	7	0	2	0	3	10	7
15:00 15:15	8	0	0	11	0	0	0	0	11	0	4	3	17	0	2	0	6	23	17
15:15 15:30	4	0	0	7	0	0	0	0	7	0	2	3	13	0	4	0	6	19	13
15:30 15:45	3	0	0	10	0	0	0	0	10	0	1	7	11	0	0	0	1	12	11
15:45 16:00	0	0	1	7	0	0	0	0	7	0	3	6	10	0	1	0	7	17	12
16:00 16:15	7	0	0	13	0	0	0	0	13	0	3	4	18	2	4	0	9	27	20
16:15 16:30	3	0	0	4	0	0	0	0	4	0	2	1	8	0	2	0	4	12	8
16:30 16:45	1	0	0	2	0	0	0	0	2	0	0	1	7	0	5	0	5	12	7
16:45 17:00	2	0	0	5	0	0	0	0	5	0	0	3	6	0	1	0	1	7	6
17:00 17:15	2	0	0	3	0	0	0	0	3	0	0	1	4	0	1	0	1	5	4
17:15 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	4	2
Total: None	81	0	5	167	0	1	1	3	170	1	25	75	213	5	26	0	63	276	223



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ ROBERT GRANT AVE

**Survey Date:** Tuesday, September 27, 2022

**WO No:** 40592

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute U-Turn Total

#### ROBERT GRANT AVE

#### ABBOTT ST

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	2	0	2
17:45	18:00	0	0	0	1	1
07:45	08:00	0	0	2	0	2
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	4	0	4
08:45	09:00	0	0	4	0	4
09:00	09:15	0	0	5	0	5
09:15	09:30	0	0	6	0	6
09:30	09:45	0	0	2	0	2
09:45	10:00	0	0	2	0	2
15:00	15:15	0	0	5	0	5
15:15	15:30	0	0	7	0	7
15:30	15:45	0	0	8	9	17
15:45	16:00	0	0	1	1	2
16:00	16:15	0	0	4	0	4
16:15	16:30	0	0	1	0	1
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	3	0	3
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	1	1	2
17:30	17:45	0	0	1	0	1
Total		0	0	58	12	70

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

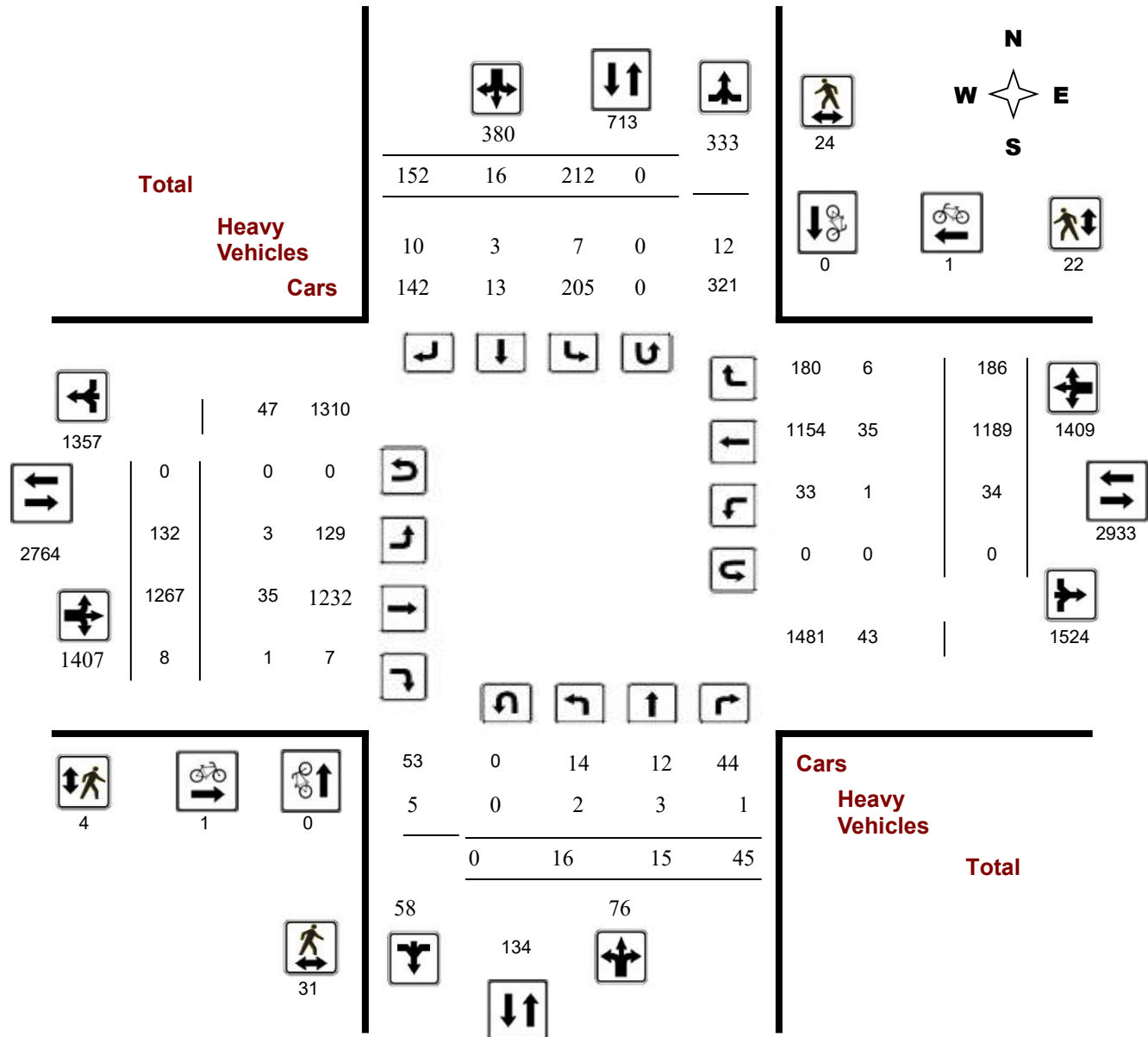
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

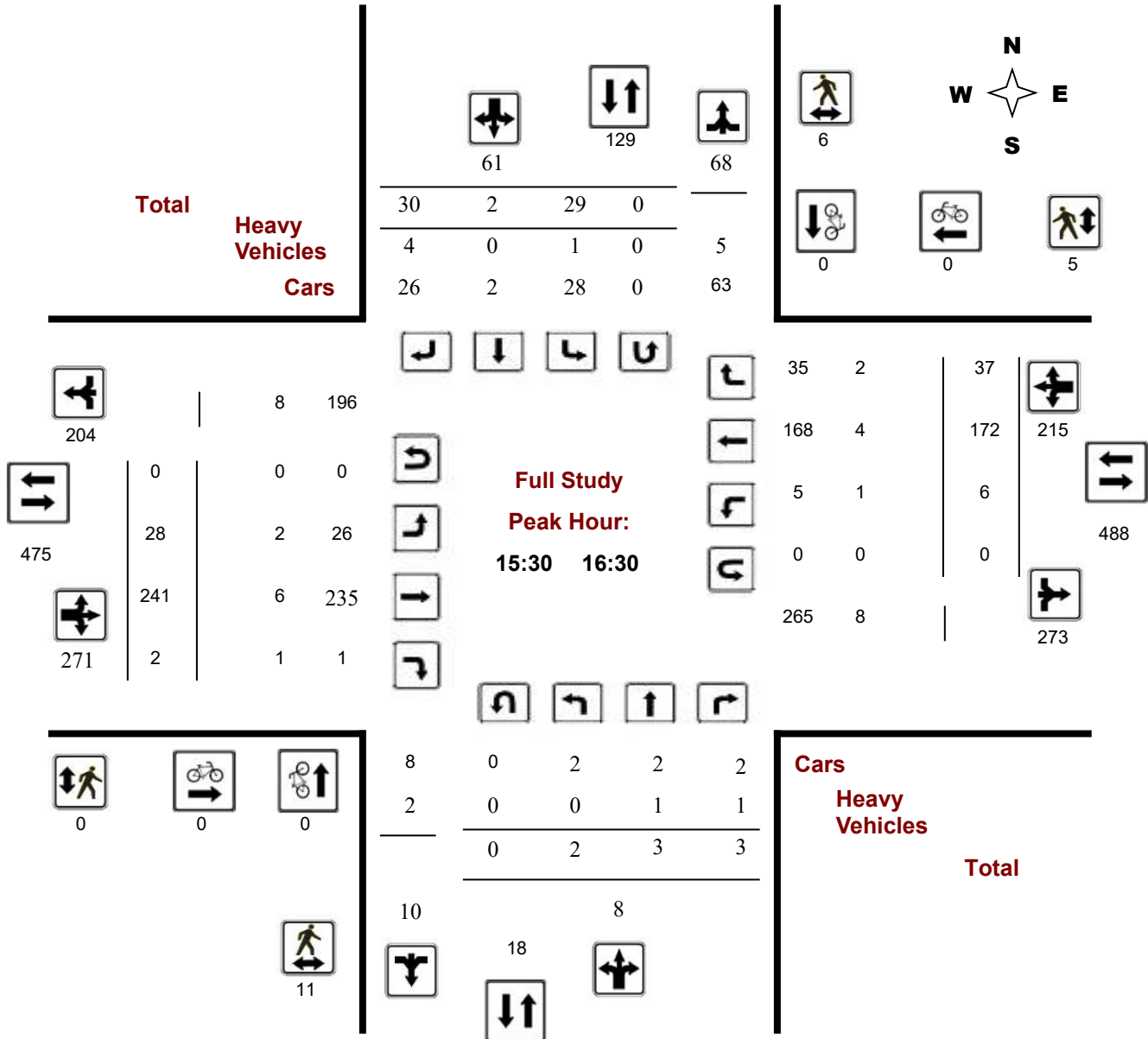
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study Peak Hour Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

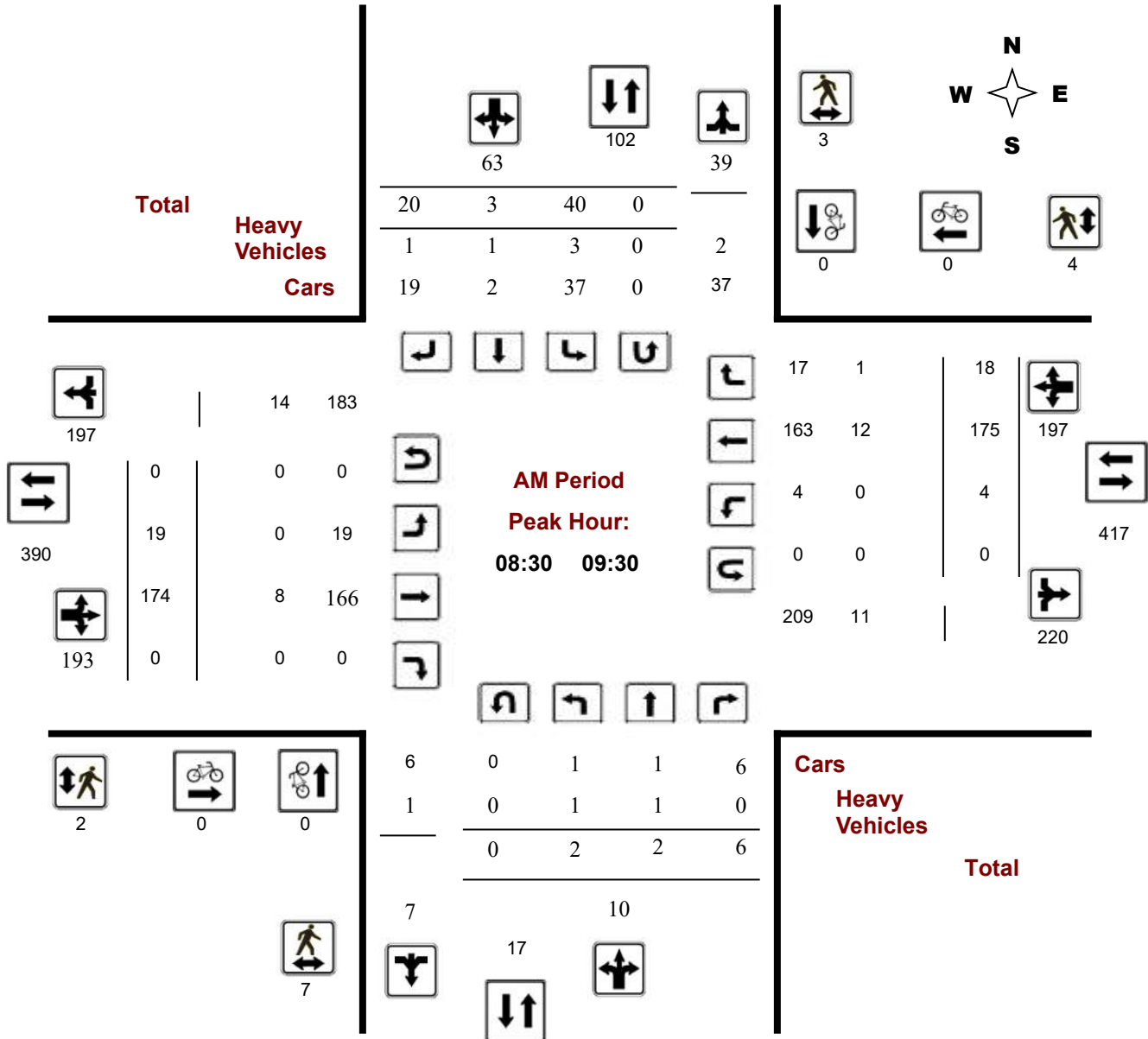
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### AM Period Peak Hour Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

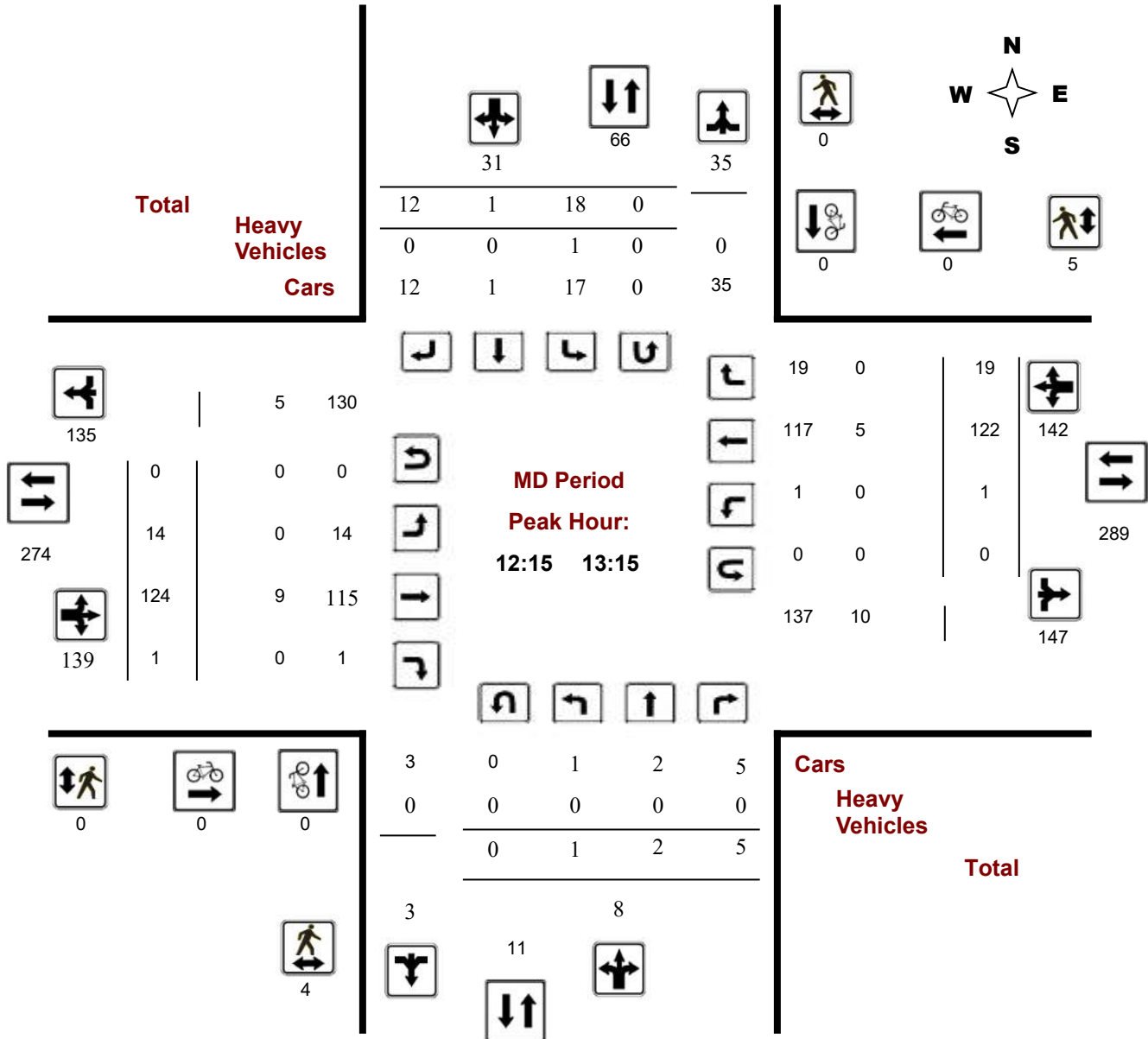
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### MD Period Peak Hour Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

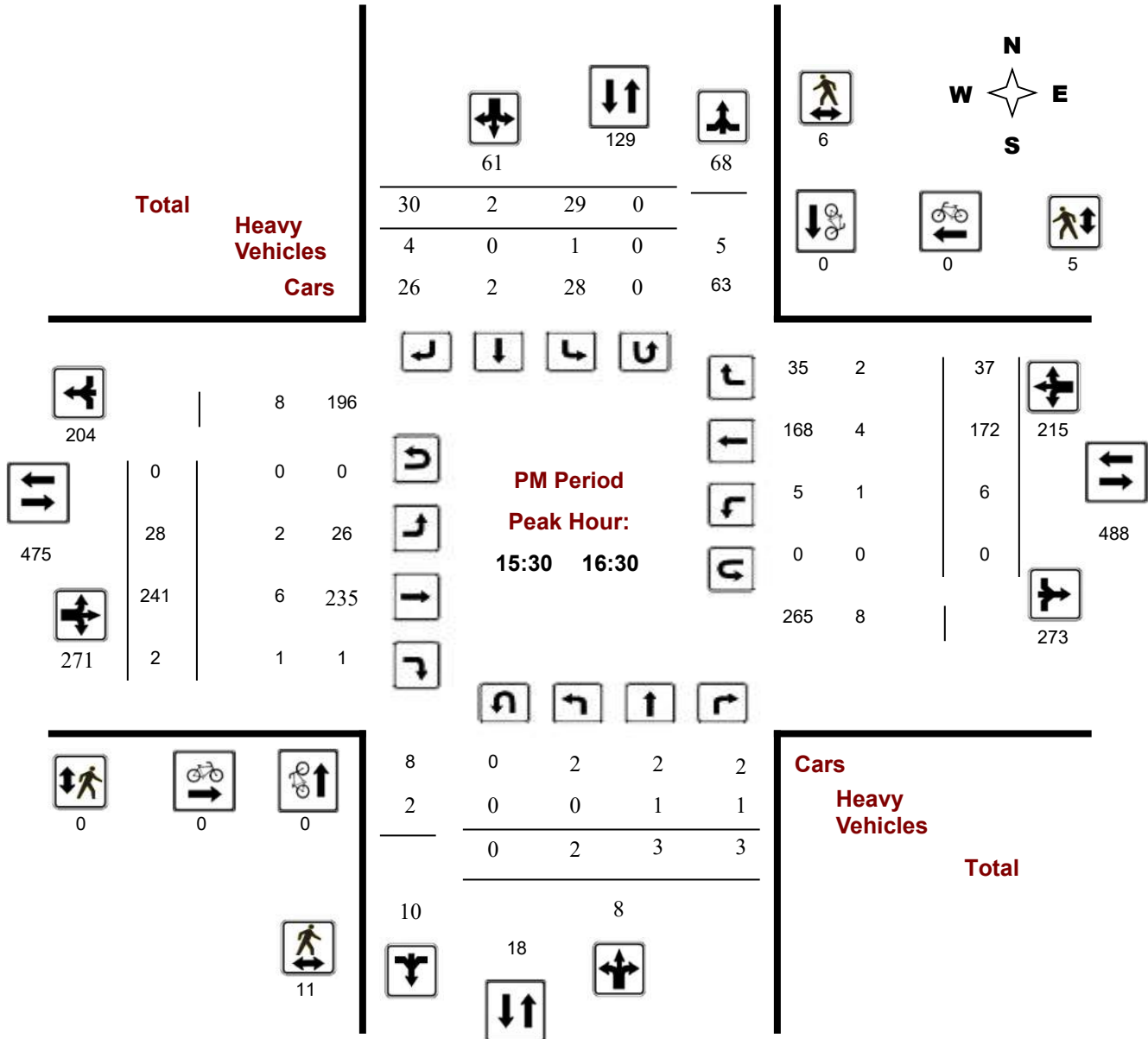
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### PM Period Peak Hour Diagram





# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Wednesday, January 08, 2025

**Total Observed U-Turns**

**AADT Factor**

Northbound: 0      Southbound: 0

1.00

Eastbound: 0      Westbound: 0

Period	Northbound				Southbound				STR TOT	Eastbound				Westbound				STR TOT	Grand Total
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT		LT	ST	RT	EB TOT	LT	ST	RT	WB TOT		
07:00 08:00	2	2	9	13	29	4	22	55	68	3	117	0	120	1	130	7	138	258	326
08:00 09:00	1	5	4	10	40	2	20	62	72	16	163	0	179	4	140	15	159	338	410
09:00 10:00	4	0	5	9	37	3	16	56	65	16	137	0	153	2	142	23	167	320	385
11:30 12:30	1	1	6	8	20	1	10	31	39	13	117	1	131	4	96	13	113	244	283
12:30 13:30	1	2	5	8	16	1	8	25	33	11	121	1	133	1	126	15	142	275	308
15:00 16:00	2	1	1	4	18	1	21	40	44	15	217	1	233	7	189	37	233	466	510
16:00 17:00	3	4	6	13	27	4	33	64	77	30	194	2	226	6	172	41	219	445	522
17:00 18:00	2	0	9	11	25	0	22	47	58	28	201	3	232	9	194	35	238	470	528
<b>Sub Total</b>	16	15	45	76	212	16	152	380	456	132	1267	8	1407	34	1189	186	1409	2816	3272
<b>U Turns</b>				0				0	0				0				0	0	0
<b>Total</b>	16	15	45	76	212	16	152	380	456	132	1267	8	1407	34	1189	186	1409	2816	3272
<b>EQ 12Hr</b>	22	21	63	106	295	22	211	528	634	183	1761	11	1956	47	1653	259	1959	3914	4548

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

1.39

<b>AVG 12Hr</b>	22	21	63	106	295	29	277	528	634	183	1761	11	1956	47	1653	259	1959	3914	4548
-----------------	----	----	----	-----	-----	----	-----	-----	-----	-----	------	----	------	----	------	-----	------	------	------

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

1.00

<b>AVG 24Hr</b>	29	28	83	139	386	38	363	692	831	240	2307	14	2562	62	2165	339	2566	5127	5958
-----------------	----	----	----	-----	-----	----	-----	-----	-----	-----	------	----	------	----	------	-----	------	------	------

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

1.31

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



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute Increments

Time Period	Northbound				Southbound					Eastbound				Westbound				Grand Total	
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT		STR TOT
07:00 07:15	1	0	2	3	5	0	2	7	10	1	25	0	26	0	26	2	28	54	64
07:15 07:30	0	0	2	2	7	1	4	12	14	0	27	0	27	0	28	3	31	58	72
07:30 07:45	0	2	3	5	10	3	9	22	27	1	32	0	33	0	38	1	39	72	99
07:45 08:00	1	0	2	3	7	0	7	14	17	1	33	0	34	1	38	1	40	74	91
08:00 08:15	0	2	0	2	8	0	3	11	13	5	51	0	56	0	24	4	28	84	97
08:15 08:30	1	1	1	3	9	1	5	15	18	2	29	0	31	1	28	3	32	63	81
08:30 08:45	0	1	3	4	9	0	6	15	19	5	36	0	41	1	37	6	44	85	104
08:45 09:00	0	1	0	1	14	1	6	21	22	4	47	0	51	2	51	2	55	106	128
09:00 09:15	0	0	3	3	15	1	4	20	23	5	54	0	59	0	49	3	52	111	134
09:15 09:30	2	0	0	2	2	1	4	7	9	5	37	0	42	1	38	7	46	88	97
09:30 09:45	0	0	1	1	11	0	5	16	17	4	27	0	31	1	29	8	38	69	86
09:45 10:00	2	0	1	3	9	1	3	13	16	2	19	0	21	0	26	5	31	52	68
11:30 11:45	0	0	1	1	7	0	1	8	9	3	22	0	25	2	17	1	20	45	54
11:45 12:00	1	1	2	4	3	1	2	6	10	2	29	0	31	2	32	4	38	69	79
12:00 12:15	0	0	0	0	4	0	2	6	6	4	37	1	42	0	24	1	25	67	73
12:15 12:30	0	0	3	3	6	0	5	11	14	4	29	0	33	0	23	7	30	63	77
12:30 12:45	0	1	0	1	1	0	3	4	5	2	31	0	33	0	40	4	44	77	82
12:45 13:00	1	1	2	4	5	0	2	7	11	2	37	0	39	1	33	3	37	76	87
13:00 13:15	0	0	0	0	6	1	2	9	9	6	27	1	34	0	26	5	31	65	74
13:15 13:30	0	0	3	3	4	0	1	5	8	1	26	0	27	0	27	3	30	57	65
15:00 15:15	1	0	0	1	0	1	2	3	4	2	42	0	44	1	44	5	50	94	98
15:15 15:30	0	0	0	0	4	0	7	11	11	0	37	0	37	1	57	12	70	107	118
15:30 15:45	1	0	0	1	6	0	6	12	13	5	71	0	76	2	55	9	66	142	155
15:45 16:00	0	1	1	2	8	0	6	14	16	8	67	1	76	3	33	11	47	123	139
16:00 16:15	1	2	1	4	9	1	6	16	20	10	41	0	51	0	42	8	50	101	121
16:15 16:30	0	0	1	1	6	1	12	19	20	5	62	1	68	1	42	9	52	120	140
16:30 16:45	0	2	2	4	4	0	6	10	14	7	52	1	60	5	41	14	60	120	134
16:45 17:00	2	0	2	4	8	2	9	19	23	8	39	0	47	0	47	10	57	104	127
17:00 17:15	0	0	3	3	4	0	4	8	11	9	45	0	54	2	45	5	52	106	117
17:15 17:30	1	0	3	4	2	0	2	4	8	6	45	3	54	2	54	7	63	117	125
17:30 17:45	0	0	3	3	12	0	10	22	25	4	73	0	77	2	53	17	72	149	174
17:45 18:00	1	0	0	1	7	0	6	13	14	9	38	0	47	3	42	6	51	98	112
<b>Total:</b>	<b>16</b>	<b>15</b>	<b>45</b>	<b>76</b>	<b>212</b>	<b>16</b>	<b>152</b>	<b>380</b>	<b>456</b>	<b>132</b>	<b>1267</b>	<b>8</b>	<b>1407</b>	<b>34</b>	<b>1189</b>	<b>186</b>	<b>1409</b>	<b>2816</b>	<b>3,272</b>

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cyclist volumes refer to Cyclist Volume report.



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study Cyclist Volume

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	1	1	1
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	1	0	1	1
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study Pedestrian Volume

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	1	0	1	0	0	0	1
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	1	10	11	0	5	5	16
07:45 08:00	1	0	1	0	0	0	1
08:00 08:15	0	1	1	1	0	1	2
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	2	2	2	0	2	4
08:45 09:00	6	1	7	0	4	4	11
09:00 09:15	1	0	1	0	0	0	1
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	1	0	1	0	1	1	2
12:15 12:30	2	0	2	0	2	2	4
12:30 12:45	1	0	1	0	1	1	2
12:45 13:00	1	0	1	0	1	1	2
13:00 13:15	0	0	0	0	1	1	1
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	1	3	4	0	2	2	6
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	4	0	4	0	0	0	4
15:45 16:00	4	0	4	0	0	0	4
16:00 16:15	2	4	6	0	3	3	9
16:15 16:30	1	2	3	0	2	2	5
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	2	0	2	0	0	0	2
17:00 17:15	2	1	3	1	0	1	4
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
<b>Total .....</b>	<b>31</b>	<b>24</b>	<b>55</b>	<b>4</b>	<b>22</b>	<b>26</b>	<b>81</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study Heavy Vehicles

Time Period	Northbound				Southbound				Eastbound				Westbound				Grand Total		
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT		W TOT	STR TOT
07:00 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	1	0	1	1	0	0	0	0	0	2	1	3	3	4
07:30 07:45	0	1	0	1	1	0	2	3	4	0	1	0	1	0	0	1	1	2	6
07:45 08:00	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	2
08:00 08:15	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3	3
08:15 08:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1
08:30 08:45	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3	1	4	7	7
08:45 09:00	0	1	0	1	2	1	1	4	5	0	2	0	2	0	4	0	4	6	11
09:00 09:15	0	0	0	0	1	0	0	1	1	0	2	0	2	0	1	0	1	3	4
09:15 09:30	1	0	0	1	0	0	0	0	1	0	1	0	1	0	4	0	4	5	6
09:30 09:45	0	0	0	0	0	0	1	1	1	1	0	0	1	0	1	0	1	2	3
09:45 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	2
11:30 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
11:45 12:00	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	2
12:00 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
12:15 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0	0	0	0	4	0	4	0	2	0	2	6	6
12:45 13:00	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3	0	3	6	6
13:00 13:15	0	0	0	0	1	0	0	1	1	0	2	0	2	0	0	0	0	2	3
13:15 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
15:00 15:15	1	0	0	1	0	1	1	2	3	0	1	0	1	0	2	0	2	3	6
15:15 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
15:30 15:45	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2	2
15:45 16:00	0	0	1	1	0	0	0	0	1	1	2	1	4	1	0	0	1	5	6
16:00 16:15	0	1	0	1	1	0	0	1	2	1	0	0	1	0	2	1	3	4	6
16:15 16:30	0	0	0	0	0	0	4	4	4	0	3	0	3	0	2	0	2	5	9
16:30 16:45	0	0	0	0	0	0	1	1	1	0	2	0	2	0	1	0	1	3	4
16:45 17:00	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1
17:00 17:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1
17:15 17:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	2
17:30 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total: None	2	3	1	6	7	3	10	20	26	3	35	1	39	1	35	6	42	81	107



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42387

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute U-Turn Total

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

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

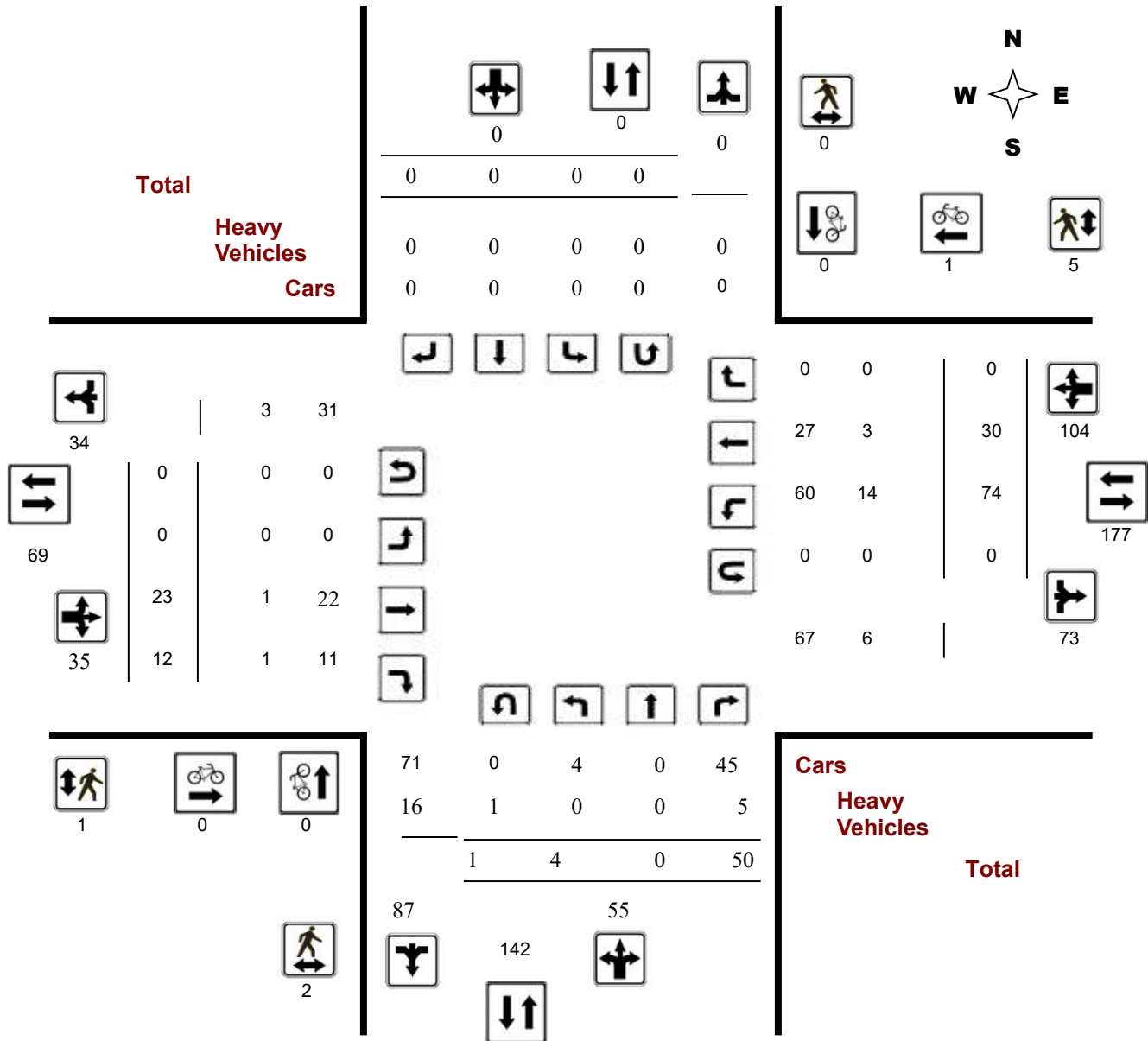
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study Diagram



## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

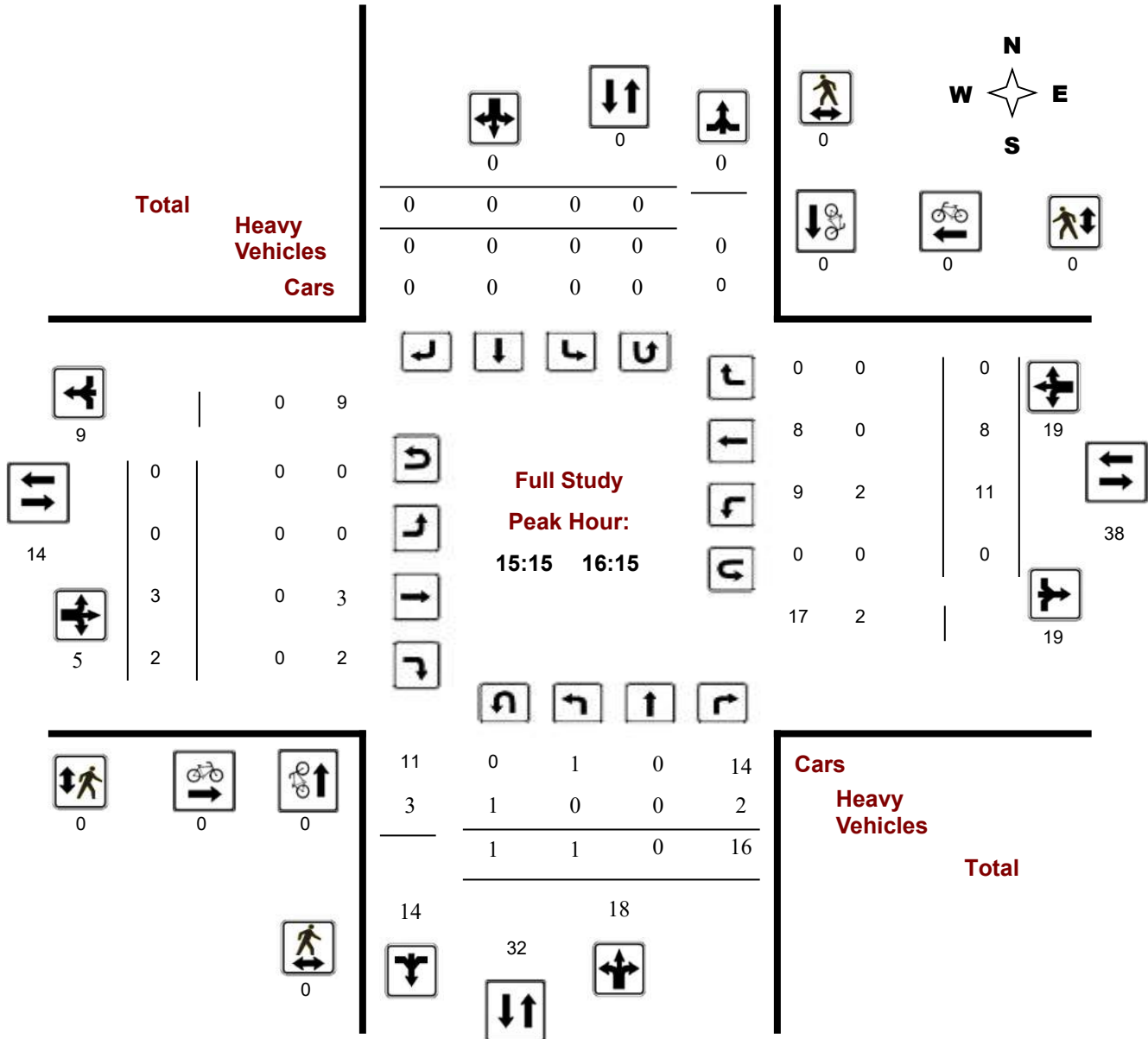
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study Peak Hour Diagram



## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

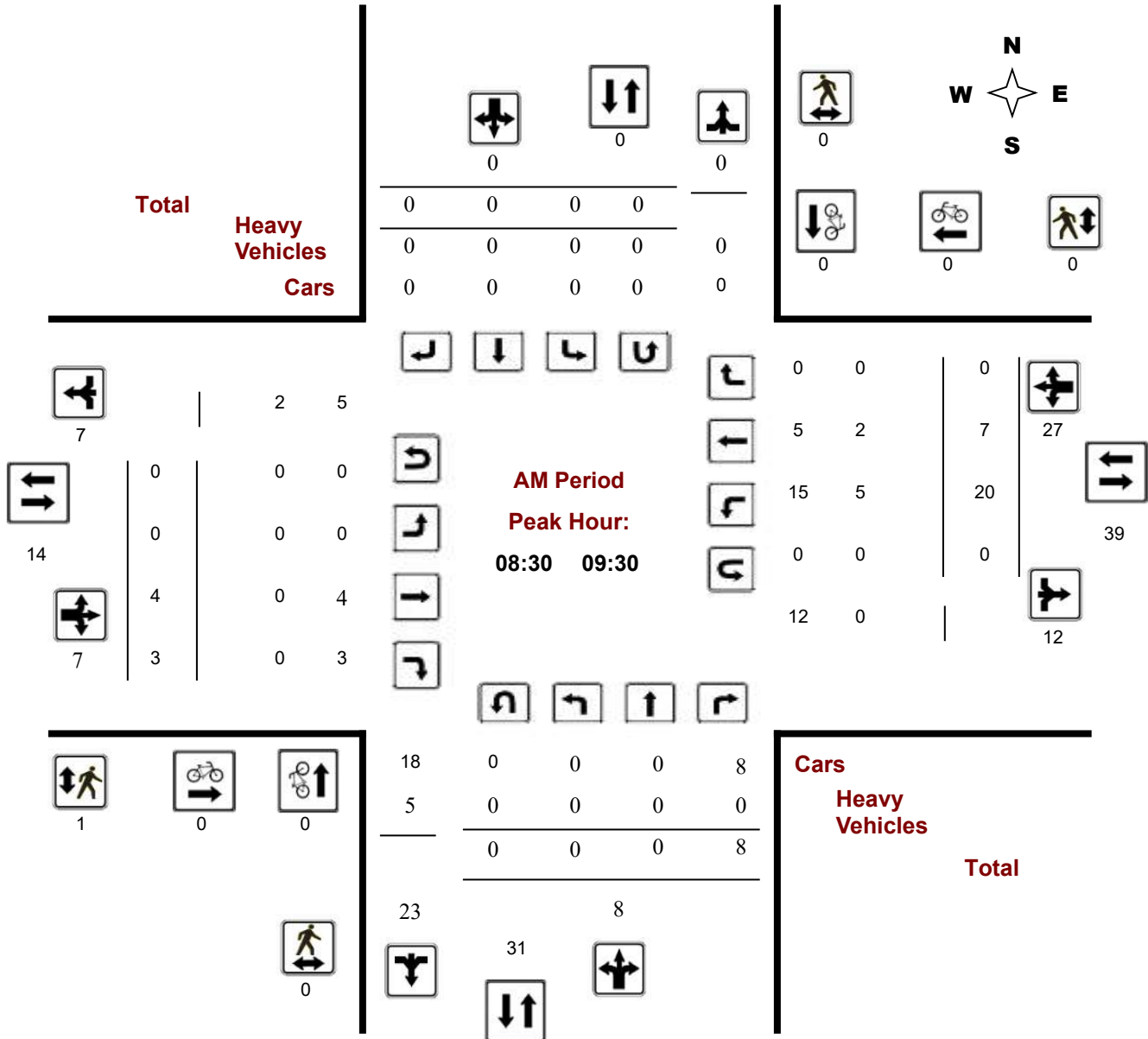
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### AM Period Peak Hour Diagram





## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

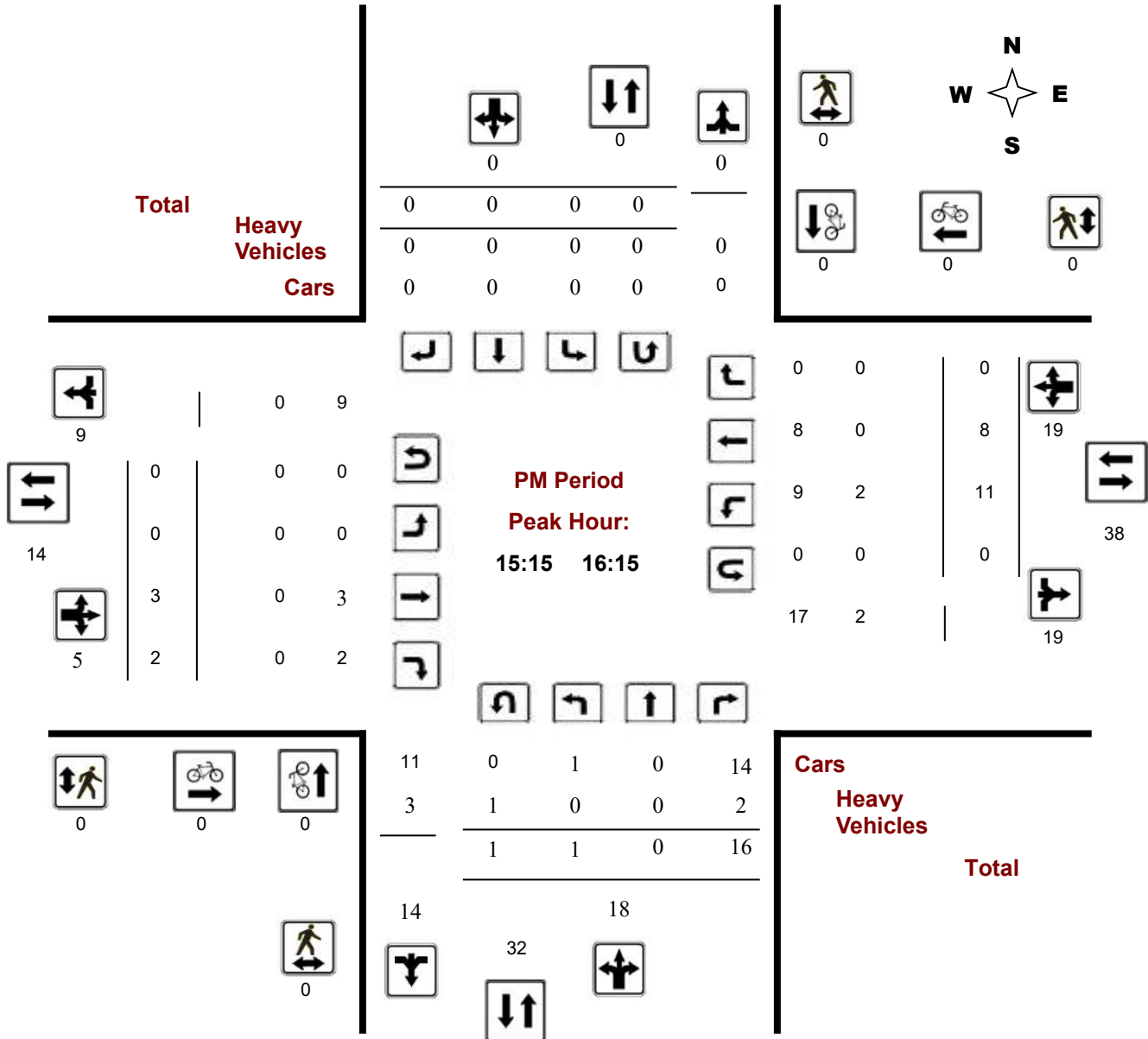
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### PM Period Peak Hour Diagram





# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Wednesday, January 08, 2025

**Total Observed U-Turns**

**AADT Factor**

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

1.00

Period	Northbound				Southbound				STR TOT	Eastbound				Westbound				STR TOT	Grand Total
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT		LT	ST	RT	EB TOT	LT	ST	RT	WB TOT		
07:00 08:00	0	0	3	3	0	0	0	0	3	0	3	3	6	10	0	0	10	16	19
08:00 09:00	0	0	7	7	0	0	0	0	7	0	2	3	5	10	5	0	15	20	27
09:00 10:00	0	0	7	7	0	0	0	0	7	0	3	0	3	13	5	0	18	21	28
11:30 12:30	0	0	3	3	0	0	0	0	3	0	4	0	4	6	4	0	10	14	17
12:30 13:30	0	0	5	5	0	0	0	0	5	0	2	2	4	2	2	0	4	8	13
15:00 16:00	1	0	11	12	0	0	0	0	12	0	4	1	5	7	8	0	15	20	32
16:00 17:00	1	0	11	12	0	0	0	0	12	0	1	3	4	17	4	0	21	25	37
17:00 18:00	2	0	3	5	0	0	0	0	5	0	4	0	4	9	2	0	11	15	20
<b>Sub Total</b>	4	0	50	54	0	0	0	0	54	0	23	12	35	74	30	0	104	139	193
<b>U Turns</b>				1				0	1				0				0	0	1
<b>Total</b>	4	0	50	55	0	0	0	0	55	0	23	12	35	74	30	0	104	139	194

**EQ 12Hr**      6      0      70      76      0      0      0      0      76      0      32      17      49      103      42      0      145      193      270

Note: These values are calculated by multiplying the totals by the appropriate expansion factor.      **1.39**

**AVG 12Hr**      6      0      70      76      0      0      0      0      76      0      32      17      49      103      42      0      145      193      270

Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.      **1.00**

**AVG 24Hr**      8      0      92      100      0      0      0      0      100      0      42      22      64      135      55      0      190      253      354

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.      **1.31**

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



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute Increments

Time Period	Northbound				Southbound					Eastbound				Westbound				Grand Total		
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT		STR TOT	
07:00	07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15	07:30	0	0	0	0	0	0	0	0	0	0	3	1	4	2	0	0	2	6	
07:30	07:45	0	0	2	2	0	0	0	0	2	0	0	2	2	3	0	0	3	5	
07:45	08:00	0	0	1	1	0	0	0	0	1	0	0	0	0	5	0	0	5	5	
08:00	08:15	0	0	3	3	0	0	0	0	3	0	0	0	0	1	0	0	1	1	
08:15	08:30	0	0	1	1	0	0	0	0	1	0	1	0	1	1	2	0	3	4	
08:30	08:45	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	3	4	4	
08:45	09:00	0	0	3	3	0	0	0	0	3	0	1	2	3	6	2	0	8	11	
09:00	09:15	0	0	2	2	0	0	0	0	2	0	1	0	1	8	2	0	10	11	
09:15	09:30	0	0	3	3	0	0	0	0	3	0	2	0	2	4	2	0	6	8	
09:30	09:45	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	1	1	1	
09:45	10:00	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	1	1	
11:30	11:45	0	0	2	2	0	0	0	0	2	0	2	0	2	0	0	0	0	2	
11:45	12:00	0	0	0	0	0	0	0	0	0	0	2	0	2	1	2	0	3	5	
12:00	12:15	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	1	1	1	
12:15	12:30	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	6	6	6	
12:30	12:45	0	0	1	1	0	0	0	0	1	0	1	0	1	1	1	0	2	3	
12:45	13:00	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	1	1	1	
13:00	13:15	0	0	3	3	0	0	0	0	3	0	1	1	2	1	0	0	1	3	
13:15	13:30	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	
15:00	15:15	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2	
15:15	15:30	0	0	2	2	0	0	0	0	2	0	1	1	2	3	5	0	8	10	
15:30	15:45	0	0	4	4	0	0	0	0	4	0	0	0	0	1	1	0	2	2	
15:45	16:00	1	0	5	6	0	0	0	0	6	0	2	0	2	2	2	0	4	6	
16:00	16:15	0	0	5	6	0	0	0	0	6	0	0	1	1	5	0	0	5	6	
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	7	7	7	
16:30	16:45	1	0	4	5	0	0	0	0	5	0	0	1	1	2	1	0	3	4	
16:45	17:00	0	0	2	2	0	0	0	0	2	0	1	1	2	4	2	0	6	8	
17:00	17:15	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
17:15	17:30	0	0	2	2	0	0	0	0	2	0	2	0	2	0	1	0	1	3	
17:30	17:45	2	0	0	2	0	0	0	0	2	0	1	0	1	4	0	0	4	5	
17:45	18:00	0	0	0	0	0	0	0	0	0	0	1	0	1	5	1	0	6	7	
<b>Total:</b>		<b>4</b>	<b>0</b>	<b>50</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>23</b>	<b>12</b>	<b>35</b>	<b>74</b>	<b>30</b>	<b>0</b>	<b>104</b>	<b>139</b>	<b>194</b>

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cyclist volumes refer to Cyclist Volume report.



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study Cyclist Volume

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	1	1	1
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	1



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study Pedestrian Volume

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	1	1	1
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	1	0	1	1
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	1	1	1
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	2	0	2	0	3	3	5
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
<b>Total .....</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>8</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study Heavy Vehicles

Time Period	Northbound				Southbound				Eastbound				Westbound				Grand Total		
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT		W TOT	STR TOT
07:00 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	1	3	3
07:30 07:45	0	0	2	2	0	0	0	0	2	0	0	0	0	2	0	0	2	2	4
07:45 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
08:45 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	5	5	5
09:00 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
09:15 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 13:00	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
13:00 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
15:15 15:30	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
15:30 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 16:00	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
16:00 16:15	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	0	2	2	3
16:15 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2
16:30 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	2
17:00 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total: None	0	0	5	6	0	0	0	0	6	0	1	1	2	14	3	0	17	19	25



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### CRANESBILL RD @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42389

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute U-Turn Total

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

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

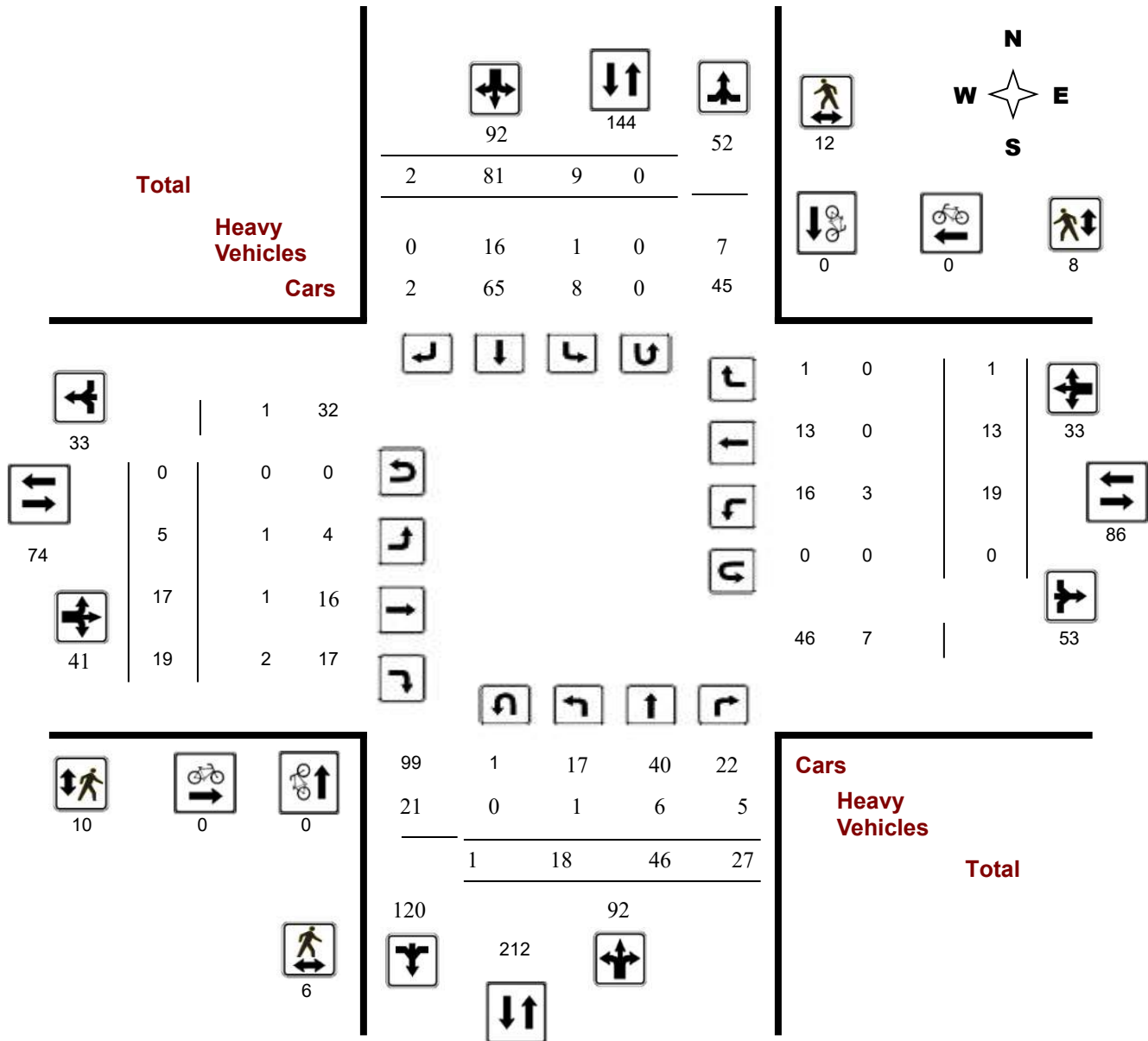
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study Diagram



## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

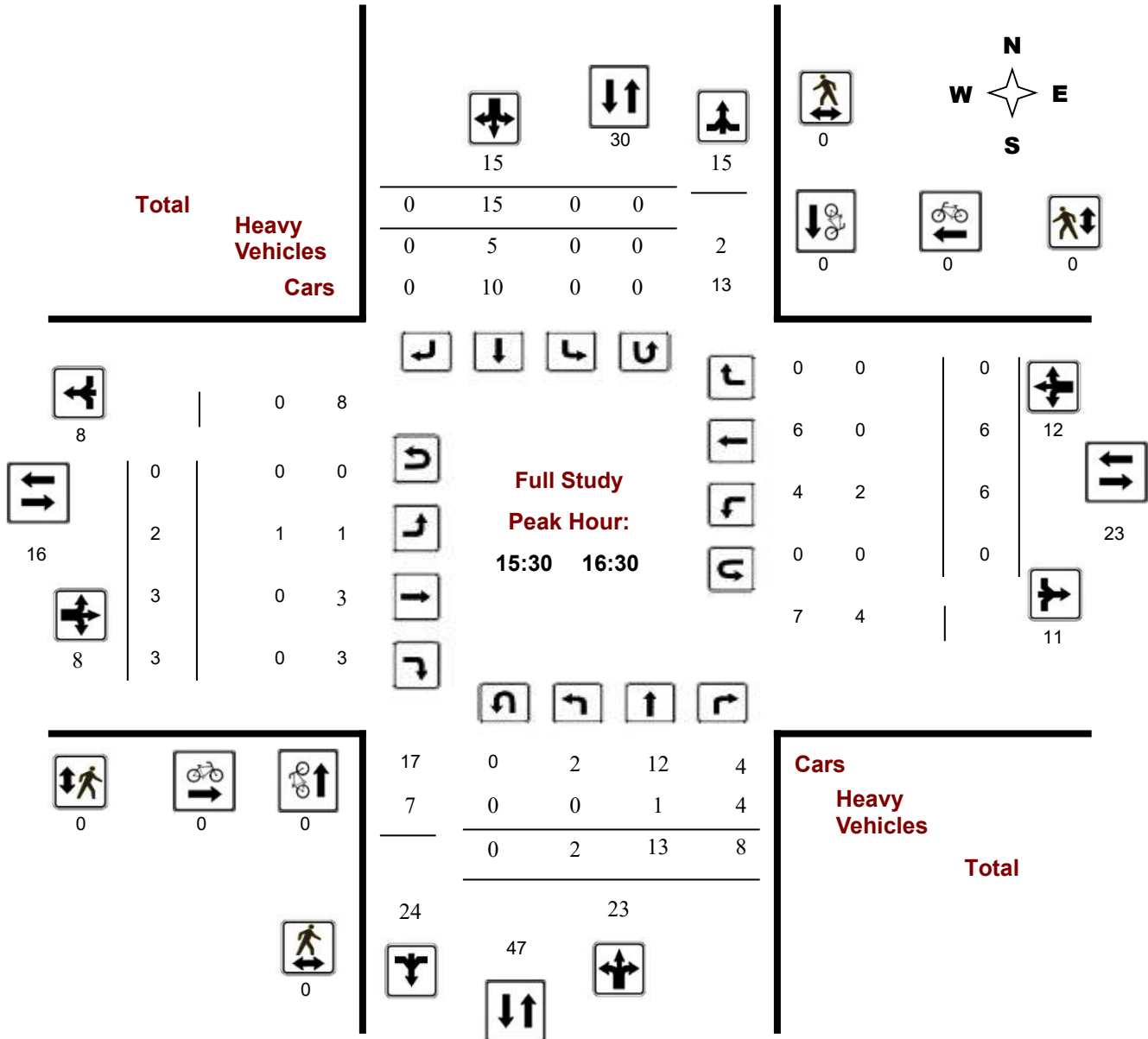
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study Peak Hour Diagram



## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

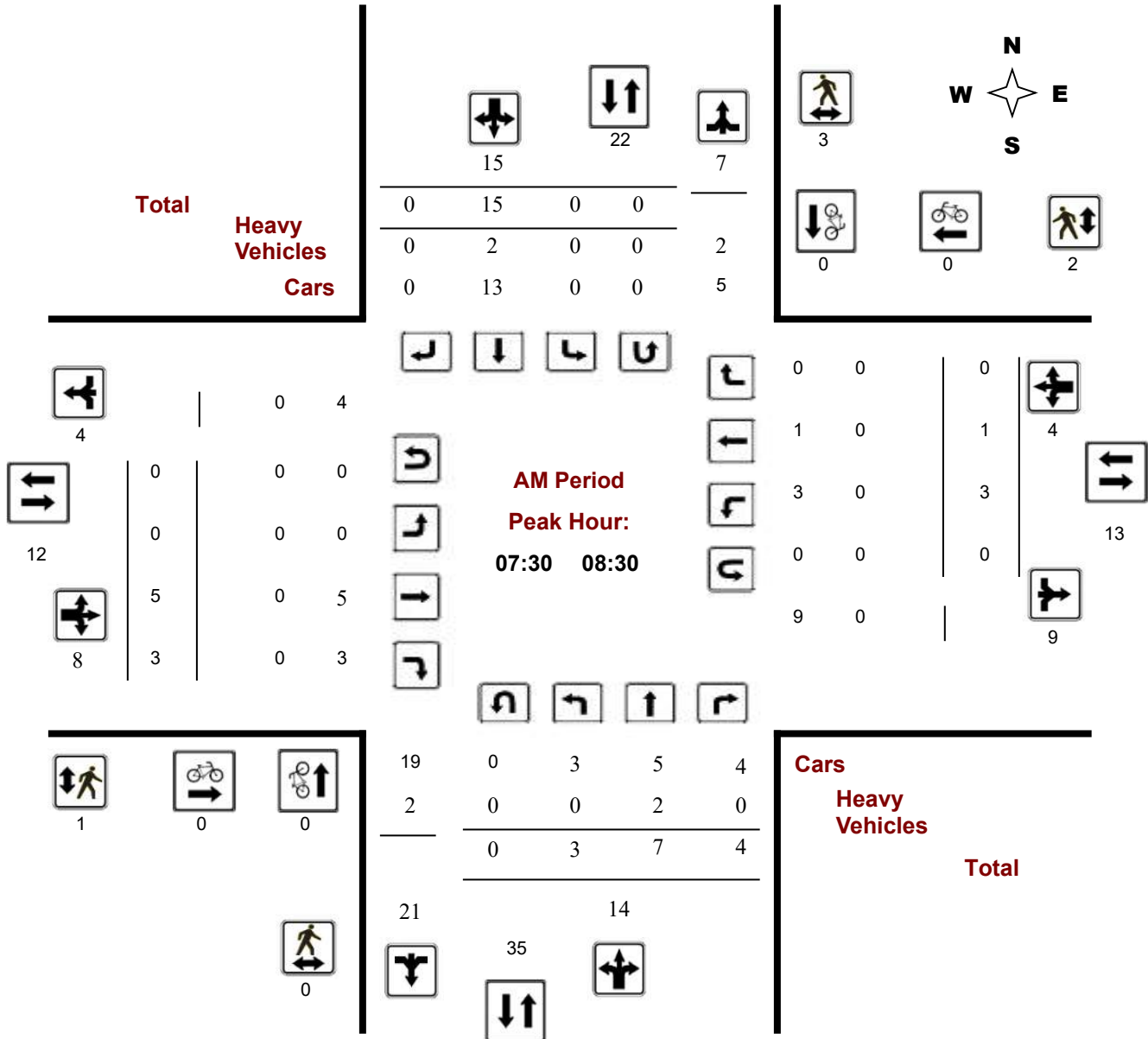
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### AM Period Peak Hour Diagram



## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

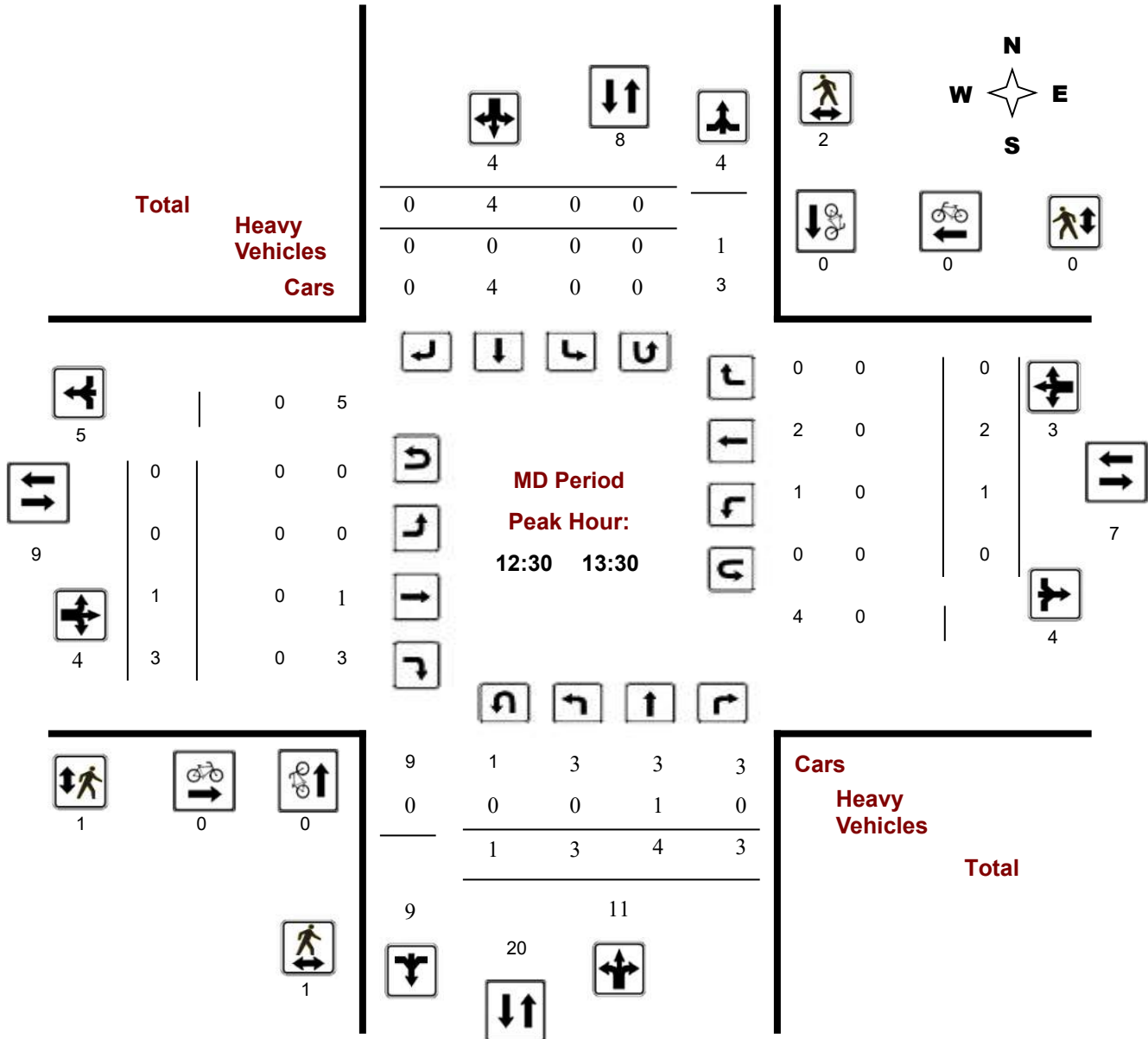
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### MD Period Peak Hour Diagram



## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

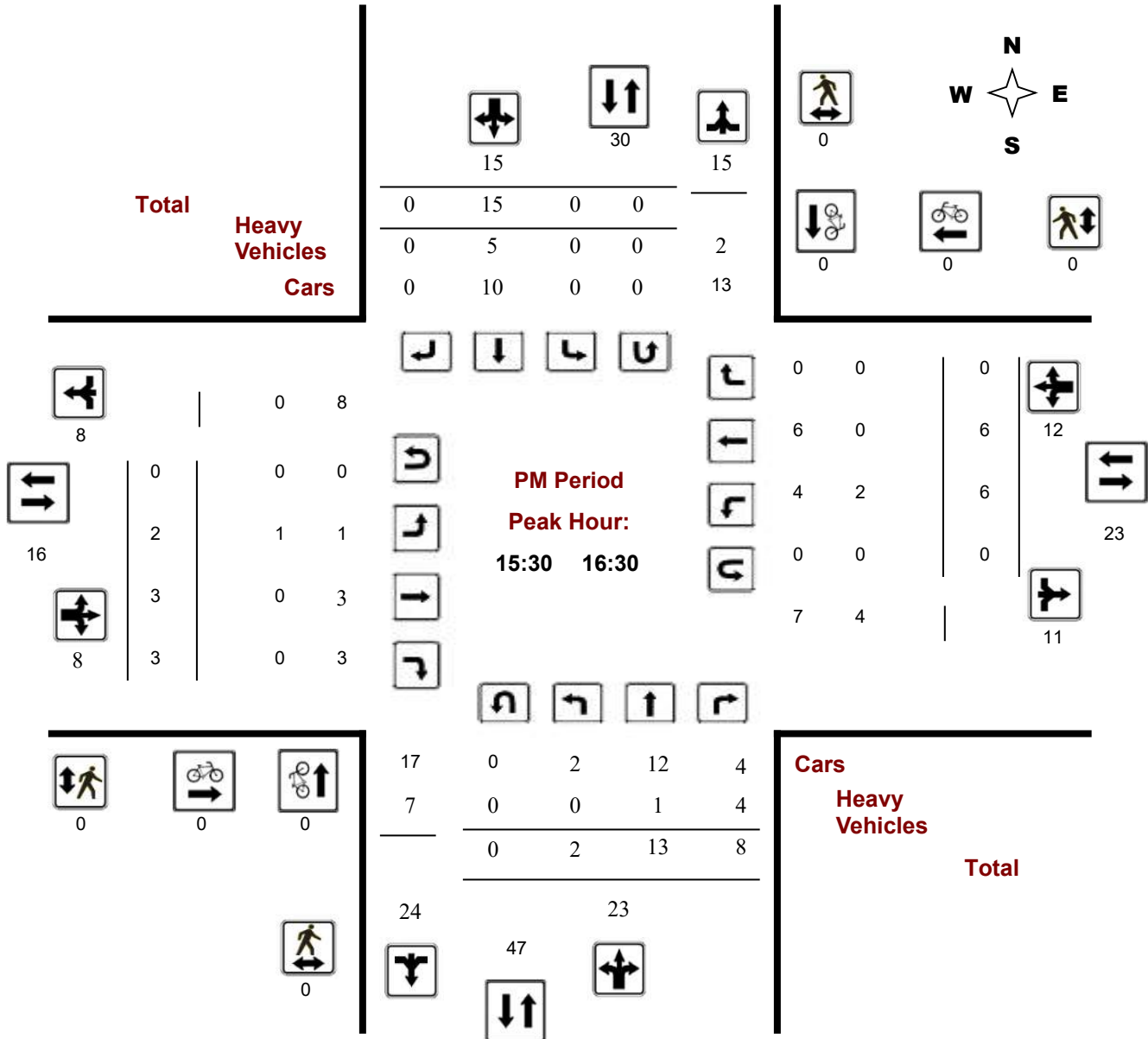
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### PM Period Peak Hour Diagram





# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Wednesday, January 08, 2025

**Total Observed U-Turns**

**AADT Factor**

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

1.00

Period	Northbound				Southbound				STR TOT	Eastbound				Westbound				STR TOT	Grand Total
	LT	ST	RT	NB TOT	LT	ST	RT	SB TOT		LT	ST	RT	EB TOT	LT	ST	RT	WB TOT		
07:00 08:00	1	2	4	7	0	13	0	13	20	0	5	3	8	4	2	0	6	14	34
08:00 09:00	4	5	3	12	2	15	0	17	29	0	2	2	4	2	0	0	2	6	35
09:00 10:00	0	7	2	9	3	13	0	16	25	1	4	2	7	4	0	0	4	11	36
11:30 12:30	0	4	2	6	0	5	1	6	12	0	1	0	1	0	0	0	0	1	13
12:30 13:30	3	4	3	10	0	4	0	4	14	0	1	3	4	1	2	0	3	7	21
15:00 16:00	1	10	4	15	0	8	0	8	23	1	3	1	5	4	5	0	9	14	37
16:00 17:00	6	9	5	20	2	17	0	19	39	2	1	5	8	3	4	1	8	16	55
17:00 18:00	3	5	4	12	2	6	1	9	21	1	0	3	4	1	0	0	1	5	26
<b>Sub Total</b>	18	46	27	91	9	81	2	92	183	5	17	19	41	19	13	1	33	74	257
<b>U Turns</b>				1				0	1				0				0	0	1
<b>Total</b>	18	46	27	92	9	81	2	92	184	5	17	19	41	19	13	1	33	74	258

**EQ 12Hr** 25 64 38 **128** 13 113 3 **128** **256** 7 24 26 **57** 26 18 1 **46** **103** **359**  
 Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

**AVG 12Hr** 25 64 38 **128** 13 147 4 **128** **256** 7 24 26 **57** 26 18 1 **46** **103** **359**  
 Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1.00**

**AVG 24Hr** 33 84 50 **168** 17 193 5 **168** **335** 9 31 34 **75** 34 24 1 **60** **135** **470**  
 Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

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



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute Increments

Time Period	Northbound				Southbound				Eastbound				Westbound				Grand Total			
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT		W TOT	STR TOT	
07:00	07:15	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2	2	
07:15	07:30	0	0	2	2	0	3	0	3	5	0	0	1	1	1	0	2	3	8	
07:30	07:45	0	2	2	4	0	5	0	5	9	0	3	1	4	1	1	0	2	6	15
07:45	08:00	1	0	0	1	0	5	0	5	6	0	1	1	2	1	0	0	1	3	9
08:00	08:15	1	4	1	6	0	1	0	1	7	0	0	0	0	1	0	0	1	1	8
08:15	08:30	1	1	1	3	0	4	0	4	7	0	1	1	2	0	0	0	0	2	9
08:30	08:45	2	0	0	2	0	3	0	3	5	0	1	0	1	0	0	0	0	1	6
08:45	09:00	0	0	1	1	2	7	0	9	10	0	0	1	1	1	0	0	1	2	12
09:00	09:15	0	2	1	3	0	7	0	7	10	1	1	0	2	1	0	0	1	3	13
09:15	09:30	0	2	0	2	1	3	0	4	6	0	0	0	0	1	0	0	1	1	7
09:30	09:45	0	2	0	2	0	1	0	1	3	0	3	2	5	0	0	0	0	5	8
09:45	10:00	0	1	1	2	2	2	0	4	6	0	0	0	0	2	0	0	2	2	8
11:30	11:45	0	2	1	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
11:45	12:00	0	1	0	1	0	2	0	2	3	0	1	0	1	0	0	0	0	1	4
12:00	12:15	0	1	1	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
12:15	12:30	0	0	0	0	0	3	1	4	4	0	0	0	0	0	0	0	0	0	4
12:30	12:45	0	1	1	2	0	1	0	1	3	0	0	1	1	0	1	0	1	2	5
12:45	13:00	0	1	1	3	0	0	0	0	3	0	0	0	0	1	1	0	2	2	5
13:00	13:15	2	2	1	5	0	2	0	2	7	0	1	0	1	0	0	0	0	1	8
13:15	13:30	1	0	0	1	0	1	0	1	2	0	0	2	2	0	0	0	0	2	4
15:00	15:15	0	0	0	0	0	1	0	1	1	0	1	0	1	0	0	0	0	1	2
15:15	15:30	0	2	0	2	0	3	0	3	5	0	0	0	0	1	1	0	2	2	7
15:30	15:45	1	3	3	7	0	2	0	2	9	1	1	1	3	1	2	0	3	6	15
15:45	16:00	0	5	1	6	0	2	0	2	8	0	1	0	1	2	2	0	4	5	13
16:00	16:15	1	5	4	10	0	7	0	7	17	1	0	1	2	0	1	0	1	3	20
16:15	16:30	0	0	0	0	0	4	0	4	4	0	1	1	2	3	1	0	4	6	10
16:30	16:45	2	4	0	6	2	0	0	2	8	0	0	1	1	0	1	1	2	3	11
16:45	17:00	3	0	1	4	0	6	0	6	10	1	0	2	3	0	1	0	1	4	14
17:00	17:15	1	0	3	4	0	0	0	0	4	0	0	1	1	0	0	0	0	1	5
17:15	17:30	1	3	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
17:30	17:45	1	1	1	3	1	3	1	5	8	1	0	2	3	1	0	0	1	4	12
17:45	18:00	0	1	0	1	1	3	0	4	5	0	0	0	0	0	0	0	0	0	5
<b>Total:</b>		18	46	27	92	9	81	2	92	184	5	17	19	41	19	13	1	33	74	258

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cyclist volumes refer to Cyclist Volume report.



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study Cyclist Volume

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study Pedestrian Volume

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	0	0	0	0
07:15 07:30	0	3	3	0	0	0	3
07:30 07:45	0	3	3	0	1	1	4
07:45 08:00	0	0	0	1	0	1	1
08:00 08:15	0	0	0	0	1	1	1
08:15 08:30	0	0	0	0	0	0	0
08:30 08:45	0	1	1	0	0	0	1
08:45 09:00	0	0	0	0	1	1	1
09:00 09:15	4	3	7	7	0	7	14
09:15 09:30	1	0	1	1	0	1	2
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	1	1	1
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	1	0	1	1	0	1	2
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	2	2	0	0	0	2
15:00 15:15	0	0	0	0	1	1	1
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	2	2	2
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	1	1	1
<b>Total .....</b>	<b>6</b>	<b>12</b>	<b>18</b>	<b>10</b>	<b>8</b>	<b>18</b>	<b>36</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study Heavy Vehicles

Time Period	Northbound				Southbound				Eastbound				Westbound				Grand Total		
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT		W TOT	STR TOT
07:00 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 07:30	0	0	1	1	0	2	0	2	3	0	0	0	0	0	0	0	0	0	3
07:30 07:45	0	2	0	2	0	2	0	2	4	0	0	0	0	0	0	0	0	0	4
07:45 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 08:45	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1
08:45 09:00	0	0	0	0	1	3	0	4	4	0	0	0	0	1	0	0	1	1	5
09:00 09:15	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	1
09:15 09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 09:45	0	1	0	1	0	1	0	1	2	0	0	0	0	0	0	0	0	0	2
09:45 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 13:00	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
13:00 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	1
15:15 15:30	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
15:30 15:45	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
15:45 16:00	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
16:00 16:15	0	0	3	3	0	3	0	3	6	1	0	0	1	0	0	0	0	1	7
16:15 16:30	0	0	0	0	0	2	0	2	2	0	0	0	0	2	0	0	2	2	4
16:30 16:45	1	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	1	2
16:45 17:00	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	0	0	1	2
17:00 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total: None	1	6	5	12	1	16	0	17	29	1	1	2	4	3	0	0	3	7	36



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### HONEYLOCUST AVE @ TRIANGLE ST

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42388

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute U-Turn Total

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

5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

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: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2018-11-27 7:00AM	23	75	3	0	101	0	16	3	14	0	33	0	11	140	7	0	158	2	3	1	37	0	41	0	333
7:15AM	27	78	3	0	108	0	15	3	12	0	30	0	12	160	8	0	180	0	4	3	35	0	42	0	360
7:30AM	25	95	4	0	124	0	16	0	11	0	27	0	21	168	4	0	193	0	9	2	35	0	46	0	390
7:45AM	32	98	8	0	138	2	17	4	12	0	33	0	29	190	11	0	230	0	4	3	41	0	48	0	449
Hourly Total	107	346	18	0	471	2	64	10	49	0	123	0	73	658	30	0	761	2	20	9	148	0	177	0	1532
8:00AM	18	128	8	0	154	0	20	2	16	0	38	0	23	176	9	0	208	0	8	3	38	0	49	0	449
8:15AM	16	100	7	0	123	1	19	4	19	0	42	0	26	194	9	0	229	0	14	10	37	0	61	0	455
8:30AM	24	118	7	0	149	0	27	4	20	0	51	1	43	190	7	0	240	1	4	7	20	0	31	1	471
8:45AM	21	109	6	0	136	2	19	5	16	0	40	0	25	181	10	0	216	1	17	7	40	0	64	2	456
Hourly Total	79	455	28	0	562	3	85	15	71	0	171	1	117	741	35	0	893	2	43	27	135	0	205	3	1831
9:00AM	17	99	7	0	123	0	12	4	15	0	31	0	22	178	12	0	212	0	12	4	38	0	54	0	420
9:15AM	22	97	8	0	127	0	17	7	5	0	29	0	12	156	12	0	180	0	11	4	34	0	49	0	385
9:30AM	16	88	3	0	107	0	16	2	9	0	27	0	11	124	8	0	143	0	10	4	29	0	43	0	320
9:45AM	23	76	7	0	106	0	12	5	15	0	32	0	9	113	11	0	133	0	7	3	23	0	33	0	304
Hourly Total	78	360	25	0	463	0	57	18	44	0	119	0	54	571	43	0	668	0	40	15	124	0	179	0	1429
11:30AM	11	117	7	0	135	0	12	4	11	0	27	0	6	132	12	0	150	1	6	2	22	0	30	0	342
11:45AM	19	124	9	0	152	0	8	3	12	0	23	0	8	125	18	0	151	0	14	2	28	0	44	0	370
Hourly Total	30	241	16	0	287	0	20	7	23	0	50	0	14	257	30	0	301	1	20	4	50	0	74	0	712
12:00PM	18	129	11	0	158	0	15	4	14	0	33	0	8	143	4	0	155	0	17	3	31	0	51	0	397
12:15PM	28	123	19	0	170	0	12	4	7	0	23	0	13	107	9	0	129	0	10	7	31	0	48	0	370
12:30PM	23	116	19	0	158	0	10	4	17	0	31	0	12	111	3	0	126	0	11	3	37	0	51	0	366
12:45PM	30	127	10	0	167	0	11	2	12	0	25	0	12	122	17	0	151	1	5	3	19	0	27	1	370
Hourly Total	99	495	59	0	653	0	48	14	50	0	112	0	45	483	33	0	561	1	43	16	118	0	177	1	1503
1:00PM	21	124	7	0	152	0	9	1	18	0	28	0	7	114	10	0	131	0	8	2	22	0	32	0	343
1:15PM	18	111	9	0	138	0	15	2	12	0	29	0	10	88	5	0	103	0	6	3	24	0	33	0	303
Hourly Total	39	235	16	0	290	0	24	3	30	0	57	0	17	202	15	0	234	0	14	5	46	0	65	0	646
3:00PM	27	166	15	0	208	1	18	9	13	0	40	0	28	120	8	0	156	0	16	6	18	0	40	0	444
3:15PM	31	161	16	0	208	1	15	11	35	0	61	0	27	112	11	0	150	0	10	4	21	0	35	0	454
3:30PM	37	209	19	0	265	0	14	3	23	0	40	0	22	131	5	0	158	0	16	16	37	0	69	0	532
3:45PM	34	203	13	0	250	1	22	7	20	0	49	0	22	164	9	0	195	1	13	7	28	0	48	1	542
Hourly Total	129	739	63	0	931	3	69	30	91	0	190	0	99	527	33	0	659	1	55	33	104	0	192	1	1972
4:00PM	31	190	23	0	244	0	15	9	30	0	54	1	22	161	9	0	192	0	11	9	22	0	42	0	532
4:15PM	25	187	26	0	238	0	10	9	21	0	40	0	31	172	10	0	213	3	14	8	19	0	41	2	532
4:30PM	30	173	21	0	224	1	18	5	29	0	52	1	27	152	4	0	183	0	23	9	39	0	71	0	530
4:45PM	26	190	30	0	246	0	15	7	22	0	44	0	26	181	7	0	214	1	9	7	22	0	38	1	542
Hourly Total	112	740	100	0	952	1	58	30	102	0	190	2	106	666	30	0	802	4	57	33	102	0	192	3	2136
5:00PM	32	239	15	0	286	0	13	10	23	0	46	0	24	157	3	0	184	0	4	7	33	0	44	0	560
5:15PM	31	213	19	0	263	0	12	4	20	0	36	0	20	127	3	0	150	0	10	3	17	0	30	0	479
5:30PM	31	217	21	0	269	1	5	13	13	0	31	0	16	139	5	0	160	0	3	4	15	0	22	2	482
5:45PM	33	186	22	0	241	0	12	7	26	0	45	0	23	151	4	0	178	0	6	3	13	0	22	0	486
Hourly Total	127	855	77	0	1059	1	42	34	82	0	158	0	83	574	15	0	672	0	23	17	78	0	118	2	2007
<b>Total</b>	<b>800</b>	<b>4466</b>	<b>402</b>	<b>0</b>	<b>5668</b>	<b>10</b>	<b>467</b>	<b>161</b>	<b>542</b>	<b>0</b>	<b>1170</b>	<b>3</b>	<b>608</b>	<b>4679</b>	<b>264</b>	<b>0</b>	<b>5551</b>	<b>11</b>	<b>315</b>	<b>159</b>	<b>905</b>	<b>0</b>	<b>1379</b>	<b>10</b>	<b>13768</b>
<b>% Approach</b>	14.1%	78.8%	7.1%	0%	-	-	39.9%	13.8%	46.3%	0%	-	-	11.0%	84.3%	4.8%	0%	-	-	22.8%	11.5%	65.6%	0%	-	-	-
<b>% Total</b>	5.8%	32.4%	2.9%	0%	<b>41.2%</b>	-	3.4%	1.2%	3.9%	0%	<b>8.5%</b>	-	4.4%	34.0%	1.9%	0%	<b>40.3%</b>	-	2.3%	1.2%	6.6%	0%	<b>10.0%</b>	-	-
<b>Lights and Motorcycles</b>	759	4290	392	0	<b>5441</b>	-	458	157	522	0	<b>1137</b>	-	592	4530	177	0	<b>5299</b>	-	226	152	863	0	<b>1241</b>	-	13118
<b>% Lights and Motorcycles</b>	94.9%	96.1%	97.5%	0%	<b>96.0%</b>	-	98.1%	97.5%	96.3%	0%	<b>97.2%</b>	-	97.4%	96.8%	67.0%	0%	<b>95.5%</b>	-	71.7%	95.6%	95.4%	0%	<b>90.0%</b>	-	95.3%
<b>Heavy</b>	40	174	10	0	<b>224</b>	-	9	4	20	0	<b>33</b>	-	16	148	87	0	<b>251</b>	-	89	7	42	0	<b>138</b>	-	646
<b>% Heavy</b>	5.0%	3.9%	2.5%	0%	<b>4.0%</b>	-	1.9%	2.5%	3.7%	0%	<b>2.8%</b>	-	2.6%	3.2%	33.0%	0%	<b>4.5%</b>	-	28.3%	4.4%	4.6%	0%	<b>10.0%</b>	-	4.7%
<b>Bicycles on Road</b>	1	2	0	0	<b>3</b>	-	0	0	0	0	<b>0</b>	-	0	1	0	0	<b>1</b>	-	0	0	0	0	<b>0</b>	-	4
<b>% Bicycles on Road</b>	0.1%	0%	0%	0%	<b>0.1%</b>	-	0%	0%	0%	0%	<b>0%</b>	-	0%	0%	0%	0%	<b>0%</b>	-	0%	0%	0%	0%	<b>0%</b>	-	0%
<b>Pedestrians</b>	-	-	-	-	-	10	-	-	-	-	-	3	-	-	-	-	-	11	-	-	-	-	-	10	-
<b>% Pedestrians</b>	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

Full Length (7 AM-10 AM, 11:30 AM-1:30 PM, 3 PM-6 PM)

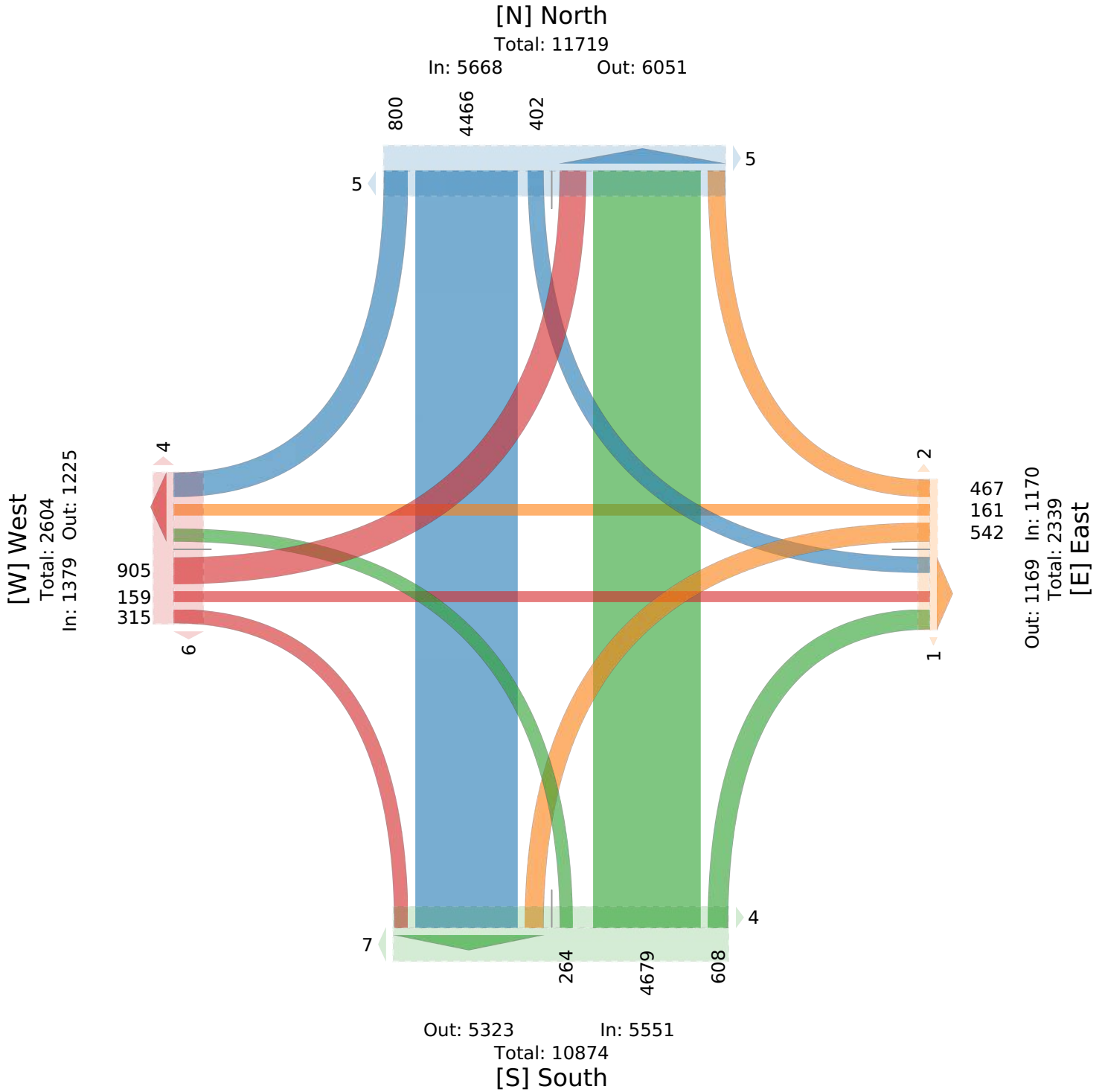
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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



5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

AM Peak (8 AM - 9 AM)

All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2018-11-27 8:00AM	18	128	8	0	154	0	20	2	16	0	38	0	23	176	9	0	208	0	8	3	38	0	49	0	449
8:15AM	16	100	7	0	123	1	19	4	19	0	42	0	26	194	9	0	229	0	14	10	37	0	61	0	455
8:30AM	24	118	7	0	149	0	27	4	20	0	51	1	43	190	7	0	240	1	4	7	20	0	31	1	471
8:45AM	21	109	6	0	136	2	19	5	16	0	40	0	25	181	10	0	216	1	17	7	40	0	64	2	456
<b>Total</b>	79	455	28	0	562	3	85	15	71	0	171	1	117	741	35	0	893	2	43	27	135	0	205	3	1831
<b>% Approach</b>	14.1%	81.0%	5.0%	0%	-	-	49.7%	8.8%	41.5%	0%	-	-	13.1%	83.0%	3.9%	0%	-	-	21.0%	13.2%	65.9%	0%	-	-	-
<b>% Total</b>	4.3%	24.8%	1.5%	0%	30.7%	-	4.6%	0.8%	3.9%	0%	9.3%	-	6.4%	40.5%	1.9%	0%	48.8%	-	2.3%	1.5%	7.4%	0%	11.2%	-	-
<b>PHF</b>	0.823	0.889	0.875	-	0.912	-	0.787	0.750	0.888	-	0.838	-	0.680	0.955	0.875	-	0.930	-	0.632	0.675	0.844	-	0.801	-	0.972
<b>Lights and Motorcycles</b>	72	420	28	0	520	-	84	14	69	0	167	-	109	718	25	0	852	-	27	26	129	0	182	-	1721
<b>% Lights and Motorcycles</b>	91.1%	92.3%	100%	0%	92.5%	-	98.8%	93.3%	97.2%	0%	97.7%	-	93.2%	96.9%	71.4%	0%	95.4%	-	62.8%	96.3%	95.6%	0%	88.8%	-	94.0%
<b>Heavy</b>	7	35	0	0	42	-	1	1	2	0	4	-	8	23	10	0	41	-	16	1	6	0	23	-	110
<b>% Heavy</b>	8.9%	7.7%	0%	0%	7.5%	-	1.2%	6.7%	2.8%	0%	2.3%	-	6.8%	3.1%	28.6%	0%	4.6%	-	37.2%	3.7%	4.4%	0%	11.2%	-	6.0%
<b>Bicycles on Road</b>	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
<b>% Bicycles on Road</b>	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
<b>Pedestrians</b>	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	3	-
<b>% Pedestrians</b>	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

AM Peak (8 AM - 9 AM)

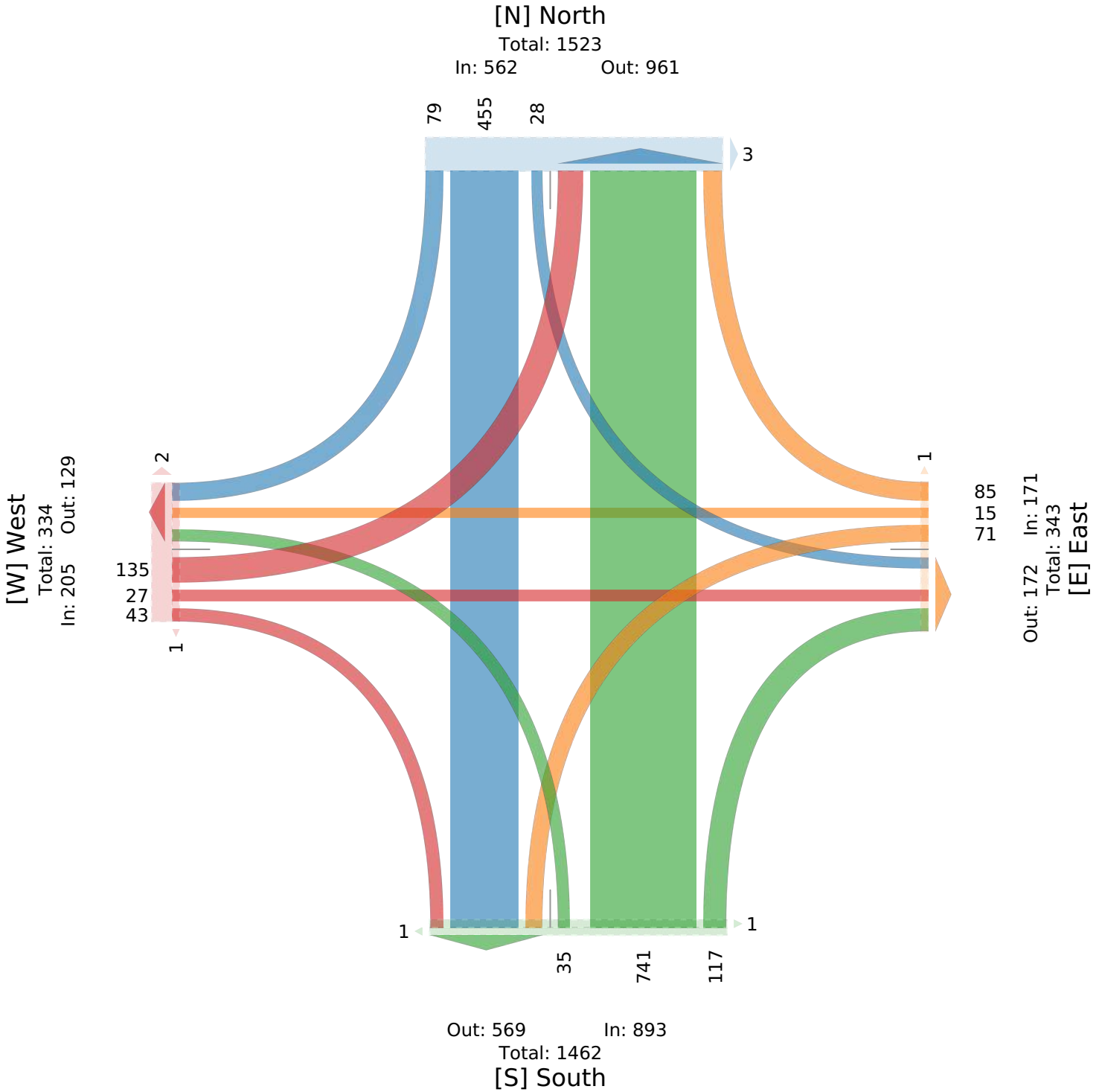
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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



5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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

Leg Direction	North Southbound					East Westbound					South Northbound					West Eastbound									
Time	R	T	L	U	App Ped*	R	T	L	U	App Ped*	R	T	L	U	App Ped*	R	T	L	U	App Ped*	Int				
2018-11-27 11:45AM	19	124	9	0	152	0	8	3	12	0	23	0	8	125	18	0	151	0	14	2	28	0	44	0	370
12:00PM	18	129	11	0	158	0	15	4	14	0	33	0	8	143	4	0	155	0	17	3	31	0	51	0	397
12:15PM	28	123	19	0	170	0	12	4	7	0	23	0	13	107	9	0	129	0	10	7	31	0	48	0	370
12:30PM	23	116	19	0	158	0	10	4	17	0	31	0	12	111	3	0	126	0	11	3	37	0	51	0	366
<b>Total</b>	88	492	58	0	638	0	45	15	50	0	110	0	41	486	34	0	561	0	52	15	127	0	194	0	1503
<b>% Approach</b>	13.8%	77.1%	9.1%	0%	-	-	40.9%	13.6%	45.5%	0%	-	-	7.3%	86.6%	6.1%	0%	-	-	26.8%	7.7%	65.5%	0%	-	-	-
<b>% Total</b>	5.9%	32.7%	3.9%	0%	42.4%	-	3.0%	1.0%	3.3%	0%	7.3%	-	2.7%	32.3%	2.3%	0%	37.3%	-	3.5%	1.0%	8.4%	0%	12.9%	-	-
<b>PHF</b>	0.786	0.953	0.763	-	0.938	-	0.750	0.938	0.735	-	0.833	-	0.788	0.850	0.472	-	0.905	-	0.765	0.536	0.858	-	0.951	-	0.946
<b>Lights and Motorcycles</b>	82	467	56	0	605	-	44	15	48	0	107	-	40	467	19	0	526	-	33	15	121	0	169	-	1407
<b>% Lights and Motorcycles</b>	93.2%	94.9%	96.6%	0%	94.8%	-	97.8%	100%	96.0%	0%	97.3%	-	97.6%	96.1%	55.9%	0%	93.8%	-	63.5%	100%	95.3%	0%	87.1%	-	93.6%
<b>Heavy</b>	6	25	2	0	33	-	1	0	2	0	3	-	1	19	15	0	35	-	19	0	6	0	25	-	96
<b>% Heavy</b>	6.8%	5.1%	3.4%	0%	5.2%	-	2.2%	0%	4.0%	0%	2.7%	-	2.4%	3.9%	44.1%	0%	6.2%	-	36.5%	0%	4.7%	0%	12.9%	-	6.4%
<b>Bicycles on Road</b>	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
<b>% Bicycles on Road</b>	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

Midday Peak (11:45 AM - 12:45 PM)

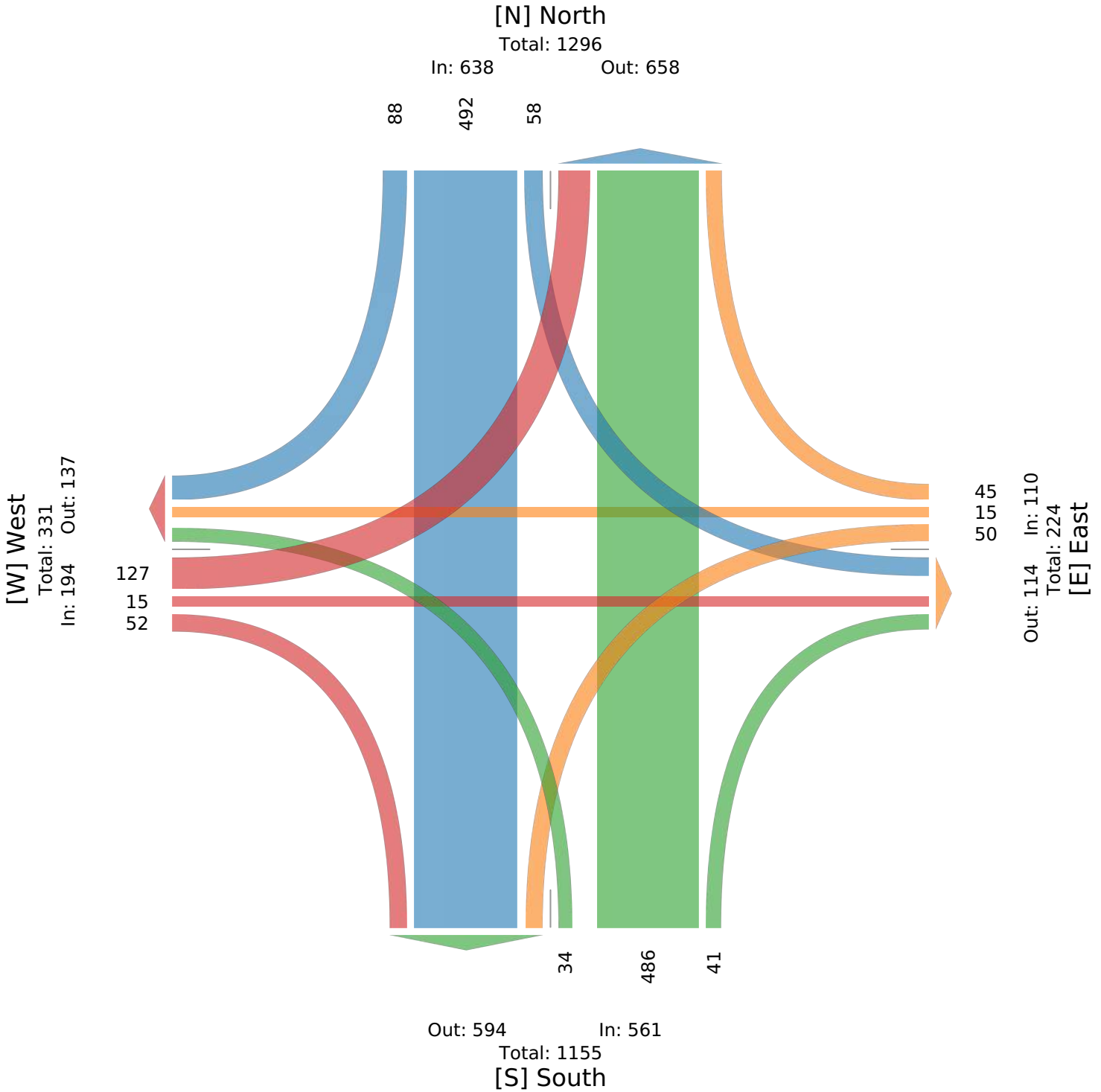
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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



5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2018-11-27 4:15PM	25	187	26	0	238	0	10	9	21	0	40	0	31	172	10	0	213	3	14	8	19	0	41	2	532
4:30PM	30	173	21	0	224	1	18	5	29	0	52	1	27	152	4	0	183	0	23	9	39	0	71	0	530
4:45PM	26	190	30	0	246	0	15	7	22	0	44	0	26	181	7	0	214	1	9	7	22	0	38	1	542
5:00PM	32	239	15	0	286	0	13	10	23	0	46	0	24	157	3	0	184	0	4	7	33	0	44	0	560
<b>Total</b>	113	789	92	0	994	1	56	31	95	0	182	1	108	662	24	0	794	4	50	31	113	0	194	3	2164
<b>% Approach</b>	11.4%	79.4%	9.3%	0%	-	-	30.8%	17.0%	52.2%	0%	-	-	13.6%	83.4%	3.0%	0%	-	-	25.8%	16.0%	58.2%	0%	-	-	-
<b>% Total</b>	5.2%	36.5%	4.3%	0%	45.9%	-	2.6%	1.4%	4.4%	0%	8.4%	-	5.0%	30.6%	1.1%	0%	36.7%	-	2.3%	1.4%	5.2%	0%	9.0%	-	-
<b>PHF</b>	0.875	0.825	0.767	-	0.868	-	0.778	0.775	0.819	-	0.875	-	0.871	0.914	0.600	-	0.928	-	0.543	0.861	0.724	-	0.683	-	0.966
<b>Lights and Motorcycles</b>	108	783	91	0	982	-	54	31	95	0	180	-	108	647	20	0	775	-	39	31	108	0	178	-	2115
<b>% Lights and Motorcycles</b>	95.6%	99.2%	98.9%	0%	98.8%	-	96.4%	100%	100%	0%	98.9%	-	100%	97.7%	83.3%	0%	97.6%	-	78.0%	100%	95.6%	0%	91.8%	-	97.7%
<b>Heavy</b>	4	6	1	0	11	-	2	0	0	0	2	-	0	15	4	0	19	-	11	0	5	0	16	-	48
<b>% Heavy</b>	3.5%	0.8%	1.1%	0%	1.1%	-	3.6%	0%	0%	0%	1.1%	-	0%	2.3%	16.7%	0%	2.4%	-	22.0%	0%	4.4%	0%	8.2%	-	2.2%
<b>Bicycles on Road</b>	1	0	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
<b>% Bicycles on Road</b>	0.9%	0%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

5360099 - Castlefrank and Terry Fox - Nov - ... - TMC

Tue Nov 27, 2018

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

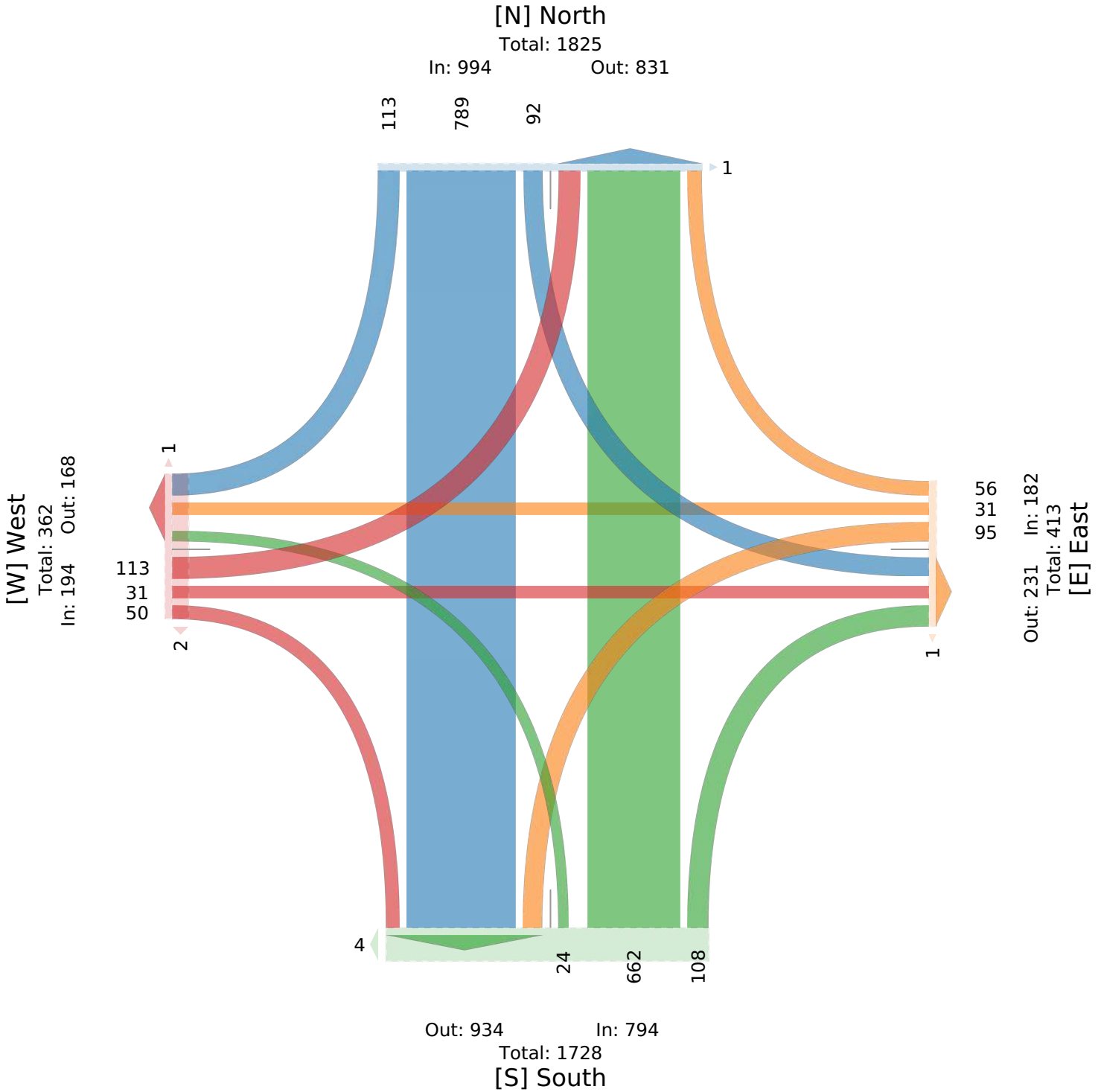
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 593386, Location: 45.28498, -75.88567, Site Code: 38169103



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



## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

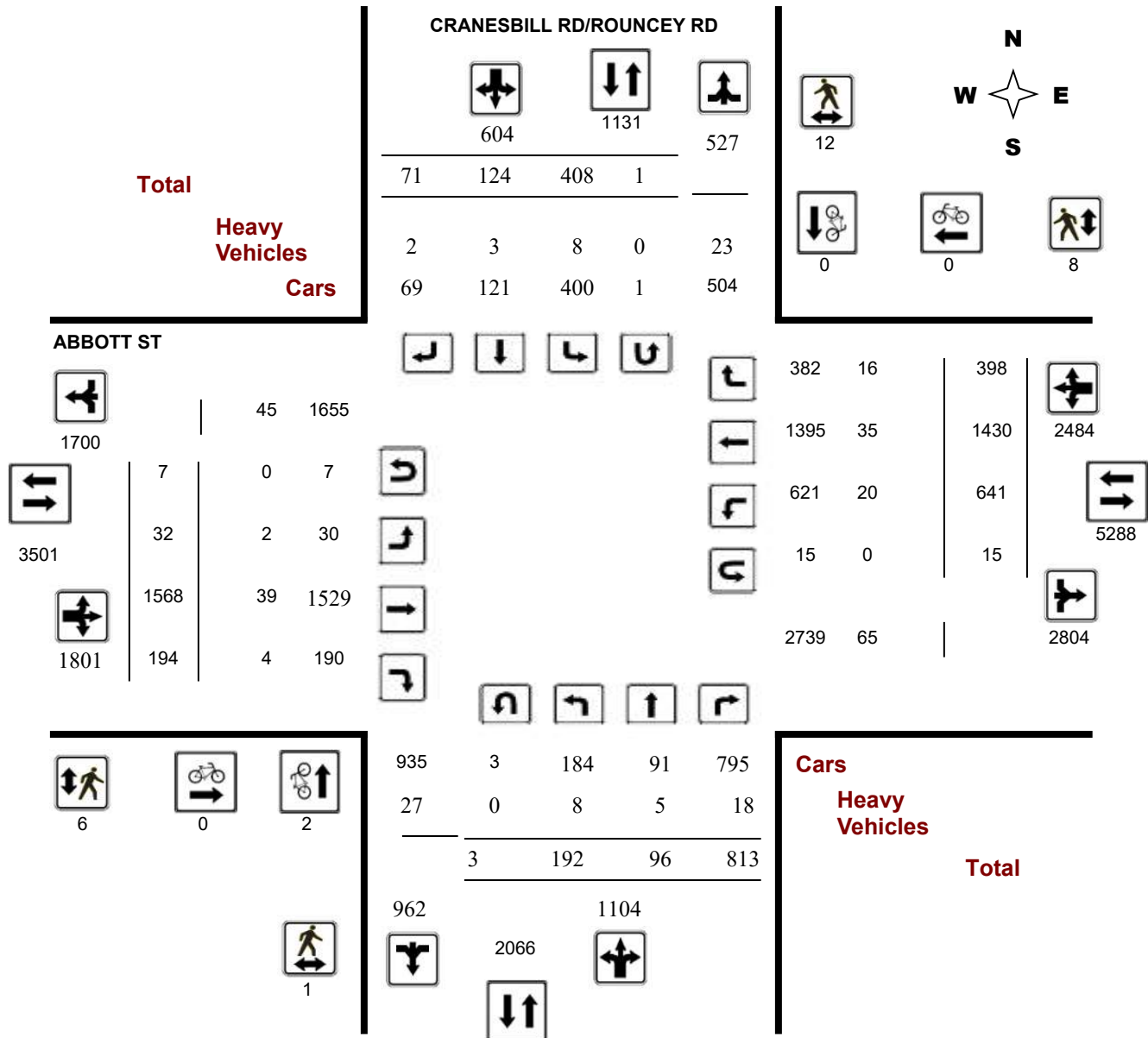
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

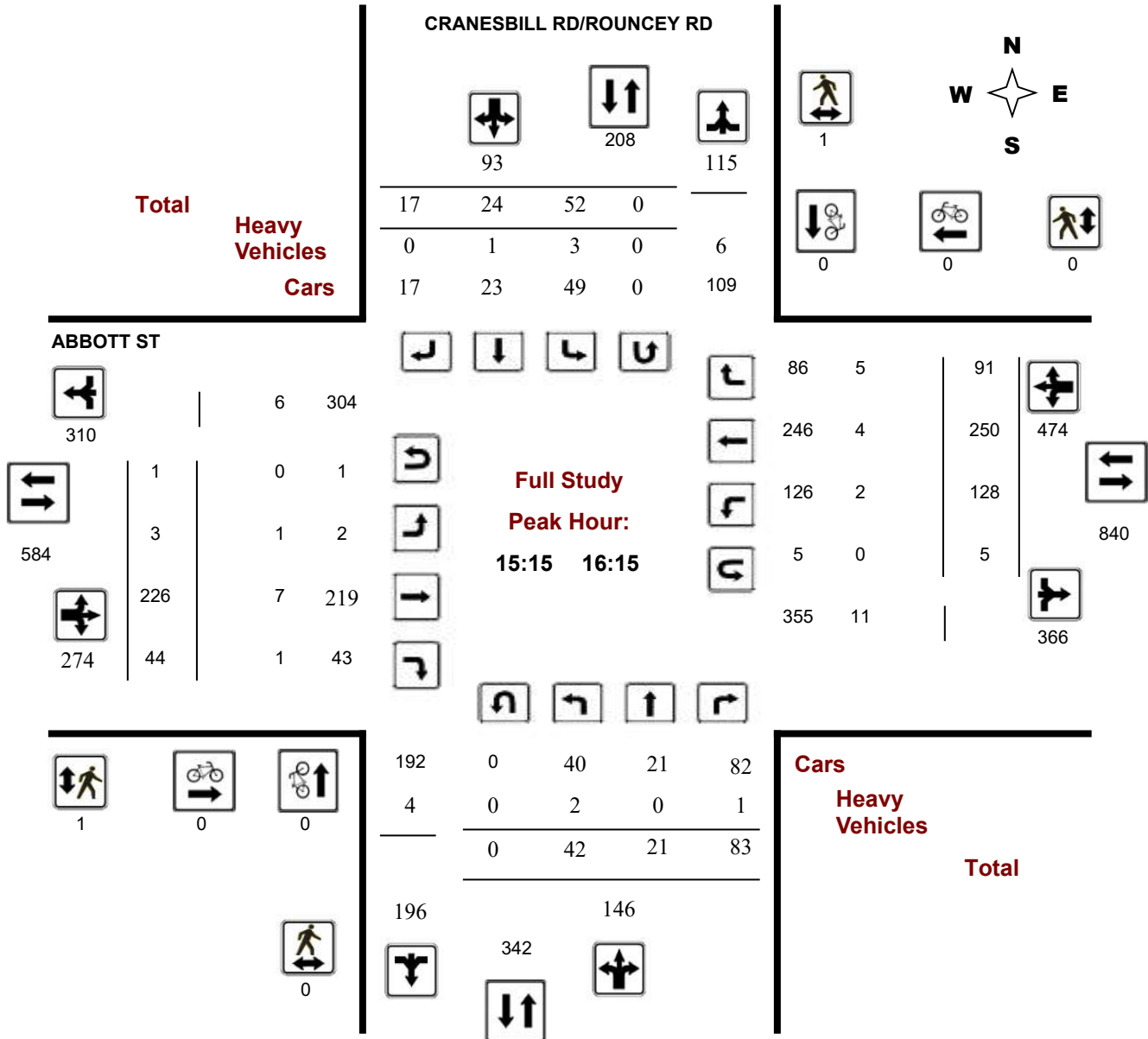
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### Full Study Peak Hour Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

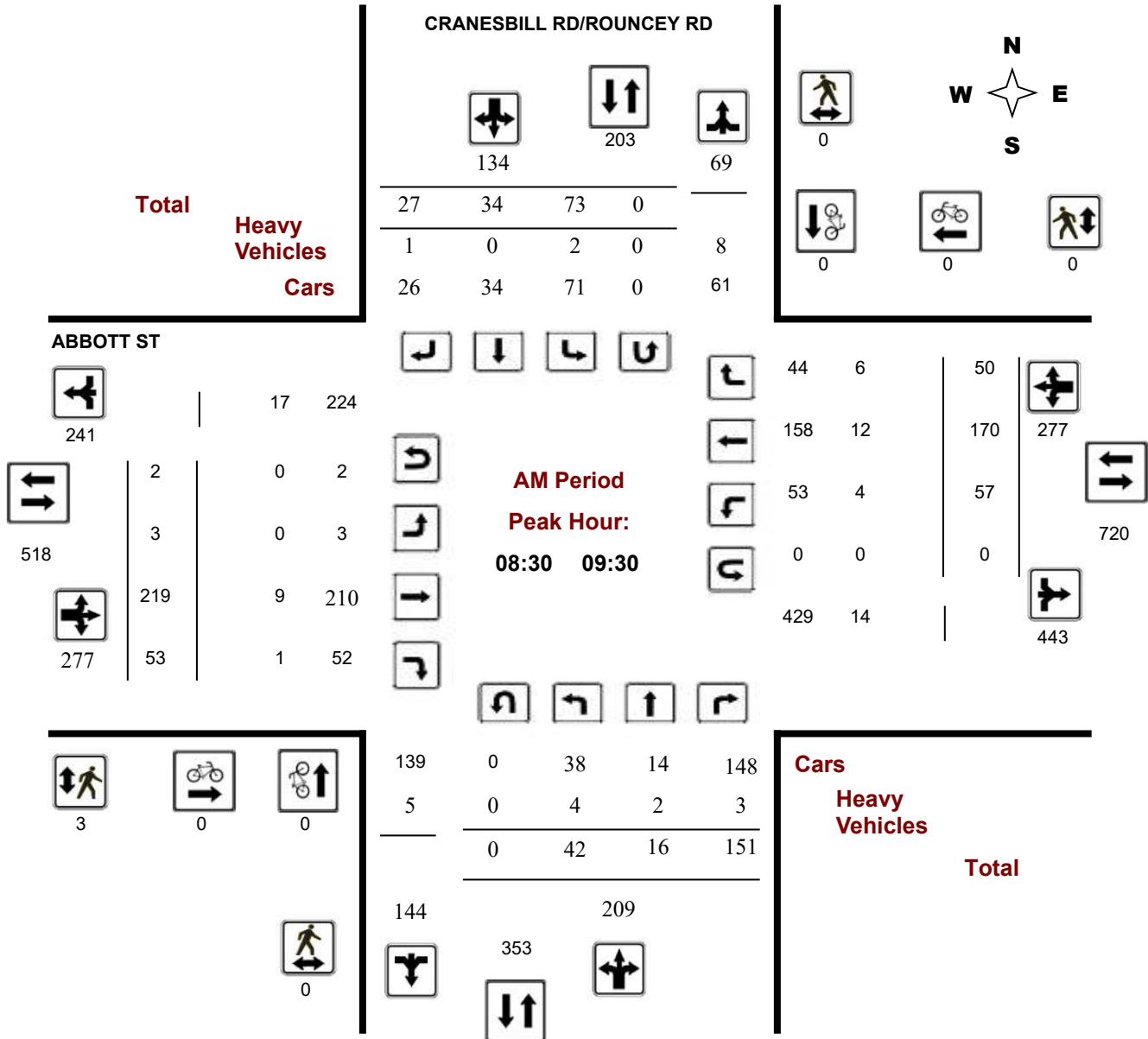
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### AM Period Peak Hour Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

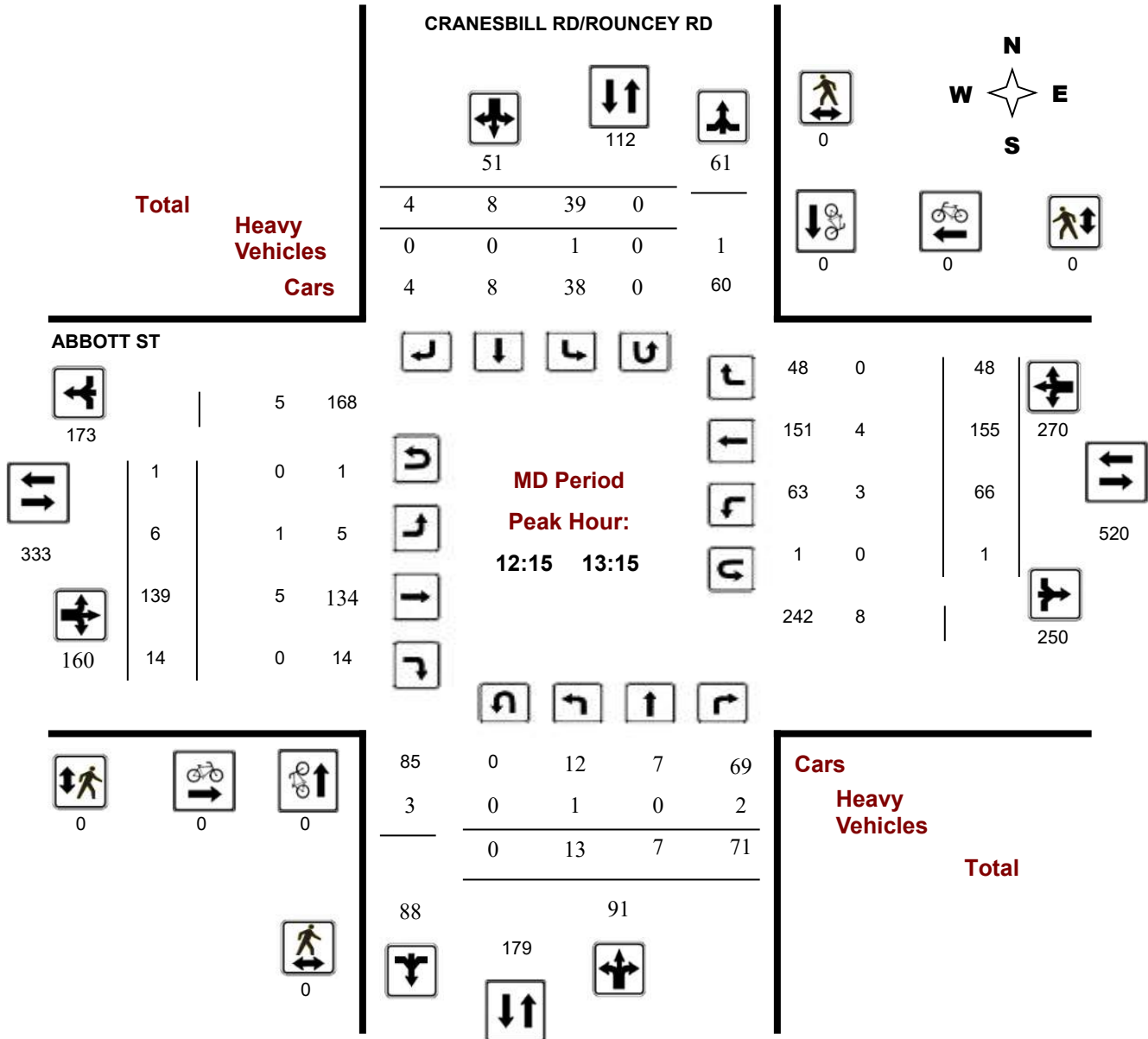
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### MD Period Peak Hour Diagram



## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

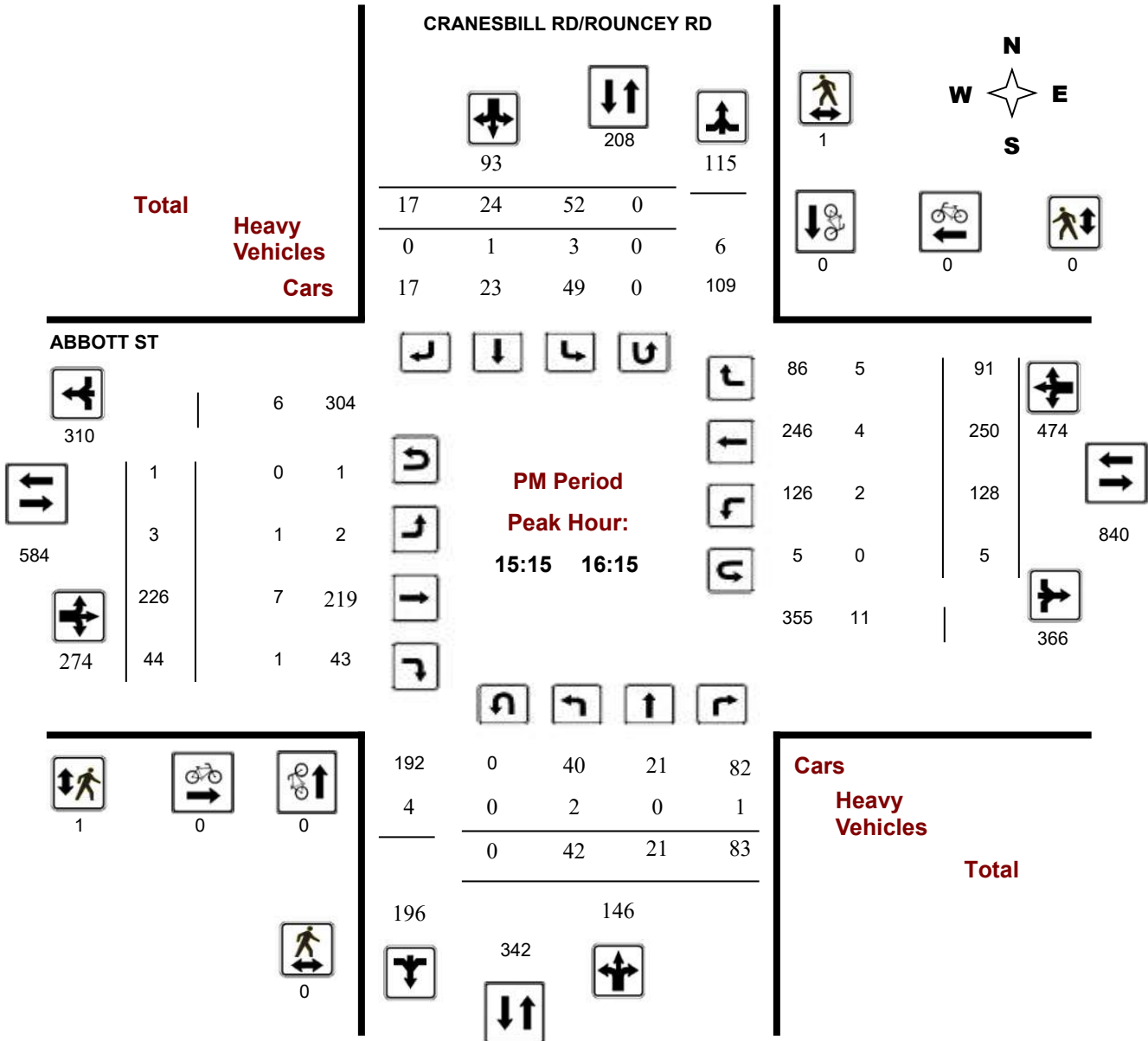
**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### PM Period Peak Hour Diagram





# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Wednesday, January 08, 2025

**Total Observed U-Turns**

**AADT Factor**

Northbound: 3      Southbound: 1  
 Eastbound: 7      Westbound: 15

1.00

#### CRANESBILL RD/ROUNCEY RD

#### ABBOTT ST

Period	Northbound					Southbound					Eastbound				Westbound			STR TOT	Grand Total	
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	WB TOT					
07:00 08:00	10	10	141	161	237	59	17	0	76	237	1	196	10	207	33	109	11	153	360	597
08:00 09:00	34	8	132	174	268	63	23	8	94	268	4	228	35	267	56	138	35	229	496	764
09:00 10:00	28	16	123	167	277	62	24	24	110	277	3	203	29	235	45	155	38	238	473	750
11:30 12:30	13	4	64	81	120	31	3	5	39	120	4	131	16	151	49	107	35	191	342	462
12:30 13:30	14	10	71	95	152	42	10	5	57	152	5	138	10	153	60	159	41	260	413	565
15:00 16:00	30	17	79	126	210	50	19	15	84	210	4	218	36	258	124	242	77	443	701	911
16:00 17:00	32	19	110	161	248	50	26	11	87	248	4	208	34	246	131	253	83	467	713	961
17:00 18:00	31	12	93	136	192	51	2	3	56	192	7	246	24	277	143	267	78	488	765	957
<b>Sub Total</b>	192	96	813	1101	1704	408	124	71	603	1704	32	1568	194	1794	641	1430	398	2469	4263	5967
<b>U Turns</b>	3				1		4		7				15		22		26			
<b>Total</b>	192	96	813	1104	1708	408	124	71	604	1708	32	1568	194	1801	641	1430	398	2484	4285	5993

**EQ 12Hr** 267 133 1130 1535 567 172 99 840 2374 44 2180 270 2503 891 1988 553 3453 5956 8330  
 Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

**AVG 12Hr** 267 133 1130 1535 567 226 129 840 2374 44 2180 270 2503 891 1988 553 3453 5956 8330  
 Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1.00**

**AVG 24Hr** 350 174 1480 2011 743 296 169 1100 3110 58 2856 354 3279 1167 2604 724 4523 7802 10912  
 Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

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



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute Increments

#### CRANESBILL RD/ROUNCEY RD

#### ABBOTT ST

Northbound

Southbound

Eastbound

Westbound

Time Period	LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00 07:15	0	0	21	21	16	2	0	18	39	1	40	0	41	10	26	1	37	78	117
07:15 07:30	2	1	29	32	15	2	0	17	49	0	49	2	51	5	27	5	37	88	137
07:30 07:45	1	1	45	47	15	7	0	22	69	0	56	3	60	8	34	1	44	104	173
07:45 08:00	7	8	46	63	13	6	0	19	82	0	51	5	57	10	22	4	37	94	176
08:00 08:15	4	1	29	34	9	5	1	15	49	1	64	6	71	12	26	4	42	113	162
08:15 08:30	7	2	29	38	13	5	1	19	57	2	50	5	57	16	29	8	53	110	167
08:30 08:45	11	5	38	54	17	5	1	23	77	0	51	11	62	18	41	7	66	128	205
08:45 09:00	12	0	36	48	24	8	5	37	85	1	63	13	77	10	42	16	68	145	230
09:00 09:15	7	5	48	60	21	13	12	46	106	2	72	21	96	11	42	17	70	166	272
09:15 09:30	12	6	29	47	11	8	9	28	75	0	33	8	42	18	45	10	73	115	190
09:30 09:45	5	2	21	28	13	2	1	16	44	1	49	0	50	13	37	6	56	106	150
09:45 10:00	4	3	25	32	17	1	2	20	52	0	49	0	49	3	31	5	39	88	140
11:30 11:45	3	2	17	22	5	1	3	9	31	1	28	4	33	12	18	7	37	70	101
11:45 12:00	6	0	14	20	12	1	1	14	34	2	28	5	35	9	29	6	46	81	115
12:00 12:15	3	2	20	25	9	0	0	9	34	0	42	0	42	10	25	9	44	86	120
12:15 12:30	1	0	13	14	5	1	1	7	21	1	33	7	41	18	35	13	66	107	128
12:30 12:45	4	3	22	29	11	2	1	14	43	3	32	0	35	19	44	7	71	106	149
12:45 13:00	6	1	25	32	12	3	1	16	48	1	40	3	45	14	37	14	65	110	158
13:00 13:15	2	3	11	16	11	2	1	14	30	1	34	4	39	15	39	14	68	107	137
13:15 13:30	2	3	13	18	8	3	2	13	31	0	32	3	35	12	39	6	58	93	124
15:00 15:15	4	3	26	33	9	2	4	15	48	1	41	1	43	26	56	8	92	135	183
15:15 15:30	6	2	14	22	15	4	8	27	49	0	45	11	56	35	76	23	135	191	240
15:30 15:45	12	6	20	38	11	7	1	19	57	1	70	12	84	30	53	22	107	191	248
15:45 16:00	8	6	19	33	15	6	2	23	56	2	62	12	76	33	57	24	114	190	246
16:00 16:15	16	7	30	53	11	7	6	24	77	0	49	9	58	30	64	22	118	176	253
16:15 16:30	3	3	22	28	12	5	1	18	46	2	61	10	73	31	51	19	101	174	220
16:30 16:45	5	6	27	38	7	4	2	13	51	1	60	7	68	39	77	23	139	207	258
16:45 17:00	8	3	31	42	20	10	2	32	74	1	38	8	47	31	61	19	111	158	232
17:00 17:15	8	5	19	32	15	0	0	15	47	1	56	8	65	47	59	19	126	191	238
17:15 17:30	9	3	23	35	15	0	1	16	51	2	50	5	57	20	71	15	107	164	215
17:30 17:45	7	1	26	35	11	0	0	12	47	2	80	9	92	39	83	23	145	237	284
17:45 18:00	7	3	25	35	10	2	2	14	49	2	60	2	64	37	54	21	112	176	225
<b>Total:</b>	<b>192</b>	<b>96</b>	<b>813</b>	<b>1104</b>	<b>408</b>	<b>124</b>	<b>71</b>	<b>604</b>	<b>1708</b>	<b>32</b>	<b>1568</b>	<b>194</b>	<b>1801</b>	<b>641</b>	<b>1430</b>	<b>398</b>	<b>2484</b>	<b>4285</b>	<b>5,993</b>

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cyclist volumes refer to Cyclist Volume report.



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study Cyclist Volume

#### CRANESBILL RD/ROUNCEY RD

#### ABBOTT ST

Time Period	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00 07:15	1	0	1	0	0	0	1
07:15 07:30	0	0	0	0	0	0	0
07:30 07:45	0	0	0	0	0	0	0
07:45 08:00	0	0	0	0	0	0	0
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	1	0	1	0	0	0	1
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	0	0	0	0
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	0	0	0	0
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	0	0	0	0	0	0	0
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study Pedestrian Volume

#### CRANESBILL RD/ROUNCEY RD

#### ABBOTT ST

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	0	0	0	0	1	1	1
07:15 07:30	0	0	0	2	1	3	3
07:30 07:45	0	3	3	0	3	3	6
07:45 08:00	0	1	1	0	0	0	1
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	1	0	1	0	1	1	2
08:30 08:45	0	0	0	0	0	0	0
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	0	0	0	0	0	0
09:15 09:30	0	0	0	3	0	3	3
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0
12:30 12:45	0	0	0	0	0	0	0
12:45 13:00	0	0	0	0	0	0	0
13:00 13:15	0	0	0	0	0	0	0
13:15 13:30	0	0	0	0	0	0	0
15:00 15:15	0	0	0	0	0	0	0
15:15 15:30	0	0	0	0	0	0	0
15:30 15:45	0	0	0	0	0	0	0
15:45 16:00	0	0	0	1	0	1	1
16:00 16:15	0	1	1	0	0	0	1
16:15 16:30	0	1	1	0	1	1	2
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	6	6	0	0	0	6
17:00 17:15	0	0	0	0	0	0	0
17:15 17:30	0	0	0	0	1	1	1
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
<b>Total .....</b>	<b>1</b>	<b>12</b>	<b>13</b>	<b>6</b>	<b>8</b>	<b>14</b>	<b>27</b>



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study Heavy Vehicles

#### CRANESBILL RD/ROUNCEY RD

#### ABBOTT ST

Northbound                      Southbound                      Eastbound                      Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
07:15 07:30	0	1	2	3	0	0	0	0	3	0	1	0	1	0	3	1	4	5	8
07:30 07:45	0	0	0	0	2	0	0	2	2	0	1	0	1	1	2	1	4	5	7
07:45 08:00	0	0	1	1	0	0	0	0	1	0	0	1	1	1	1	0	2	3	4
08:00 08:15	0	0	1	1	0	1	0	1	2	0	3	0	3	1	1	0	2	5	7
08:15 08:30	0	0	1	1	0	0	0	0	1	0	3	0	3	1	1	1	3	6	7
08:30 08:45	1	2	0	3	0	0	0	0	3	0	3	0	3	1	2	4	7	10	13
08:45 09:00	1	0	0	1	1	0	1	2	3	0	2	0	2	1	5	2	8	10	13
09:00 09:15	0	0	2	2	1	0	0	1	3	0	3	1	4	1	3	0	4	8	11
09:15 09:30	2	0	1	3	0	0	0	0	3	0	1	0	1	1	2	0	3	4	7
09:30 09:45	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3	3
09:45 10:00	1	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	2	2	3
11:30 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
11:45 12:00	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2	2
12:00 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	2
12:15 12:30	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
12:30 12:45	0	0	0	0	0	0	0	0	0	1	1	0	2	0	3	0	3	5	5
12:45 13:00	1	0	1	2	1	0	0	1	3	0	1	0	1	1	1	0	2	3	6
13:00 13:15	0	0	0	0	0	0	0	0	0	0	3	0	3	2	0	0	2	5	5
13:15 13:30	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
15:00 15:15	0	0	2	2	0	0	1	1	3	0	3	0	3	1	1	1	3	6	9
15:15 15:30	1	0	1	2	1	0	0	1	3	0	1	0	1	0	0	1	1	2	5
15:30 15:45	0	0	0	0	0	0	0	0	0	1	2	0	3	1	1	0	2	5	5
15:45 16:00	0	0	0	0	2	1	0	3	3	0	2	0	2	0	0	1	1	3	6
16:00 16:15	1	0	0	1	0	0	0	0	1	0	2	1	3	1	3	3	7	10	11
16:15 16:30	0	0	3	3	0	1	0	1	4	0	1	0	1	0	1	0	1	2	6
16:30 16:45	0	2	0	2	0	0	0	0	2	0	2	0	2	0	0	1	1	3	5
16:45 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
17:00 17:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1
17:15 17:30	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2	2
17:30 17:45	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
17:45 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
Total: None	8	5	18	31	8	3	2	13	44	2	39	4	45	20	35	16	71	116	160



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Survey Date:** Wednesday, January 08, 2025

**WO No:** 42386

**Start Time:** 07:00

**Device:** Miovision

### Full Study 15 Minute U-Turn Total

CRANESBILL RD/ROUNCEY RD

ABBOTT ST

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	1	1	2
07:45	08:00	2	0	1	1	4
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	1	0	1
09:15	09:30	0	0	1	0	1
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	2	2
12:00	12:15	0	0	0	0	0
12:15	12:30	0	0	0	0	0
12:30	12:45	0	0	0	1	1
12:45	13:00	0	0	1	0	1
13:00	13:15	0	0	0	0	0
13:15	13:30	0	0	0	1	1
15:00	15:15	0	0	0	2	2
15:15	15:30	0	0	0	1	1
15:30	15:45	0	0	1	2	3
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	2	2
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	1	1
17:15	17:30	0	0	0	1	1
17:30	17:45	1	1	1	0	3
17:45	18:00	0	0	0	0	0
Total		3	1	7	15	26



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** ABBOTT ST @ CRANESBILL RD/ROUNCEY RD

**Traffic Control:** Roundabout

**Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Dec-15, Sun,13:00	Clear	SMV unattended vehicle	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Unattended vehicle	0
2019-Dec-16, Mon,07:37	Clear	Angle	P.D. only	Ice	West	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Construction equipment	Other motor vehicle	
2019-Dec-16, Mon,08:46	Clear	Angle	Non-reportable	Ice	West	Merging	Automobile, station wagon	Skidding/sliding	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jun-16, Tue,18:33	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Curb	0
2020-Jun-19, Fri,23:58	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Ran off road	0
2022-Jul-25, Mon,06:35	Clear	Angle	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-16, Wed,15:20	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** ABBOTT ST @ LANCELEAF WAY/MALAHAT WAY

**Traffic Control:** Stop sign

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-May-27, Wed,11:30	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** ABBOTT ST @ LIFT LANE

**Traffic Control:** Stop sign

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-23, Wed, 16:50	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** ABBOTT ST @ PONDEROSA ST

**Traffic Control:** Stop sign

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-Mar-28, Mon,00:40	Snow	SMV other	P.D. only	Loose snow	West	Turning right	Pick-up truck	Pole (sign, parking meter)	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** ABBOTT ST @ ROBERT GRANT AVE

**Traffic Control:** Roundabout

**Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-09, Fri,23:02	Snow	SMV other	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2019-Jun-01, Sat,21:45	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Concrete guide rail	0
2019-Oct-10, Thu,09:05	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2022-Oct-11, Tue,07:51	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** CASTLEFRANK RD @ ABBOTT ST/TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jan-02, Tue,08:20	Snow	SMV other	Non-fatal injury	Slush	South	Slowing or stopping	Automobile, station wagon	Pole (utility, power)	0
2018-Jun-01, Fri,18:05	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-02, Sat,10:31	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-02, Sat,13:05	Clear	Rear end	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2018-Jun-03, Sun,16:18	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-11, Wed,10:07	Clear	Other	P.D. only	Dry	South	Turning right	Truck-other	Pole (sign, parking meter)	0
					West	Turning right	Automobile, station wagon	Pole (sign, parking meter)	
2018-Sep-05, Wed,18:38	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-17, Mon,05:20	Fog, mist, smoke, dust	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Pole (utility, power)	0
2018-Sep-19, Wed,15:56	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Oct-20, Sat,18:11	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2019-Jan-06, Sun,12:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-13, Mon,19:09	Rain	Rear end	Non-fatal injury	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** CASTLEFRANK RD @ ABBOTT ST/TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-09, Sun,11:56	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2019-Jun-09, Sun,19:46	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Curb	0
2019-Oct-19, Sat,11:55	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2019-Dec-19, Thu,18:10	Clear	Rear end	P.D. only	Packed snow	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jan-04, Sat,17:15	Snow	Rear end	P.D. only	Wet	North	Unknown	Unknown	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Mar-03, Tue,16:30	Rain	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Mar-27, Fri,13:36	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Aug-28, Fri,14:27	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Unknown	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2020-Oct-23, Fri,18:04	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Dec-18, Fri,19:05	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Dec-30, Wed,00:22	Clear	SMV other	P.D. only	Dry	South	Turning right	Automobile, station wagon	Pole (utility, power)	0
2021-Jan-24, Sun,14:30	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2018    **To:** December 31, 2022

**Location:** CASTLEFRANK RD @ ABBOTT ST/TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Feb-04, Thu,12:43	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Feb-05, Fri,14:43	Clear	Turning movement	P.D. only	Loose snow	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Feb-25, Thu,01:16	Clear	SMV other	P.D. only	Loose snow	South	Unknown	Snow plow	Pole (utility, power)	0
2021-Mar-06, Sat,09:50	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2021-Mar-06, Sat,17:40	Clear	Turning movement	P.D. only	Dry	South	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2021-Mar-27, Sat,18:42	Clear	Rear end	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2021-Apr-15, Thu,19:25	Rain	SMV other	P.D. only	Wet	West	Turning right	Passenger van	Pole (utility, power)	0
2021-Jun-08, Tue,16:41	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2021-Jun-18, Fri,21:50	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Aug-04, Wed,17:21	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2021-Sep-24, Fri,10:32	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Oct-06, Wed,21:30	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2018    **To:** December 31, 2022

**Location:** CASTLEFRANK RD @ ABBOTT ST/TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Oct-21, Thu,18:25	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Dec-21, Tue,17:50	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Mar-01, Tue,14:36	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2022-Mar-11, Fri,13:43	Freezing Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2022-Jul-06, Wed,20:29	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Aug-04, Thu,11:53	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2022-Aug-30, Tue,16:30	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Sep-01, Thu,15:59	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Oct-24, Mon,09:55	Clear	Sideswipe	P.D. only	Dry	North	Other	Delivery van	Other motor vehicle	0
					North	Other	Automobile, station wagon	Other motor vehicle	
2022-Oct-27, Thu,16:30	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2018    **To:** December 31, 2022

**Location:** CRANESBILL RD btwn ABBOTT ST E & MALAHAT WAY /ADSTOCK HTS

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-27, Sun,00:00	Clear	SMV unattended vehicle	P.D. only	Packed snow	Unknown	Unknown	Unknown	Unattended vehicle	0
2021-Oct-24, Sun,07:13	Clear	SMV unattended vehicle	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Unattended vehicle	0
						Parked	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** CRANESBILL RD btwn ADSTOCK HTS/MALAHATWAY & NORDMANN FIR CRT

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jul-02, Tue,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	South	Going ahead	Truck and trailer	Unattended vehicle	0
2020-May-15, Fri,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2022-May-17, Tue,09:26	Clear	Rear end	Non-fatal injury	Dry	East East	Slowing or stopping Slowing or stopping	Automobile, station wagon Pick-up truck	Other motor vehicle Other motor vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** HONEYLOCUST AVE btwn BACKBEND TERR & TRIANGLE ST

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-17, Mon,11:05	Clear	Sideswipe	P.D. only	Dry	East	Stopped	Construction equipment	Other motor vehicle	0
					East	Going ahead	Truck - closed	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** LIFT LANE btwn ABBOTT ST & TRIANGLE ST

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Sep-27, Mon, 13:31	Clear	SMV unattended vehicle	P.D. only	Dry	East	Pulling away from shoulder or curb	Automobile, station wagon	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** MALAHAT WAY btwn ABBOTT ST E & EGO TERR

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-22, Thu,10:30	Clear	SMV unattended vehicle	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Unattended vehicle	0
2020-Jan-11, Sat,18:10	Rain	SMV unattended vehicle	P.D. only	Wet	East	Reversing	Automobile, station wagon	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** NORDMANN FIR CRT btwn CRANESBILL RD & END

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Feb-13, Thu,09:36	Snow	SMV unattended vehicle	P.D. only	Loose snow	South	Going ahead	Construction equipment	Unattended vehicle	0
2022-Apr-11, Mon,06:23	Clear	SMV unattended vehicle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Unattended vehicle	0
2022-May-07, Sat,07:11	Clear	SMV unattended vehicle	P.D. only	Dry	South	Reversing	Car and trailer	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** OXALIS CRES btwn PONDEROSA ST & PONDEROSA ST

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jul-31, Tue,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2018-Aug-08, Wed,19:17	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2019-Jan-25, Fri,09:53	Clear	SMV unattended vehicle	P.D. only	Loose snow	North	Reversing	Automobile, station wagon	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** TRIANGLE ST btwn ABBOTT ST & PLANK ST

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-11, Mon,16:18	Snow	SMV unattended vehicle	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** TRIANGLE ST btwn THUNDERBOLT ST/TWIST WAY & WARRIOR ST

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-17, Mon,00:00	Clear	SMV unattended vehicle	P.D. only	Wet	Unknown	Unknown	Unknown	Unattended vehicle	0
2019-Oct-05, Sat,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** TWIST WAY btwn ABBOTT ST & EGO TERR

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-May-30, Sat,17:30	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** TWIST WAY btwn EGO TERR & TRIANGLE ST

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-12, Sat,12:00	Rain	SMV unattended vehicle	P.D. only	Wet	North	Reversing	Unknown	Unattended vehicle	0
2020-Jan-22, Wed,21:21	Snow	SMV unattended vehicle	P.D. only	Slush	North	Reversing	Pick-up truck	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2018 To: December 31, 2022

**Location:** WARRIOR ST btwn BACKBEND TERR & TRIANGLE ST

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Sep-14, Mon, 16:00	Clear	SMV unattended vehicle	P.D. only	Dry	South	Turning left	Pick-up truck	Unattended vehicle	0

**APPENDIX D**  
**TRANS MODEL PLOTS**

# TRANS Regional Model

Version 1.01 - Assigned December 09, 2024

## AM Peak Hour Total Traffic Volume

### Hazeldean Road / Terry Fox Drive

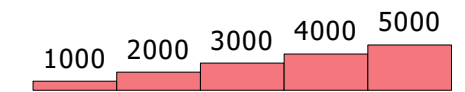
2022 Model

User Initials: AJ  
Plot Prepared: January 30, 2025  
EMME Scenario: 22002

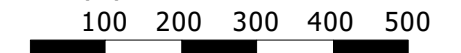


## Legend

AM Peak Hour Total Traffic Volume



Distance (m)



The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

# TRANS Regional Model

Version 1.01 - Assigned December 09, 2024

## AM Peak Hour Total Traffic Volume

### Hazeldean Road / Terry Fox Drive

2046 Model

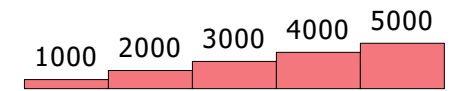
User Initials: AJ

Plot Prepared: January 30, 2025

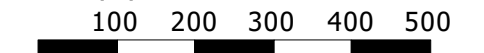
EMME Scenario: 46001

## Legend

AM Peak Hour Total Traffic Volume



Distance (m)



The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

**APPENDIX E**  
**TDM-supportive Development and Design and Infrastructure**  
**checklist**

## TDM-Supportive Development Design and Infrastructure Checklist: Non-Residential Developments (office, institutional, retail or industrial)

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

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>1. WALKING &amp; CYCLING: ROUTES</b>		
<b>1.1 Building location &amp; access points</b>		
BASIC	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	<input checked="" type="checkbox"/> Building is close to the street with multiple
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input checked="" type="checkbox"/> access points, close to parking and pedestrian facilities
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input checked="" type="checkbox"/>
<b>1.2 Facilities for walking &amp; cycling</b>		
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 <i>Official Plan policy 4.3.3</i> )	<input type="checkbox"/> No rapid transit stops within 600 m walking distance to site
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 <i>Official Plan policy 4.3.12</i> )	<input checked="" type="checkbox"/> Site access is well serviced for pedestrians

<b>TDM-supportive design &amp; infrastructure measures: Non-residential developments</b>		<b>Check if completed &amp; add descriptions, explanations or plan/drawing references</b>
<b>REQUIRED</b>	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 <i>Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
<b>REQUIRED</b>	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 <i>Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
<b>REQUIRED</b>	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 <i>Official Plan policy 4.3.11</i> )	<input checked="" type="checkbox"/> PXO recommendations provided within TIA Report
<b>BASIC</b>	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input type="checkbox"/> No nearby transit stops
<b>BASIC</b>	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<input type="checkbox"/>
<b>BASIC</b>	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	<input checked="" type="checkbox"/> Recommendation for 30 km/h school zone
<b>1.3 Amenities for walking &amp; cycling</b>		
<b>BASIC</b>	1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	<input type="checkbox"/>
<b>BASIC</b>	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)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/>
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 <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
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 <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input checked="" type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input checked="" type="checkbox"/> 13 cyclists trips expected during AM peak and 11 during PM peak. 47 spaces provided
<b>2.2 Secure bicycle parking</b>		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office 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 <i>Zoning By-law Section 111</i> )	<input type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
<b>2.3 Shower &amp; change facilities</b>		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input checked="" type="checkbox"/>
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/>
<b>2.4 Bicycle repair station</b>		
BETTER	2.4.1 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)	<input type="checkbox"/>

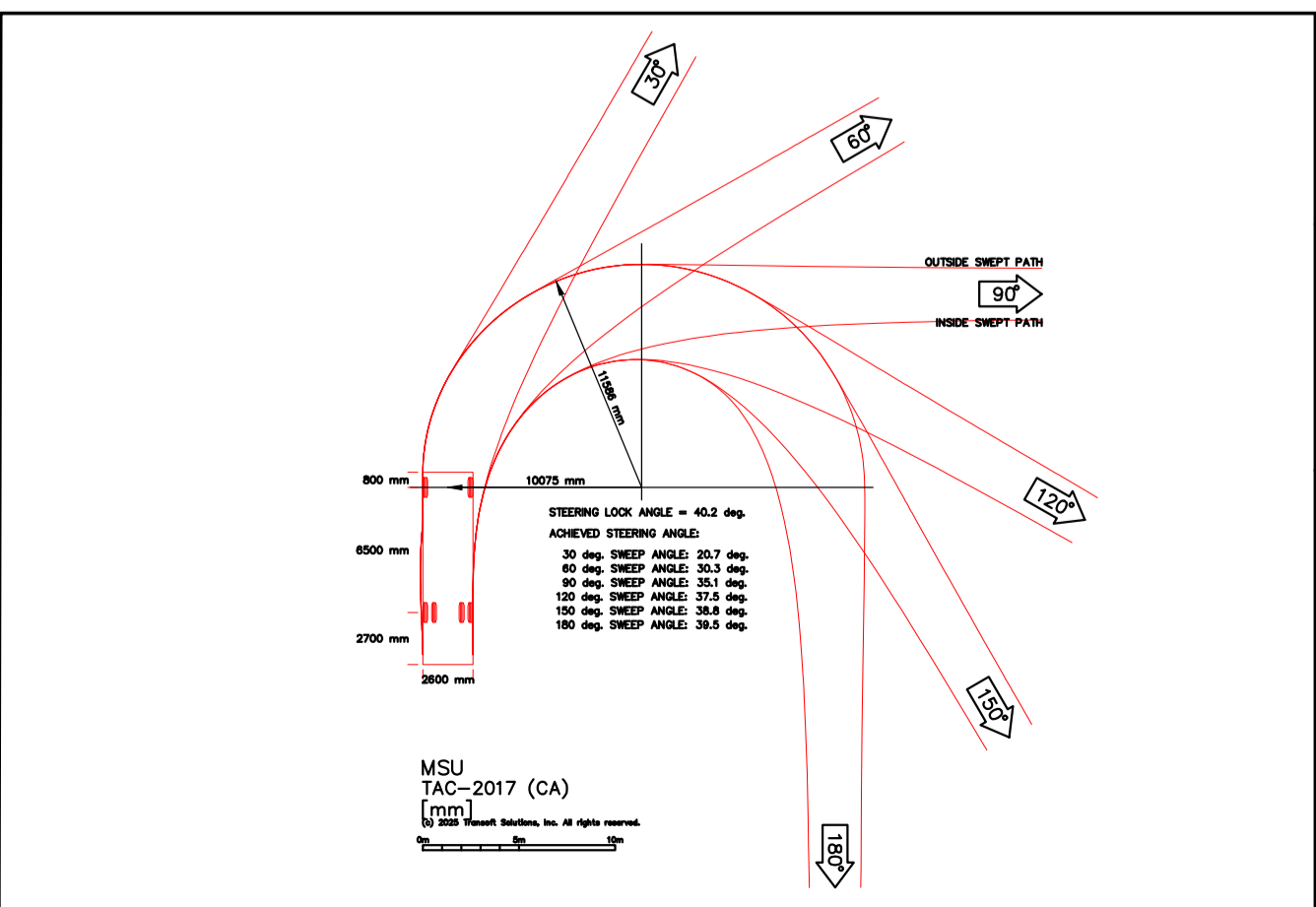
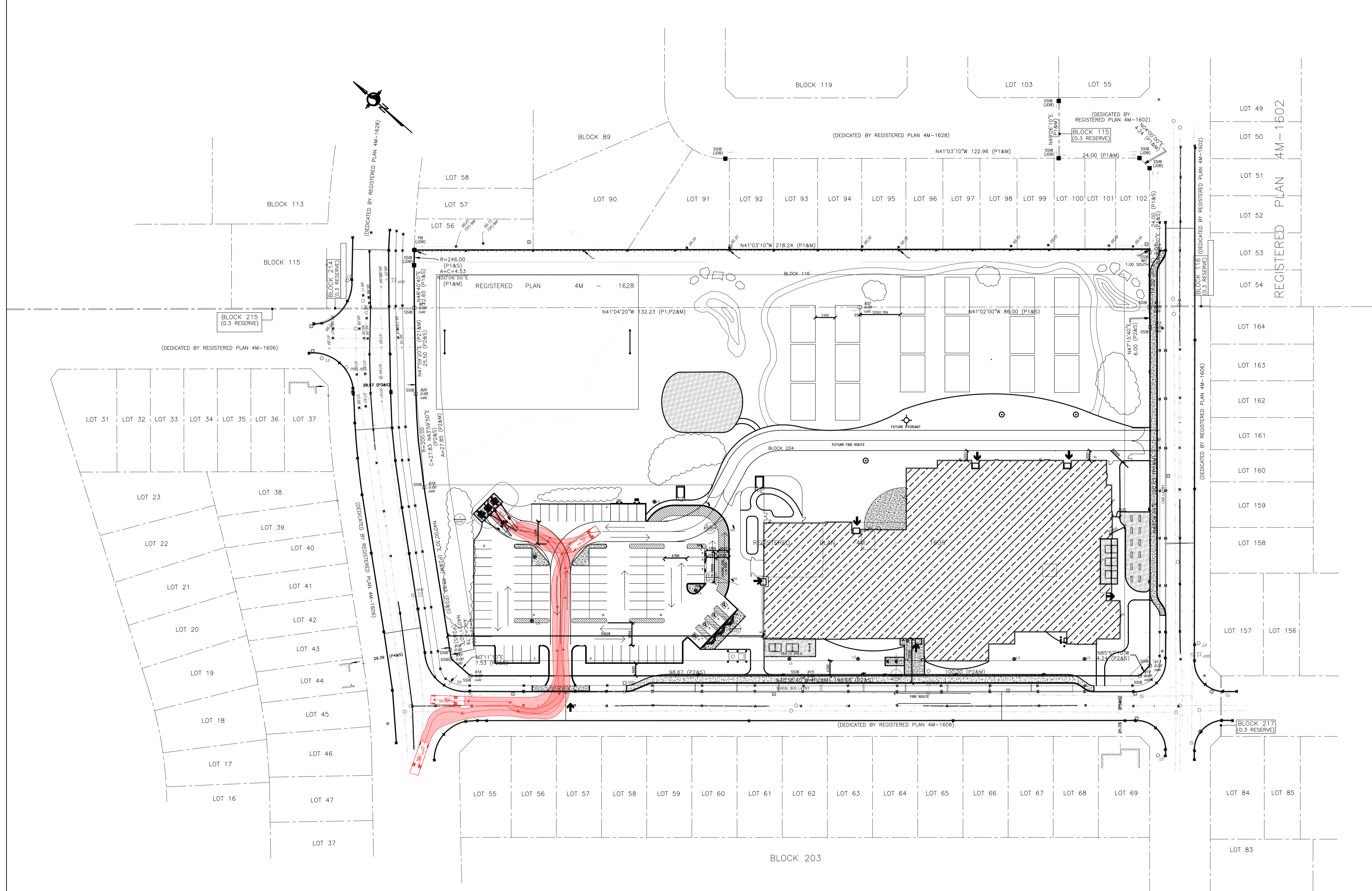
TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
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	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
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	<input type="checkbox"/>
<b>4.2 Carpool parking</b>		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	<input type="checkbox"/>
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/>
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces ( <i>see Zoning By-law Section 94</i> )	<input type="checkbox"/>
<b>5.2 Bikeshare station location</b>		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	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	<input checked="" type="checkbox"/>
<b>BASIC</b>	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	<input type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	<input type="checkbox"/>
<b>BETTER</b>	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking ( <i>see Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	<input type="checkbox"/>
<b>7. OTHER</b>		
<b>7.1 On-site amenities to minimize off-site trips</b>		
<b>BETTER</b>	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input type="checkbox"/>

**APPENDIX F**  
**Truck Turning Templates**







**AUTO TURN MOVEMENT**

MSU - TAC (2017) Scale: 1:600



**APPENDIX G**  
**TDM Measures checklist**

**TDM Measures Checklist:**  
*Non-Residential Developments (office, institutional, retail or industrial)*

<b>Legend</b>	
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	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: <i>Non-residential developments</i>		Check if proposed & add descriptions
<b>1. TDM PROGRAM MANAGEMENT</b>		
<b>1.1 Program coordinator</b>		
<b>BASIC</b>	★ 1.1.1 Designate an internal coordinator, or contract with an external coordinator	<input type="checkbox"/>
<b>1.2 Travel surveys</b>		
<b>BETTER</b>	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	<input type="checkbox"/>
<b>2. WALKING AND CYCLING</b>		
<b>2.1 Information on walking/cycling routes &amp; destinations</b>		
<b>BASIC</b>	2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	<input checked="" type="checkbox"/>
<b>2.2 Bicycle skills training</b>		
<i>Commuter travel</i>		
<b>BETTER</b>	★ 2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	<input checked="" type="checkbox"/>
<b>2.3 Valet bike parking</b>		
<i>Visitor travel</i>		
<b>BETTER</b>	2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	<input type="checkbox"/>

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

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

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

**APPENDIX H**  
**Traffic Analysis Reports**

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	174	0	4	175	18	2	2	2	40	3	20
Future Vol, veh/h	20	174	0	4	175	18	2	2	2	40	3	20
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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	5	0	0	7	6	2	2	2	8	33	5
Mvmt Flow	22	193	0	4	194	20	2	2	2	44	3	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	193	0	0	443	461	193	452	451	204
Stage 1	-	-	-	-	-	-	238	238	-	213	213	-
Stage 2	-	-	-	-	-	-	205	223	-	239	238	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.52	6.22	7.18	6.83	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.018	3.318	3.572	4.297	3.345
Pot Cap-1 Maneuver	1368	-	-	1392	-	-	525	497	848	508	460	829
Stage 1	-	-	-	-	-	-	765	708	-	775	672	-
Stage 2	-	-	-	-	-	-	797	719	-	751	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1368	-	-	1392	-	-	496	486	848	493	450	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	496	486	-	493	450	-
Stage 1	-	-	-	-	-	-	752	696	-	773	669	-
Stage 2	-	-	-	-	-	-	769	716	-	733	643	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.79			0.15			11.37			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	571	186	-	-	36	-	-	563
HCM Lane V/C Ratio	0.012	0.016	-	-	0.003	-	-	0.124
HCM Ctrl Dly (s/v)	11.4	7.7	0	-	7.6	0	-	12.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	174	3	20	7	0	8
Future Vol, veh/h	174	3	20	7	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	25	29	2	2
Mvmt Flow	193	3	22	8	0	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	197	0	247
Stage 1	-	-	-	-	195
Stage 2	-	-	-	-	52
Critical Hdwy	-	-	4.35	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.425	-	3.518
Pot Cap-1 Maneuver	-	-	1250	-	741
Stage 1	-	-	-	-	838
Stage 2	-	-	-	-	970
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1250	-	728
Mov Cap-2 Maneuver	-	-	-	-	728
Stage 1	-	-	-	-	838
Stage 2	-	-	-	-	953

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	5.88	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	846	-	-	1244	-
HCM Lane V/C Ratio	0.011	-	-	0.018	-
HCM Ctrl Dly (s/v)	9.3	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection												
Int Delay, s/veh	7.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	3	3	1	0	3	7	4	0	22	0
Future Vol, veh/h	0	5	3	3	1	0	3	7	4	0	22	0
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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	0	0	2	29	2	2	13	2
Mvmt Flow	0	6	3	3	1	0	3	8	4	0	24	0






















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	9	0	0	27	15	7	17	17	1
Stage 1	-	-	-	-	-	-	7	7	-	8	8	-
Stage 2	-	-	-	-	-	-	20	8	-	9	9	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.79	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.261	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1622	-	-	1624	-	-	983	829	1075	997	856	1083
Stage 1	-	-	-	-	-	-	1014	839	-	1014	868	-
Stage 2	-	-	-	-	-	-	999	838	-	1012	867	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1622	-	-	1624	-	-	953	827	1075	982	854	1083
Mov Cap-2 Maneuver	-	-	-	-	-	-	953	827	-	982	854	-
Stage 1	-	-	-	-	-	-	1014	839	-	1012	866	-
Stage 2	-	-	-	-	-	-	969	836	-	998	867	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	5.42	9.01	9.34
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	913	1622	-	-	1350	-	-	854
HCM Lane V/C Ratio	0.017	-	-	-	0.002	-	-	0.029
HCM Ctrl Dly (s/v)	9	0	-	-	7.2	0	-	9.3
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings  
 10: Terryfox Dr & Abbott St/Castlefrank Rd

Existing (2025)  
 PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	58	94	95	87	56	68	662	108	92	789	263
Future Volume (vph)	213	58	94	95	87	56	68	662	108	92	789	263
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.942			0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	1611	0	1729	1579	0	1662	1764	0	1478	1784	1547
Flt Permitted	0.389			0.651			0.085			0.081		
Satd. Flow (perm)	708	1611	0	1185	1579	0	149	1764	0	126	1784	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			30			10				292
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	4%	0%	0%	22%	4%	1%	1%	17%	2%	0%
Adj. Flow (vph)	237	64	104	106	97	62	76	736	120	102	877	292
Shared Lane Traffic (%)												
Lane Group Flow (vph)	237	168	0	106	159	0	76	856	0	102	877	292
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Existing (2025)  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		11.0	47.0		11.0	47.0	47.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		11.0%	47.0%		11.0%	47.0%	47.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		6.0	40.7		6.0	40.7	40.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	27.8	27.8		14.8	14.8		55.5	47.1		58.7	50.4	50.4
Actuated g/C Ratio	0.28	0.28		0.15	0.15		0.56	0.47		0.59	0.50	0.50
v/c Ratio	0.87	0.33		0.61	0.61		0.40	1.03		0.55	0.98	0.32
Control Delay (s/veh)	61.1	14.2		53.4	41.7		16.8	66.0		26.7	52.4	3.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	61.1	14.2		53.4	41.7		16.8	66.0		26.7	52.4	3.2
LOS	E	B		D	D		B	E		C	D	A
Approach Delay (s/veh)		41.6			46.4			62.0			39.0	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	38.8	11.3		19.6	23.7		5.3	~176.3		7.3	~168.3	0.0
Queue Length 95th (m)	#62.2	24.8		34.0	40.7		14.4	#272.6		#28.0	#279.4	15.1
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	273	646		278	394		191	835		186	898	924
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.87	0.26		0.38	0.40		0.40	1.03		0.55	0.98	0.32

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 87 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

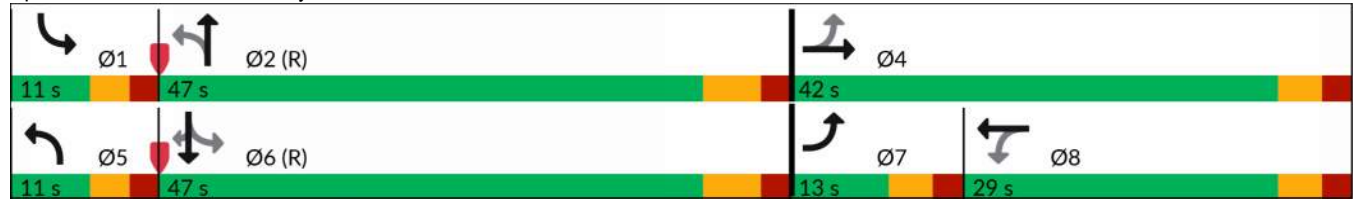
Intersection Signal Delay (s/veh): 47.5      Intersection LOS: D

Intersection Capacity Utilization 88.6%      ICU Level of Service E

Analysis Period (min) 15

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	241	2	6	172	37	2	3	3	29	2	30
Future Vol, veh/h	28	241	2	6	172	37	2	3	3	29	2	30
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	-	-	-	-	-	-	-	-	-	-	-	-
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, %	8	3	50	17	2	5	0	33	33	4	0	13
Mvmt Flow	31	268	2	7	191	41	2	3	3	32	2	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	232	0	0	270	0	0	537	577	269	557	557	212
Stage 1	-	-	-	-	-	-	331	331	-	225	225	-
Stage 2	-	-	-	-	-	-	206	246	-	332	332	-
Critical Hdwy	4.18	-	-	4.27	-	-	7.1	6.83	6.53	7.14	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Follow-up Hdwy	2.272	-	-	2.353	-	-	3.5	4.297	3.597	3.536	4	3.417
Pot Cap-1 Maneuver	1301	-	-	1212	-	-	458	388	701	438	441	802
Stage 1	-	-	-	-	-	-	686	593	-	773	721	-
Stage 2	-	-	-	-	-	-	801	649	-	678	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1212	-	-	422	375	701	417	426	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	422	375	-	417	426	-
Stage 1	-	-	-	-	-	-	667	577	-	768	717	-
Stage 2	-	-	-	-	-	-	760	645	-	652	630	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.81			0.22			12.81			12.51		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	470	186	-	-	49	-	-	547
HCM Lane V/C Ratio	0.019	0.024	-	-	0.006	-	-	0.124
HCM Ctrl Dly (s/v)	12.8	7.8	0	-	8	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	4.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	3	12	11	8	2	16
Future Vol, veh/h	3	12	11	8	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	18	2	13
Mvmt Flow	3	13	12	9	2	18

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	17	0	43
Stage 1	-	-	-	-	10
Stage 2	-	-	-	-	33
Critical Hdwy	-	-	4.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.2	-	3.518
Pot Cap-1 Maneuver	-	-	1614	-	967
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	989
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1614	-	960
Mov Cap-2 Maneuver	-	-	-	-	960
Stage 1	-	-	-	-	1013
Stage 2	-	-	-	-	982

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	4.2	8.56
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1031	-	-	1042	-
HCM Lane V/C Ratio	0.019	-	-	0.008	-
HCM Ctrl Dly (s/v)	8.6	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection													
Int Delay, s/veh	6.1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	2	3	3	6	6	9	2	13	8	0	15	0	
Future Vol, veh/h	2	3	3	6	6	9	2	13	8	0	15	0	
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	-	-	-	-	-	-	-	-	-	-	-	-	
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	0	0	0	2	8	2	2	13	2	
Mvmt Flow	2	3	3	7	7	10	2	14	9	0	17	0	

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	7	0	0	38	39	5	40	36	12
Stage 1	-	-	-	-	-	-	9	9	-	25	25	-
Stage 2	-	-	-	-	-	-	28	30	-	15	11	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.58	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.072	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1601	-	-	1627	-	-	967	841	1078	964	835	1069
Stage 1	-	-	-	-	-	-	1012	876	-	993	853	-
Stage 2	-	-	-	-	-	-	989	858	-	1005	865	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1601	-	-	1627	-	-	943	836	1078	935	831	1069
Mov Cap-2 Maneuver	-	-	-	-	-	-	943	836	-	935	831	-
Stage 1	-	-	-	-	-	-	1010	875	-	989	849	-
Stage 2	-	-	-	-	-	-	965	855	-	979	864	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.81			2.06			9.04			9.42		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	917	409	-	-	459	-	-	831
HCM Lane V/C Ratio	0.028	0.001	-	-	0.004	-	-	0.02
HCM Ctrl Dly (s/v)	9	7.3	0	-	7.2	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Existing (2025)  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	0	159	82	32	98	75	575	134	32	523	170
Future Volume (vph)	275	0	159	82	32	98	75	575	134	32	523	170
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.887			0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1532	0	1616	1583	0	1729	1635	0	1340	1767	1446
Flt Permitted	0.428			0.646			0.253			0.109		
Satd. Flow (perm)	756	1532	0	1099	1583	0	460	1635	0	154	1767	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		299			109			14				189
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	7%	1%	7%	2%	2%	0%	8%	9%	29%	3%	7%
Adj. Flow (vph)	306	0	177	91	36	109	83	639	149	36	581	189
Shared Lane Traffic (%)												
Lane Group Flow (vph)	306	177	0	91	145	0	83	788	0	36	581	189
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Existing (2025)  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		12.0	46.0		12.0	46.0	46.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		12.0%	46.0%		12.0%	46.0%	46.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		7.0	39.7		7.0	39.7	39.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	26.4	26.4		13.3	13.3		47.8	42.5		46.4	40.0	40.0
Actuated g/C Ratio	0.30	0.30		0.15	0.15		0.55	0.49		0.53	0.46	0.46
v/c Ratio	1.00	0.26		0.54	0.44		0.24	0.98		0.22	0.72	0.25
Control Delay (s/veh)	82.3	1.0		48.0	15.6		10.7	54.0		12.1	27.3	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	82.3	1.0		48.0	15.6		10.7	54.0		12.1	27.3	3.6
LOS	F	A		D	B		B	D		B	C	A
Approach Delay (s/veh)		52.5			28.1			49.9			21.1	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	~47.7	0.0		14.8	5.5		5.6	~147.9		2.4	79.3	0.0
Queue Length 95th (m)	#97.4	0.0		29.5	21.2		13.5	#241.6		7.2	#138.5	12.1
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	307	817		297	507		353	801		177	807	763
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	1.00	0.22		0.31	0.29		0.24	0.98		0.20	0.72	0.25

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 87.5

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 38.6      Intersection LOS: D

Intersection Capacity Utilization 87.7%      ICU Level of Service E

Analysis Period (min) 15

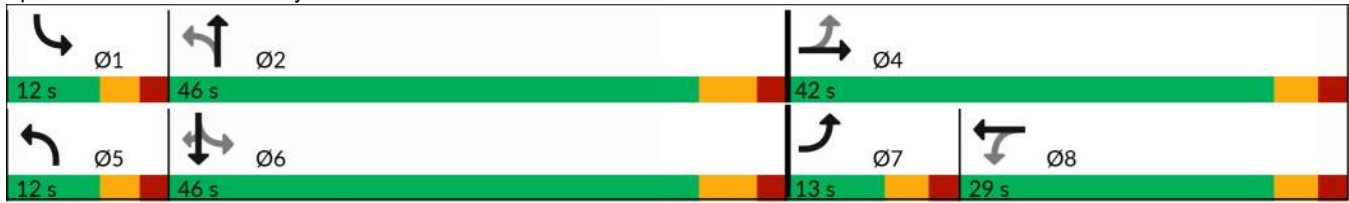
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Background  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	57	94	81	87	111	123	611	107	91	816	262
Future Volume (vph)	209	57	94	81	87	111	123	611	107	91	816	262
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.916			0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	1611	0	1729	1484	0	1662	1762	0	1478	1784	1547
Flt Permitted	0.320			0.661			0.083			0.173		
Satd. Flow (perm)	582	1611	0	1203	1484	0	145	1762	0	269	1784	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93			60			11				262
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	4%	0%	0%	22%	4%	1%	1%	17%	2%	0%
Adj. Flow (vph)	209	57	94	81	87	111	123	611	107	91	816	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	151	0	81	198	0	123	718	0	91	816	262
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Background  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		11.0	47.0		11.0	47.0	47.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		11.0%	47.0%		11.0%	47.0%	47.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		6.0	40.7		6.0	40.7	40.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	28.6	28.6		15.6	15.6		57.5	49.4		55.2	46.4	46.4
Actuated g/C Ratio	0.29	0.29		0.16	0.16		0.58	0.49		0.55	0.46	0.46
v/c Ratio	0.83	0.29		0.43	0.70		0.59	0.82		0.38	0.99	0.31
Control Delay (s/veh)	56.4	12.0		43.8	40.5		28.7	33.5		14.5	57.0	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	56.4	12.0		43.8	40.5		28.7	33.5		14.5	57.0	3.5
LOS	E	B		D	D		C	C		B	E	A
Approach Delay (s/veh)		37.8			41.4			32.8				41.7
Approach LOS		D			D			C				D
Queue Length 50th (m)	33.2	8.4		14.5	25.7		9.1	118.1		6.7	152.2	0.0
Queue Length 95th (m)	#52.4	20.5		26.3	44.8		#38.3	#211.7		16.1	#253.5	14.4
Internal Link Dist (m)		344.3			185.5			205.0				285.3
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	252	647		282	394		207	875		238	828	858
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.83	0.23		0.29	0.50		0.59	0.82		0.38	0.99	0.31

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 87 (87%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

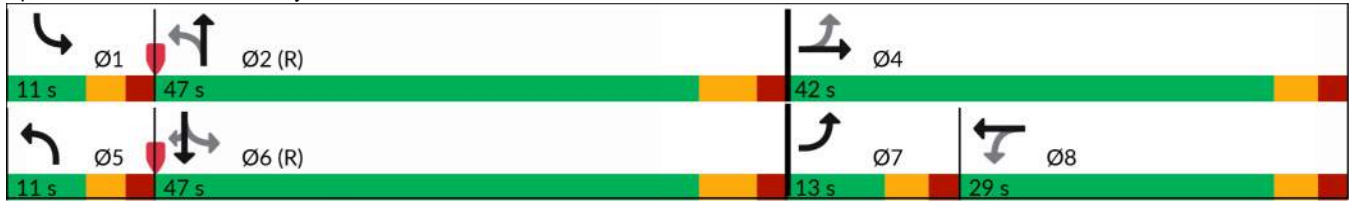
Intersection Signal Delay (s/veh): 38.3      Intersection LOS: D

Intersection Capacity Utilization 95.3%      ICU Level of Service F

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	241	2	6	180	37	2	3	3	29	2	30
Future Vol, veh/h	28	241	2	6	180	37	2	3	3	29	2	30
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	3	50	17	2	5	0	33	33	4	0	13
Mvmt Flow	28	241	2	6	180	37	2	3	3	29	2	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	243	0	0	525	527	242	512	510	199
Stage 1	-	-	-	-	-	-	298	298	-	211	211	-
Stage 2	-	-	-	-	-	-	227	229	-	301	299	-
Critical Hdwy	4.18	-	-	4.27	-	-	7.1	6.83	6.53	7.14	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Follow-up Hdwy	2.272	-	-	2.353	-	-	3.5	4.297	3.597	3.536	4	3.417
Pot Cap-1 Maneuver	1318	-	-	1240	-	-	466	415	726	469	469	815
Stage 1	-	-	-	-	-	-	715	614	-	787	731	-
Stage 2	-	-	-	-	-	-	780	661	-	704	670	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1318	-	-	1240	-	-	437	402	726	454	454	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	437	402	-	454	454	-
Stage 1	-	-	-	-	-	-	697	599	-	767	727	-
Stage 2	-	-	-	-	-	-	745	657	-	680	653	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.2			12.4			11.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	495	1318	-	-	1240	-	-	580
HCM Lane V/C Ratio	0.016	0.021	-	-	0.005	-	-	0.105
HCM Ctrl Dly (s/v)	12.4	7.8	0	-	7.9	0	-	11.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0	0.1	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	175	12	11	73	2	16
Future Vol, veh/h	175	12	11	73	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	18	2	13
Mvmt Flow	175	12	11	73	2	16

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	187	0	276 181
Stage 1	-	-	-	-	181 -
Stage 2	-	-	-	-	95 -
Critical Hdwy	-	-	4.1	-	6.42 6.33
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.2	-	3.518 3.417
Pot Cap-1 Maneuver	-	-	1399	-	714 834
Stage 1	-	-	-	-	850 -
Stage 2	-	-	-	-	929 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1399	-	708 834
Mov Cap-2 Maneuver	-	-	-	-	708 -
Stage 1	-	-	-	-	850 -
Stage 2	-	-	-	-	922 -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	818	-	-	1399	-
HCM Lane V/C Ratio	0.022	-	-	0.008	-
HCM Ctrl Dly (s/v)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0	-

Intersection													
Int Delay, s/veh	6.1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	2	3	3	6	6	9	2	13	8	0	15	0	
Future Vol, veh/h	2	3	3	6	6	9	2	13	8	0	15	0	
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	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	
Heavy Vehicles, %	2	2	2	0	0	0	2	8	2	2	13	2	
Mvmt Flow	2	3	3	6	6	9	2	13	8	0	15	0	

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	6	0	0	39	36	5	42	33	11
Stage 1	-	-	-	-	-	-	9	9	-	23	23	-
Stage 2	-	-	-	-	-	-	30	27	-	19	10	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.58	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.072	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1603	-	-	1628	-	-	966	845	1078	961	838	1070
Stage 1	-	-	-	-	-	-	1012	876	-	995	855	-
Stage 2	-	-	-	-	-	-	987	861	-	1000	866	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1603	-	-	1628	-	-	950	841	1078	939	834	1070
Mov Cap-2 Maneuver	-	-	-	-	-	-	950	841	-	939	834	-
Stage 1	-	-	-	-	-	-	1011	875	-	994	852	-
Stage 2	-	-	-	-	-	-	966	858	-	977	865	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.8			2.1			9			9.4		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	921	1603	-	-	1628	-	-	834
HCM Lane V/C Ratio	0.025	0.001	-	-	0.004	-	-	0.018
HCM Ctrl Dly (s/v)	9	7.2	0	-	7.2	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	18	0	0	23
Future Vol, veh/h	0	0	18	0	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	0	0	18	0	0	23






















Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	41	18	0	0	18	0
Stage 1	18	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	970	1061	-	-	1599	-
Stage 1	1005	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	970	1061	-	-	1599	-
Mov Cap-2 Maneuver	970	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1599
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Background  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	0	160	74	32	101	75	579	133	32	540	169
Future Volume (vph)	268	0	160	74	32	101	75	579	133	32	540	169
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.886			0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1532	0	1616	1581	0	1729	1635	0	1340	1767	1446
Flt Permitted	0.441			0.656			0.293			0.180		
Satd. Flow (perm)	779	1532	0	1116	1581	0	533	1635	0	254	1767	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		319			101			14				169
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	7%	1%	7%	2%	2%	0%	8%	9%	29%	3%	7%
Adj. Flow (vph)	268	0	160	74	32	101	75	579	133	32	540	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	160	0	74	133	0	75	712	0	32	540	169
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Background  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		12.0	46.0		12.0	46.0	46.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		12.0%	46.0%		12.0%	46.0%	46.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		7.0	39.7		7.0	39.7	39.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	25.3	25.3		12.2	12.2		47.8	42.4		46.3	39.9	39.9
Actuated g/C Ratio	0.29	0.29		0.14	0.14		0.55	0.49		0.54	0.46	0.46
v/c Ratio	0.88	0.24		0.47	0.43		0.19	0.88		0.15	0.66	0.22
Control Delay (s/veh)	57.6	0.8		45.6	16.2		9.5	36.0		9.8	24.2	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	57.6	0.8		45.6	16.2		9.5	36.0		9.8	24.2	3.5
LOS	E	A		D	B		A	D		A	C	A
Approach Delay (s/veh)		36.4			26.7			33.5			18.8	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	38.7	0.0		11.8	4.9		4.7	107.4		2.0	68.8	0.0
Queue Length 95th (m)	#78.6	0.0		25.0	20.2		11.7	#201.8		6.2	116.2	11.2
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	306	835		306	506		392	811		225	817	760
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.88	0.19		0.24	0.26		0.19	0.88		0.14	0.66	0.22

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 28.4      Intersection LOS: C

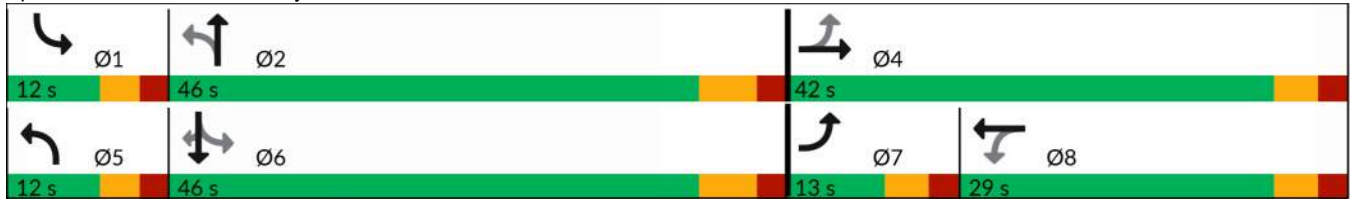
Intersection Capacity Utilization 87.5%      ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	174	0	4	183	18	2	2	6	40	3	20
Future Vol, veh/h	20	174	0	4	183	18	2	2	6	40	3	20
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	0	0	7	6	2	2	2	8	33	5
Mvmt Flow	20	174	0	4	183	18	2	2	6	40	3	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	201	0	0	174	0	0	426	423	174	418	414	192
Stage 1	-	-	-	-	-	-	214	214	-	200	200	-
Stage 2	-	-	-	-	-	-	212	209	-	218	214	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.52	6.22	7.18	6.83	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.018	3.318	3.572	4.297	3.345
Pot Cap-1 Maneuver	1383	-	-	1415	-	-	539	522	869	535	484	842
Stage 1	-	-	-	-	-	-	788	725	-	788	681	-
Stage 2	-	-	-	-	-	-	790	729	-	771	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1383	-	-	1415	-	-	516	512	869	522	475	842
Mov Cap-2 Maneuver	-	-	-	-	-	-	516	512	-	522	475	-
Stage 1	-	-	-	-	-	-	775	713	-	775	679	-
Stage 2	-	-	-	-	-	-	766	727	-	751	660	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.1			10.4			11.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1383	-	-	1415	-	-	590
HCM Lane V/C Ratio	0.015	0.014	-	-	0.003	-	-	0.107
HCM Ctrl Dly (s/v)	10.4	7.6	0	-	7.6	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	153	3	20	116	0	8
Future Vol, veh/h	153	3	20	116	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	25	29	2	2
Mvmt Flow	153	3	20	116	0	8

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	156	0	311 155
Stage 1	-	-	-	-	155 -
Stage 2	-	-	-	-	156 -
Critical Hdwy	-	-	4.35	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.425	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1295	-	681 891
Stage 1	-	-	-	-	873 -
Stage 2	-	-	-	-	872 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1295	-	669 891
Mov Cap-2 Maneuver	-	-	-	-	669 -
Stage 1	-	-	-	-	873 -
Stage 2	-	-	-	-	857 -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	891	-	-	1295	-
HCM Lane V/C Ratio	0.009	-	-	0.015	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Intersection													
Int Delay, s/veh	7.3												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	0	5	3	3	1	0	3	7	4	0	22	0	
Future Vol, veh/h	0	5	3	3	1	0	3	7	4	0	22	0	
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	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	
Heavy Vehicles, %	2	2	2	0	0	0	2	29	2	2	13	2	
Mvmt Flow	0	5	3	3	1	0	3	7	4	0	22	0	

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	8	0	0	25	14	7	19	15	1
Stage 1	-	-	-	-	-	-	7	7	-	7	7	-
Stage 2	-	-	-	-	-	-	18	7	-	12	8	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.79	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.261	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1622	-	-	1625	-	-	986	830	1075	995	858	1084
Stage 1	-	-	-	-	-	-	1015	839	-	1015	868	-
Stage 2	-	-	-	-	-	-	1001	839	-	1009	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1625	-	-	965	828	1075	983	856	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	965	828	-	983	856	-
Stage 1	-	-	-	-	-	-	1015	839	-	1015	866	-
Stage 2	-	-	-	-	-	-	974	837	-	997	868	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			5.4			9			9.3		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	916	1622	-	-	1625	-	-	856
HCM Lane V/C Ratio	0.015	-	-	-	0.002	-	-	0.026
HCM Ctrl Dly (s/v)	9	0	-	-	7.2	0	-	9.3
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	7	0	0	22
Future Vol, veh/h	0	0	7	0	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	0	0	7	0	0	22

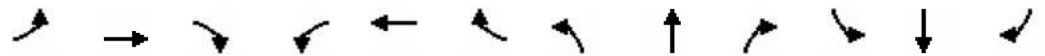
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	29	7	0	0	7
Stage 1	7	-	-	-	-
Stage 2	22	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	986	1075	-	-	1614
Stage 1	1016	-	-	-	-
Stage 2	1001	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	986	1075	-	-	1614
Mov Cap-2 Maneuver	986	-	-	-	-
Stage 1	1016	-	-	-	-
Stage 2	1001	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1614	-
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	-
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	-

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Background  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	54	96	75	85	108	121	633	102	87	933	257
Future Volume (vph)	189	54	96	75	85	108	121	633	102	87	933	257
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.904			0.916			0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	1604	0	1729	1484	0	1662	1764	0	1478	1784	1547
Flt Permitted	0.292			0.662			0.063			0.221		
Satd. Flow (perm)	531	1604	0	1205	1484	0	110	1764	0	344	1784	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			49			10				257
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	4%	0%	0%	22%	4%	1%	1%	17%	2%	0%
Adj. Flow (vph)	189	54	96	75	85	108	121	633	102	87	933	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	150	0	75	193	0	121	735	0	87	933	257
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Background  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	12.5	40.0		27.5	27.5		10.0	65.0		10.0	65.0	65.0
Total Split (%)	10.9%	34.8%		23.9%	23.9%		8.7%	56.5%		8.7%	56.5%	56.5%
Maximum Green (s)	7.0	34.5		22.0	22.0		5.0	58.7		5.0	58.7	58.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	28.9	28.9		16.4	16.4		72.6	64.9		68.9	61.0	61.0
Actuated g/C Ratio	0.25	0.25		0.14	0.14		0.63	0.56		0.60	0.53	0.53
v/c Ratio	0.92	0.32		0.44	0.76		0.67	0.74		0.32	0.99	0.27
Control Delay (s/veh)	83.0	17.7		51.7	53.6		39.8	26.0		11.7	54.2	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	83.0	17.7		51.7	53.6		39.8	26.0		11.7	54.2	2.6
LOS	F	B		D	D		D	C		B	D	A
Approach Delay (s/veh)		54.1			53.1			27.9			40.9	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	35.7	12.3		15.6	31.5		11.6	125.9		6.6	~224.0	0.0
Queue Length 95th (m)	#67.4	27.8		29.1	54.0		#50.0	187.1		14.4	#299.0	12.4
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	206	537		230	323		181	999		270	946	941
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.92	0.28		0.33	0.60		0.67	0.74		0.32	0.99	0.27

**Intersection Summary**

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 39.7      Intersection LOS: D

Intersection Capacity Utilization 100.3%      ICU Level of Service G

Analysis Period (min) 15

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	243	2	6	218	37	2	3	3	29	2	30
Future Vol, veh/h	28	243	2	6	218	37	2	3	3	29	2	30
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	3	50	17	2	5	0	33	33	4	0	13
Mvmt Flow	28	243	2	6	218	37	2	3	3	29	2	30

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	255	0	0	245	0	0	565	567	244	552	550	237
Stage 1	-	-	-	-	-	-	300	300	-	249	249	-
Stage 2	-	-	-	-	-	-	265	267	-	303	301	-
Critical Hdwy	4.18	-	-	4.27	-	-	7.1	6.83	6.53	7.14	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Follow-up Hdwy	2.272	-	-	2.353	-	-	3.5	4.297	3.597	3.536	4	3.417
Pot Cap-1 Maneuver	1276	-	-	1238	-	-	439	393	724	441	446	776
Stage 1	-	-	-	-	-	-	713	613	-	751	704	-
Stage 2	-	-	-	-	-	-	745	635	-	702	669	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1276	-	-	1238	-	-	410	381	724	426	432	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	410	381	-	426	432	-
Stage 1	-	-	-	-	-	-	695	598	-	732	700	-
Stage 2	-	-	-	-	-	-	710	631	-	678	652	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	0.8		0.2		12.7		12.4	
HCM LOS					B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	473	1276	-	-	1238	-	-	548
HCM Lane V/C Ratio	0.017	0.022	-	-	0.005	-	-	0.111
HCM Ctrl Dly (s/v)	12.7	7.9	0	-	7.9	0	-	12.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0.1	0.1	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	195	12	11	80	2	16
Future Vol, veh/h	195	12	11	80	2	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	18	2	13
Mvmt Flow	195	12	11	80	2	16

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	207	0	303
Stage 1	-	-	-	-	201
Stage 2	-	-	-	-	102
Critical Hdwy	-	-	4.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.2	-	3.518
Pot Cap-1 Maneuver	-	-	1376	-	689
Stage 1	-	-	-	-	833
Stage 2	-	-	-	-	922
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1376	-	683
Mov Cap-2 Maneuver	-	-	-	-	683
Stage 1	-	-	-	-	833
Stage 2	-	-	-	-	915

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.9	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	796	-	-	1376	-
HCM Lane V/C Ratio	0.023	-	-	0.008	-
HCM Ctrl Dly (s/v)	9.6	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0.1	-	-	0	-

Intersection													
Int Delay, s/veh	6.1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	2	3	3	6	6	9	2	13	8	0	15	0	
Future Vol, veh/h	2	3	3	6	6	9	2	13	8	0	15	0	
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	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	
Heavy Vehicles, %	2	2	2	0	0	0	2	8	2	2	13	2	
Mvmt Flow	2	3	3	6	6	9	2	13	8	0	15	0	

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	6	0	0	39	36	5	42	33	11
Stage 1	-	-	-	-	-	-	9	9	-	23	23	-
Stage 2	-	-	-	-	-	-	30	27	-	19	10	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.58	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.072	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1603	-	-	1628	-	-	966	845	1078	961	838	1070
Stage 1	-	-	-	-	-	-	1012	876	-	995	855	-
Stage 2	-	-	-	-	-	-	987	861	-	1000	866	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1603	-	-	1628	-	-	950	841	1078	939	834	1070
Mov Cap-2 Maneuver	-	-	-	-	-	-	950	841	-	939	834	-
Stage 1	-	-	-	-	-	-	1011	875	-	994	852	-
Stage 2	-	-	-	-	-	-	966	858	-	977	865	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.8			2.1			9			9.4		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	921	1603	-	-	1628	-	-	834
HCM Lane V/C Ratio	0.025	0.001	-	-	0.004	-	-	0.018
HCM Ctrl Dly (s/v)	9	7.2	0	-	7.2	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	18	0	0	23
Future Vol, veh/h	0	0	18	0	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	0	0	18	0	0	23

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	41	18	0	0	18	0
Stage 1	18	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	970	1061	-	-	1599	-
Stage 1	1005	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	970	1061	-	-	1599	-
Mov Cap-2 Maneuver	970	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1599
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	-	0

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Background  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	0	162	70	31	106	73	600	127	30	613	166
Future Volume (vph)	241	0	162	70	31	106	73	600	127	30	613	166
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.884			0.974				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1532	0	1616	1577	0	1729	1639	0	1340	1767	1446
Flt Permitted	0.404			0.644			0.174			0.098		
Satd. Flow (perm)	714	1532	0	1095	1577	0	317	1639	0	138	1767	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		259			118			13				184
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	7%	1%	7%	2%	2%	0%	8%	9%	29%	3%	7%
Adj. Flow (vph)	268	0	180	78	34	118	81	667	141	33	681	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	268	180	0	78	152	0	81	808	0	33	681	184
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Background  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		12.0	46.0		12.0	46.0	46.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		12.0%	46.0%		12.0%	46.0%	46.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		7.0	39.7		7.0	39.7	39.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	25.6	25.6		12.5	12.5		47.8	42.5		46.3	40.0	40.0
Actuated g/C Ratio	0.30	0.30		0.14	0.14		0.55	0.49		0.53	0.46	0.46
v/c Ratio	0.91	0.28		0.50	0.46		0.29	1.00		0.21	0.84	0.24
Control Delay (s/veh)	64.2	1.8		46.5	15.7		11.2	56.9		11.6	33.3	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	64.2	1.8		46.5	15.7		11.2	56.9		11.6	33.3	3.5
LOS	E	A		D	B		B	E		B	C	A
Approach Delay (s/veh)		39.1			26.1			52.7			26.4	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	38.7	0.0		12.5	5.2		5.2	~151.1		2.1	99.0	0.0
Queue Length 95th (m)	#81.6	3.2		26.1	21.4		12.7	#243.6		6.5	#182.4	11.7
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	294	798		298	516		289	810		171	814	765
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.91	0.23		0.26	0.29		0.28	1.00		0.19	0.84	0.24

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.7

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 38.2      Intersection LOS: D

Intersection Capacity Utilization 86.9%      ICU Level of Service E

Analysis Period (min) 15

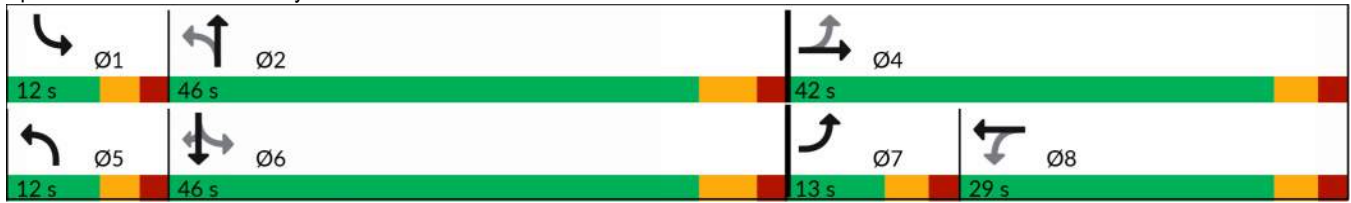
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	176	0	4	221	18	2	2	6	40	3	20
Future Vol, veh/h	20	176	0	4	221	18	2	2	6	40	3	20
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	0	0	7	6	2	2	2	8	33	5
Mvmt Flow	20	176	0	4	221	18	2	2	6	40	3	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	176	0	0	466	463	176	458	454	230
Stage 1	-	-	-	-	-	-	216	216	-	238	238	-
Stage 2	-	-	-	-	-	-	250	247	-	220	216	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.52	6.22	7.18	6.83	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.018	3.318	3.572	4.297	3.345
Pot Cap-1 Maneuver	1340	-	-	1412	-	-	507	496	867	503	459	802
Stage 1	-	-	-	-	-	-	786	724	-	752	655	-
Stage 2	-	-	-	-	-	-	754	702	-	769	670	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1340	-	-	1412	-	-	484	486	867	490	450	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	484	486	-	490	450	-
Stage 1	-	-	-	-	-	-	773	712	-	739	653	-
Stage 2	-	-	-	-	-	-	730	700	-	749	659	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.1			10.5			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	659	1340	-	-	1412	-	-	556
HCM Lane V/C Ratio	0.015	0.015	-	-	0.003	-	-	0.113
HCM Ctrl Dly (s/v)	10.5	7.7	0	-	7.6	0	-	12.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	169	3	20	128	0	8
Future Vol, veh/h	169	3	20	128	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	25	29	2	2
Mvmt Flow	169	3	20	128	0	8

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	172	0	339
Stage 1	-	-	-	-	171
Stage 2	-	-	-	-	168
Critical Hdwy	-	-	4.35	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.425	-	3.518
Pot Cap-1 Maneuver	-	-	1277	-	657
Stage 1	-	-	-	-	859
Stage 2	-	-	-	-	862
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1277	-	646
Mov Cap-2 Maneuver	-	-	-	-	646
Stage 1	-	-	-	-	859
Stage 2	-	-	-	-	847

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	873	-	-	1277	-
HCM Lane V/C Ratio	0.009	-	-	0.016	-
HCM Ctrl Dly (s/v)	9.2	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Intersection													
Int Delay, s/veh	7.3												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕			↕		
Traffic Vol, veh/h	0	5	3	3	1	0	3	7	4	0	22	0	
Future Vol, veh/h	0	5	3	3	1	0	3	7	4	0	22	0	
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	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100	
Heavy Vehicles, %	2	2	2	0	0	0	2	29	2	2	13	2	
Mvmt Flow	0	5	3	3	1	0	3	7	4	0	22	0	

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	8	0	0	25	14	7	19	15	1
Stage 1	-	-	-	-	-	-	7	7	-	7	7	-
Stage 2	-	-	-	-	-	-	18	7	-	12	8	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.79	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.261	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1622	-	-	1625	-	-	986	830	1075	995	858	1084
Stage 1	-	-	-	-	-	-	1015	839	-	1015	868	-
Stage 2	-	-	-	-	-	-	1001	839	-	1009	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1622	-	-	1625	-	-	965	828	1075	983	856	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	965	828	-	983	856	-
Stage 1	-	-	-	-	-	-	1015	839	-	1015	866	-
Stage 2	-	-	-	-	-	-	974	837	-	997	868	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			5.4			9			9.3		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	916	1622	-	-	1625	-	-	856
HCM Lane V/C Ratio	0.015	-	-	-	0.002	-	-	0.026
HCM Ctrl Dly (s/v)	9	0	-	-	7.2	0	-	9.3
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	0	0	7	0	0	23
Future Vol, veh/h	0	0	7	0	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	0	0	7	0	0	23






















Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	30	7	0	0	7	0
Stage 1	7	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	984	1075	-	-	1614	-
Stage 1	1016	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	984	1075	-	-	1614	-
Mov Cap-2 Maneuver	984	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1614	-
HCM Lane V/C Ratio	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	-
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0	-

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Total  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	274	0	160	74	32	101	80	579	133	32	540	182
Future Volume (vph)	274	0	160	74	32	101	80	579	133	32	540	182
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.886			0.972				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1532	0	1616	1581	0	1729	1635	0	1340	1767	1446
Flt Permitted	0.441			0.656			0.294			0.181		
Satd. Flow (perm)	779	1532	0	1116	1581	0	535	1635	0	255	1767	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		319			101			14				182
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	7%	1%	7%	2%	2%	0%	8%	9%	29%	3%	7%
Adj. Flow (vph)	274	0	160	74	32	101	80	579	133	32	540	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	274	160	0	74	133	0	80	712	0	32	540	182
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Total  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		12.0	46.0		12.0	46.0	46.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		12.0%	46.0%		12.0%	46.0%	46.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		7.0	39.7		7.0	39.7	39.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	25.2	25.2		12.2	12.2		47.8	42.5		46.3	39.9	39.9
Actuated g/C Ratio	0.29	0.29		0.14	0.14		0.55	0.49		0.54	0.46	0.46
v/c Ratio	0.90	0.24		0.47	0.43		0.21	0.88		0.15	0.66	0.24
Control Delay (s/veh)	60.8	0.8		45.6	16.2		9.6	36.0		9.8	24.2	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	60.8	0.8		45.6	16.2		9.6	36.0		9.8	24.2	3.5
LOS	E	A		D	B		A	D		A	C	A
Approach Delay (s/veh)		38.7			26.7			33.3			18.6	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	39.8	0.0		11.8	4.9		5.1	107.4		2.0	68.8	0.0
Queue Length 95th (m)	#81.7	0.0		25.0	20.2		12.3	#201.8		6.2	116.2	11.5
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	306	835		305	506		393	811		226	817	766
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.90	0.19		0.24	0.26		0.20	0.88		0.14	0.66	0.24

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay (s/veh): 28.7      Intersection LOS: C

Intersection Capacity Utilization 87.8%      ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



HCM 6th TWSC  
3: Triangle St & Abbott St E

Future (2027) Total  
AM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	178	0	4	183	28	2	5	6	45	4	29
Future Vol, veh/h	20	178	0	4	183	28	2	5	6	45	4	29
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	0	0	7	6	2	2	2	8	33	5
Mvmt Flow	20	178	0	4	183	28	2	5	6	45	4	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	211	0	0	178	0	0	440	437	178	429	423	197
Stage 1	-	-	-	-	-	-	218	218	-	205	205	-
Stage 2	-	-	-	-	-	-	222	219	-	224	218	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.52	6.22	7.18	6.83	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.018	3.318	3.572	4.297	3.345
Pot Cap-1 Maneuver	1372	-	-	1410	-	-	527	513	865	526	478	837
Stage 1	-	-	-	-	-	-	784	723	-	783	678	-
Stage 2	-	-	-	-	-	-	780	722	-	765	668	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1372	-	-	1410	-	-	498	503	865	511	469	837
Mov Cap-2 Maneuver	-	-	-	-	-	-	498	503	-	511	469	-
Stage 1	-	-	-	-	-	-	771	711	-	770	676	-
Stage 2	-	-	-	-	-	-	746	720	-	742	657	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.1			10.9			12		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	622	1372	-	-	1410	-	-	594
HCM Lane V/C Ratio	0.021	0.015	-	-	0.003	-	-	0.131
HCM Ctrl Dly (s/v)	10.9	7.7	0	-	7.6	0	-	12
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.5

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	169	30	27	116	45	10
Future Vol, veh/h	169	30	27	116	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	25	29	2	2
Mvmt Flow	169	30	27	116	45	10

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	199	0	354 184
Stage 1	-	-	-	-	184 -
Stage 2	-	-	-	-	170 -
Critical Hdwy	-	-	4.35	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.425	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1247	-	644 858
Stage 1	-	-	-	-	848 -
Stage 2	-	-	-	-	860 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1247	-	629 858
Mov Cap-2 Maneuver	-	-	-	-	629 -
Stage 1	-	-	-	-	848 -
Stage 2	-	-	-	-	840 -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.5	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	661	-	-	1247	-
HCM Lane V/C Ratio	0.083	-	-	0.022	-
HCM Ctrl Dly (s/v)	10.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.3	-	-	0.1	-

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	5	3	6	20	17	3	20	4	0	34	0
Future Vol, veh/h	15	5	3	6	20	17	3	20	4	0	34	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	0	0	0	2	29	2	2	13	2
Mvmt Flow	15	5	3	6	20	17	3	20	4	0	34	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	8	0	0	95	86	7	90	79	29
Stage 1	-	-	-	-	-	-	37	37	-	41	41	-
Stage 2	-	-	-	-	-	-	58	49	-	49	38	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.79	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.261	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1574	-	-	1625	-	-	888	756	1075	895	791	1046
Stage 1	-	-	-	-	-	-	978	814	-	974	839	-
Stage 2	-	-	-	-	-	-	954	804	-	964	842	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1574	-	-	1625	-	-	849	745	1075	865	780	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	849	745	-	865	780	-
Stage 1	-	-	-	-	-	-	968	806	-	964	836	-
Stage 2	-	-	-	-	-	-	912	801	-	927	834	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	4.8			1			9.7			9.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	792	1574	-	-	1625	-	-	780
HCM Lane V/C Ratio	0.034	0.01	-	-	0.004	-	-	0.044
HCM Ctrl Dly (s/v)	9.7	7.3	0	-	7.2	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	12	21	33	19	0	23
Future Vol, veh/h	12	21	33	19	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	12	21	33	19	0	23

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	66	43	0	0	52	0
Stage 1	43	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	939	1027	-	-	1554	-
Stage 1	979	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	939	1027	-	-	1554	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1554
HCM Lane V/C Ratio	-	-	0.033	-
HCM Ctrl Dly (s/v)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	0

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Total  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	57	94	81	87	111	125	611	107	91	816	267
Future Volume (vph)	222	57	94	81	87	111	125	611	107	91	816	267
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.916			0.978				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	1611	0	1729	1484	0	1662	1762	0	1478	1784	1547
Flt Permitted	0.299			0.661			0.090			0.206		
Satd. Flow (perm)	544	1611	0	1203	1484	0	158	1762	0	320	1784	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81			52			11				267
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	4%	0%	0%	22%	4%	1%	1%	17%	2%	0%
Adj. Flow (vph)	222	57	94	81	87	111	125	611	107	91	816	267
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	151	0	81	198	0	125	718	0	91	816	267
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Total  
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	14.0	42.0		28.0	28.0		10.0	58.0		10.0	58.0	58.0
Total Split (%)	12.7%	38.2%		25.5%	25.5%		9.1%	52.7%		9.1%	52.7%	52.7%
Maximum Green (s)	8.5	36.5		22.5	22.5		5.0	51.7		5.0	51.7	51.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	30.4	30.4		16.4	16.4		66.3	58.2		62.4	54.3	54.3
Actuated g/C Ratio	0.28	0.28		0.15	0.15		0.60	0.53		0.57	0.49	0.49
v/c Ratio	0.92	0.30		0.45	0.75		0.59	0.77		0.36	0.93	0.30
Control Delay (s/veh)	75.9	15.6		49.5	49.6		27.3	29.1		13.8	44.9	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	75.9	15.6		49.5	49.6		27.3	29.1		13.8	44.9	3.0
LOS	E	B		D	D		C	C		B	D	A
Approach Delay (s/veh)		51.5			49.6			28.9			33.0	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	39.6	11.4		16.1	30.4		10.0	124.0		7.2	165.1	0.0
Queue Length 95th (m)	#71.5	25.5		29.3	51.9		#33.3	#203.2		15.9	#249.8	13.3
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	241	588		246	344		211	937		253	880	899
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.92	0.26		0.33	0.58		0.59	0.77		0.36	0.93	0.30

**Intersection Summary**

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 36.0      Intersection LOS: D

Intersection Capacity Utilization 96.2%      ICU Level of Service F

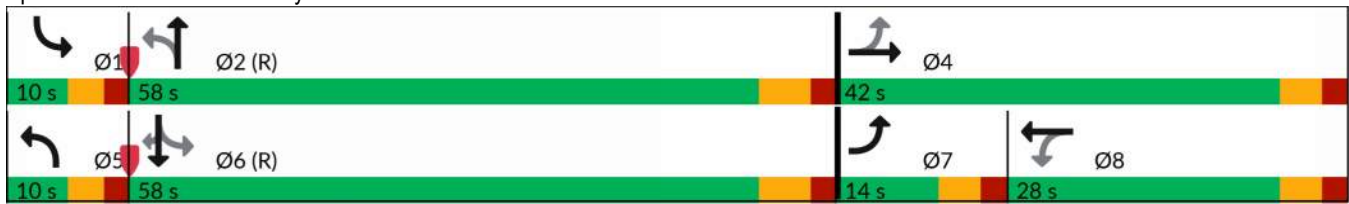
Analysis Period (min) 15

Lanes, Volumes, Timings  
 10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2027) Total  
 PM Peak Hour

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	245	2	6	180	39	2	6	3	40	5	38
Future Vol, veh/h	28	245	2	6	180	39	2	6	3	40	5	38
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	3	50	17	2	5	0	33	33	4	0	13
Mvmt Flow	28	245	2	6	180	39	2	6	3	40	5	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	219	0	0	247	0	0	535	533	246	519	515	200
Stage 1	-	-	-	-	-	-	302	302	-	212	212	-
Stage 2	-	-	-	-	-	-	233	231	-	307	303	-
Critical Hdwy	4.18	-	-	4.27	-	-	7.1	6.83	6.53	7.14	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Follow-up Hdwy	2.272	-	-	2.353	-	-	3.5	4.297	3.597	3.536	4	3.417
Pot Cap-1 Maneuver	1316	-	-	1236	-	-	459	412	723	464	466	814
Stage 1	-	-	-	-	-	-	712	612	-	786	731	-
Stage 2	-	-	-	-	-	-	775	659	-	699	667	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1316	-	-	1236	-	-	424	399	723	446	452	814
Mov Cap-2 Maneuver	-	-	-	-	-	-	424	399	-	446	452	-
Stage 1	-	-	-	-	-	-	694	597	-	766	727	-
Stage 2	-	-	-	-	-	-	729	655	-	672	650	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.2			13			12.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	460	1316	-	-	1236	-	-	563
HCM Lane V/C Ratio	0.024	0.021	-	-	0.005	-	-	0.147
HCM Ctrl Dly (s/v)	13	7.8	0	-	7.9	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0.1	0.1	-	-	0	-	-	0.5

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	192	32	13	73	58	21
Future Vol, veh/h	192	32	13	73	58	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	18	2	13
Mvmt Flow	192	32	13	73	58	21

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	224	0	307
Stage 1	-	-	-	-	208
Stage 2	-	-	-	-	99
Critical Hdwy	-	-	4.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.2	-	3.518
Pot Cap-1 Maneuver	-	-	1357	-	685
Stage 1	-	-	-	-	827
Stage 2	-	-	-	-	925
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1357	-	678
Mov Cap-2 Maneuver	-	-	-	-	678
Stage 1	-	-	-	-	827
Stage 2	-	-	-	-	916

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.2	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	708	-	-	1357	-
HCM Lane V/C Ratio	0.112	-	-	0.01	-
HCM Ctrl Dly (s/v)	10.7	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.4	-	-	0	-

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	3	3	8	25	27	2	18	8	0	35	0
Future Vol, veh/h	17	3	3	8	25	27	2	18	8	0	35	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	0	0	0	2	8	2	2	13	2
Mvmt Flow	17	3	3	8	25	27	2	18	8	0	35	0

Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	52	0	0	6	0	0	111	107	5	107	95	39
Stage 1	-	-	-	-	-	-	39	39	-	55	55	-
Stage 2	-	-	-	-	-	-	72	68	-	52	40	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.58	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.072	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1554	-	-	1628	-	-	867	772	1078	872	775	1033
Stage 1	-	-	-	-	-	-	976	851	-	957	828	-
Stage 2	-	-	-	-	-	-	938	827	-	961	840	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1554	-	-	1628	-	-	826	760	1078	840	763	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	826	760	-	840	763	-
Stage 1	-	-	-	-	-	-	965	842	-	946	824	-
Stage 2	-	-	-	-	-	-	894	823	-	923	831	-

Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	5.4		1			9.5			9.9			
HCM LOS						A			A			

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	835	1554	-	-	1628	-	-	763
HCM Lane V/C Ratio	0.034	0.011	-	-	0.005	-	-	0.046
HCM Ctrl Dly (s/v)	9.5	7.3	0	-	7.2	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Vol, veh/h	20	34	51	11	0	23
Future Vol, veh/h	20	34	51	11	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	20	34	51	11	0	23

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	80	57	0	0	62	0
Stage 1	57	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	922	1009	-	-	1541	-
Stage 1	966	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	922	1009	-	-	1541	-
Mov Cap-2 Maneuver	922	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	975	1541
HCM Lane V/C Ratio	-	-	0.055	-
HCM Ctrl Dly (s/v)	-	-	8.9	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Total  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	247	0	162	70	31	106	78	600	127	31	613	179
Future Volume (vph)	247	0	162	70	31	106	78	600	127	31	613	179
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.884			0.974				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1679	1532	0	1616	1577	0	1729	1639	0	1340	1767	1446
Flt Permitted	0.430			0.654			0.232			0.170		
Satd. Flow (perm)	760	1532	0	1112	1577	0	422	1639	0	240	1767	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		285			106			13				179
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	7%	1%	7%	2%	2%	0%	8%	9%	29%	3%	7%
Adj. Flow (vph)	247	0	162	70	31	106	78	600	127	31	613	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	162	0	70	137	0	78	727	0	31	613	179
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Total  
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	13.0	42.0		29.0	29.0		12.0	46.0		12.0	46.0	46.0
Total Split (%)	13.0%	42.0%		29.0%	29.0%		12.0%	46.0%		12.0%	46.0%	46.0%
Maximum Green (s)	7.5	36.5		23.5	23.5		7.0	39.7		7.0	39.7	39.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	25.0	25.0		11.9	11.9		47.8	42.5		46.3	39.9	39.9
Actuated g/C Ratio	0.29	0.29		0.14	0.14		0.56	0.49		0.54	0.46	0.46
v/c Ratio	0.82	0.25		0.45	0.44		0.23	0.89		0.15	0.75	0.23
Control Delay (s/veh)	50.6	0.9		45.2	16.0		9.9	37.4		9.7	27.6	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	50.6	0.9		45.2	16.0		9.9	37.4		9.7	27.6	3.5
LOS	D	A		D	B		A	D		A	C	A
Approach Delay (s/veh)		30.9			25.9			34.7			21.7	
Approach LOS		C			C			C			C	
Queue Length 50th (m)	35.2	0.0		11.1	4.7		4.9	110.5		1.9	82.4	0.0
Queue Length 95th (m)	#69.0	0.0		23.9	20.3		11.8	#206.0		6.0	#150.8	11.3
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	301	816		305	509		341	815		220	819	766
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.82	0.20		0.23	0.27		0.23	0.89		0.14	0.75	0.23

**Intersection Summary**

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 86.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay (s/veh): 28.4      Intersection LOS: C

Intersection Capacity Utilization 87.3%      ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



HCM 6th TWSC  
3: Triangle St & Abbott St E

Future (2032) Total  
AM Peak Hour

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	180	0	4	221	28	2	2	6	45	4	29
Future Vol, veh/h	20	180	0	4	221	28	2	2	6	45	4	29
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	5	0	0	7	6	2	2	2	8	33	5
Mvmt Flow	20	180	0	4	221	28	2	2	6	45	4	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	249	0	0	180	0	0	480	477	180	467	463	235
Stage 1	-	-	-	-	-	-	220	220	-	243	243	-
Stage 2	-	-	-	-	-	-	260	257	-	224	220	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.12	6.52	6.22	7.18	6.83	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.18	5.83	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.018	3.318	3.572	4.297	3.345
Pot Cap-1 Maneuver	1328	-	-	1408	-	-	496	487	863	496	453	797
Stage 1	-	-	-	-	-	-	782	721	-	747	651	-
Stage 2	-	-	-	-	-	-	745	695	-	765	667	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1328	-	-	1408	-	-	467	477	863	484	444	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	467	477	-	484	444	-
Stage 1	-	-	-	-	-	-	769	709	-	734	649	-
Stage 2	-	-	-	-	-	-	711	693	-	745	656	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.1			10.6			12.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	648	1328	-	-	1408	-	-	564
HCM Lane V/C Ratio	0.015	0.015	-	-	0.003	-	-	0.138
HCM Ctrl Dly (s/v)	10.6	7.8	0	-	7.6	0	-	12.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0	0	-	-	0	-	-	0.5

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	185	30	27	128	45	10
Future Vol, veh/h	185	30	27	128	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	25	29	2	2
Mvmt Flow	185	30	27	128	45	10

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	215	0	382 200
Stage 1	-	-	-	-	200 -
Stage 2	-	-	-	-	182 -
Critical Hdwy	-	-	4.35	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.425	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1230	-	620 841
Stage 1	-	-	-	-	834 -
Stage 2	-	-	-	-	849 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1230	-	605 841
Mov Cap-2 Maneuver	-	-	-	-	605 -
Stage 1	-	-	-	-	834 -
Stage 2	-	-	-	-	829 -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.4	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1230	-
HCM Lane V/C Ratio	0.086	-	-	0.022	-
HCM Ctrl Dly (s/v)	11.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.3	-	-	0.1	-

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	5	3	6	20	17	3	20	4	0	34	0
Future Vol, veh/h	15	5	3	6	20	17	3	20	4	0	34	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	0	0	0	2	29	2	2	13	2
Mvmt Flow	15	5	3	6	20	17	3	20	4	0	34	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	8	0	0	95	86	7	90	79	29
Stage 1	-	-	-	-	-	-	37	37	-	41	41	-
Stage 2	-	-	-	-	-	-	58	49	-	49	38	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.79	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.79	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.261	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1574	-	-	1625	-	-	888	756	1075	895	791	1046
Stage 1	-	-	-	-	-	-	978	814	-	974	839	-
Stage 2	-	-	-	-	-	-	954	804	-	964	842	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1574	-	-	1625	-	-	849	745	1075	865	780	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	849	745	-	865	780	-
Stage 1	-	-	-	-	-	-	968	806	-	964	836	-
Stage 2	-	-	-	-	-	-	912	801	-	927	834	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	4.8			1			9.7			9.8		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	792	1574	-	-	1625	-	-	780
HCM Lane V/C Ratio	0.034	0.01	-	-	0.004	-	-	0.044
HCM Ctrl Dly (s/v)	9.7	7.3	0	-	7.2	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	12	21	33	19	0	23
Future Vol, veh/h	12	21	33	19	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	12	21	33	19	0	23






















Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	66	43	0	0	52	0
Stage 1	43	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	939	1027	-	-	1554	-
Stage 1	979	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	939	1027	-	-	1554	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1554
HCM Lane V/C Ratio	-	-	0.033	-
HCM Ctrl Dly (s/v)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.1	0

Lanes, Volumes, Timings  
10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Total  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	54	96	75	85	108	123	633	102	87	933	262
Future Volume (vph)	202	54	96	75	85	108	123	633	102	87	933	262
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		15.0	45.0		0.0	70.0		0.0	125.0		125.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			15.0			70.0			40.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.904			0.916			0.979				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1729	1604	0	1729	1484	0	1662	1764	0	1478	1784	1547
Flt Permitted	0.292			0.662			0.063			0.221		
Satd. Flow (perm)	531	1604	0	1205	1484	0	110	1764	0	344	1784	1547
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			49			10				262
Link Speed (k/h)		40			40			80				80
Link Distance (m)		368.3			209.5			229.0				309.3
Travel Time (s)		33.1			18.9			10.3				13.9
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	4%	0%	0%	22%	4%	1%	1%	17%	2%	0%
Adj. Flow (vph)	202	54	96	75	85	108	123	633	102	87	933	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	150	0	75	193	0	123	735	0	87	933	262
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7				3.7
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		4.9			4.9			4.9				4.9
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1		6

Lanes, Volumes, Timings  
 10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Total  
 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		5.0	20.0		5.0	20.0	20.0
Minimum Split (s)	10.5	27.5		27.5	27.5		10.0	30.3		10.0	30.3	30.3
Total Split (s)	12.5	40.0		27.5	27.5		10.0	65.0		10.0	65.0	65.0
Total Split (%)	10.9%	34.8%		23.9%	23.9%		8.7%	56.5%		8.7%	56.5%	56.5%
Maximum Green (s)	7.0	34.5		22.0	22.0		5.0	58.7		5.0	58.7	58.7
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	4.2		3.0	4.2	4.2
All-Red Time (s)	2.2	2.2		2.2	2.2		2.0	2.1		2.0	2.1	2.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5		5.5	5.5		5.0	6.3		5.0	6.3	6.3
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	7.0
Flash Don't Walk (s)		15.0		15.0	15.0			17.0			17.0	17.0
Pedestrian Calls (#/hr)		0		0	0			0			0	0
Act Effct Green (s)	28.9	28.9		16.4	16.4		72.7	64.9		68.7	60.9	60.9
Actuated g/C Ratio	0.25	0.25		0.14	0.14		0.63	0.56		0.60	0.53	0.53
v/c Ratio	0.98	0.32		0.44	0.76		0.67	0.74		0.32	0.99	0.28
Control Delay (s/veh)	97.6	17.7		51.7	53.6		40.2	26.0		11.7	54.9	2.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	97.6	17.7		51.7	53.6		40.2	26.0		11.7	54.9	2.6
LOS	F	B		D	D		D	C		B	D	A
Approach Delay (s/veh)		63.5			53.1			28.0			41.3	
Approach LOS		E			D			C			D	
Queue Length 50th (m)	38.5	12.3		15.6	31.5		12.1	125.9		6.6	~224.0	0.0
Queue Length 95th (m)	#75.6	27.8		29.1	54.0		#51.5	187.1		14.4	#299.0	12.3
Internal Link Dist (m)		344.3			185.5			205.0			285.3	
Turn Bay Length (m)				45.0			70.0			125.0		125.0
Base Capacity (vph)	206	537		230	323		183	999		270	944	941
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.98	0.28		0.33	0.60		0.67	0.74		0.32	0.99	0.28

**Intersection Summary**

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 41.1      Intersection LOS: D

Intersection Capacity Utilization 101.1%      ICU Level of Service G

Analysis Period (min) 15

Lanes, Volumes, Timings  
 10: Terryfox Dr & Abbott St/Castlefrank Rd

Future (2032) Total  
 PM Peak Hour

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: Terryfox Dr & Abbott St/Castlefrank Rd



Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	247	2	6	218	39	2	6	3	29	2	30
Future Vol, veh/h	28	247	2	6	218	39	2	6	3	29	2	30
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	8	3	50	17	2	5	0	33	33	4	0	13
Mvmt Flow	28	247	2	6	218	39	2	6	3	29	2	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	257	0	0	249	0	0	570	573	248	559	555	238
Stage 1	-	-	-	-	-	-	304	304	-	250	250	-
Stage 2	-	-	-	-	-	-	266	269	-	309	305	-
Critical Hdwy	4.18	-	-	4.27	-	-	7.1	6.83	6.53	7.14	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.83	-	6.14	5.5	-
Follow-up Hdwy	2.272	-	-	2.353	-	-	3.5	4.297	3.597	3.536	4	3.417
Pot Cap-1 Maneuver	1274	-	-	1234	-	-	435	390	721	437	443	775
Stage 1	-	-	-	-	-	-	710	611	-	750	704	-
Stage 2	-	-	-	-	-	-	744	634	-	697	666	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1274	-	-	1234	-	-	407	378	721	420	429	775
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	378	-	420	429	-
Stage 1	-	-	-	-	-	-	692	595	-	731	700	-
Stage 2	-	-	-	-	-	-	709	630	-	669	649	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.8			0.2			13.4			12.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	441	1274	-	-	1234	-	-	543
HCM Lane V/C Ratio	0.025	0.022	-	-	0.005	-	-	0.112
HCM Ctrl Dly (s/v)	13.4	7.9	0	-	7.9	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q (veh)	0.1	0.1	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	212	32	13	80	58	21
Future Vol, veh/h	212	32	13	80	58	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	18	2	13
Mvmt Flow	212	32	13	80	58	21

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	244	0	334	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.1	-	6.42	6.33
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.2	-	3.518	3.417
Pot Cap-1 Maneuver	-	-	1334	-	661	785
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1334	-	654	785
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	1334	-
HCM Lane V/C Ratio	0.115	-	-	0.01	-
HCM Ctrl Dly (s/v)	10.9	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.4	-	-	0	-

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	3	3	8	25	27	2	18	8	0	35	0
Future Vol, veh/h	17	3	3	8	25	27	2	18	8	0	35	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	0	0	0	2	8	2	2	13	2
Mvmt Flow	17	3	3	8	25	27	2	18	8	0	35	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	52	0	0	6	0	0	111	107	5	107	95	39
Stage 1	-	-	-	-	-	-	39	39	-	55	55	-
Stage 2	-	-	-	-	-	-	72	68	-	52	40	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.12	6.58	6.22	7.12	6.63	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.58	-	6.12	5.63	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.518	4.072	3.318	3.518	4.117	3.318
Pot Cap-1 Maneuver	1554	-	-	1628	-	-	867	772	1078	872	775	1033
Stage 1	-	-	-	-	-	-	976	851	-	957	828	-
Stage 2	-	-	-	-	-	-	938	827	-	961	840	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1554	-	-	1628	-	-	826	760	1078	840	763	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	826	760	-	840	763	-
Stage 1	-	-	-	-	-	-	965	842	-	946	824	-
Stage 2	-	-	-	-	-	-	894	823	-	923	831	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	5.4	1	9.5	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	835	1554	-	-	1628	-	-	763
HCM Lane V/C Ratio	0.034	0.011	-	-	0.005	-	-	0.046
HCM Ctrl Dly (s/v)	9.5	7.3	0	-	7.2	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-	0.1


Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Vol, veh/h	20	34	51	11	22	23
Future Vol, veh/h	20	34	51	11	22	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	0	0	2	2
Mvmt Flow	20	34	51	11	22	23

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	124	57	0	0	62	0
Stage 1	57	-	-	-	-	-
Stage 2	67	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	871	1009	-	-	1541	-
Stage 1	966	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	859	1009	-	-	1541	-
Mov Cap-2 Maneuver	859	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	943	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	9	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	948	1541
HCM Lane V/C Ratio	-	-	0.057	0.014
HCM Ctrl Dly (s/v)	-	-	9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q (veh)	-	-	0.2	0

# LANE SUMMARY

 Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - Existing PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site  
Site Category: (None)  
Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Prob. Adj. Block.	
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]			%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	155	2.0	155	2.0	1065	0.145	100	4.1	LOS A	0.7	5.3	Full	500	0.0	0.0
Approach	155	2.0	155	2.0		0.145		4.1	LOS A	0.7	5.3				
East: Abbott Street E															
Lane 1 <sup>d</sup>	499	2.6	499	2.6	1363	0.366	100	5.8	LOS A	2.9	20.5	Full	500	0.0	0.0
Approach	499	2.6	499	2.6		0.366		5.8	LOS A	2.9	20.5				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	99	4.3	99	4.3	938	0.105	100	8.7	LOS A	0.5	3.8	Full	500	0.0	0.0
Approach	99	4.3	99	4.3		0.105		8.7	LOS A	0.5	3.8				
West: Abott Street E															
Lane 1 <sup>d</sup>	288	2.0	288	2.0	1079	0.267	100	5.6	LOS A	1.7	12.0	Full	500	0.0	0.0
Approach	288	2.0	288	2.0		0.267		5.6	LOS A	1.7	12.0				
All Vehicles	1041	2.5	1041	2.5		0.366		5.8	LOS A	2.9	20.5				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	44	22	87	155	2.0	1065	0.145	100	NA	NA	
Approach	1	44	22	87	155	2.0		0.145				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	5	135	263	96	499	2.6	1363	0.366	100	NA	NA	
Approach	5	135	263	96	499	2.6		0.366				
North: Cranesbill Road												


Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	55	25	18	99	4.3	938	0.105	100	NA	NA
Approach	1	55	25	18	99	4.3		0.105			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	3	238	46	288	2.0	1079	0.267	100	NA	NA
Approach	1	3	238	46	288	2.0		0.267			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1041	2.5		0.366							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

 Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - BG 2027 AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	225	4.7	225	4.7	1055	0.213	100	4.0	LOS A	1.1	8.2	Full	500	0.0	0.0
Approach	225	4.7	225	4.7		0.213		4.0	LOS A	1.1	8.2				
East: Abbott Street E															
Lane 1 <sup>d</sup>	292	7.7	292	7.7	1276	0.228	100	5.4	LOS A	1.5	11.4	Full	500	0.0	0.0
Approach	292	7.7	292	7.7		0.228		5.4	LOS A	1.5	11.4				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	142	2.4	142	2.4	1058	0.134	100	7.9	LOS A	0.7	4.7	Full	500	0.0	0.0
Approach	142	2.4	142	2.4		0.134		7.9	LOS A	0.7	4.7				
West: Abott Street E															
Lane 1 <sup>d</sup>	282	0.4	282	0.4	1155	0.244	100	5.1	LOS A	1.6	11.0	Full	500	0.0	0.0
Approach	282	0.4	282	0.4		0.244		5.1	LOS A	1.6	11.0				
All Vehicles	941	4.0	941	4.0		0.244		5.4	LOS A	1.6	11.4				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	46	21	157	225	4.7	1055	0.213	100	NA	NA	
Approach	1	46	21	157	225	4.7		0.213				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	56	191	44	292	7.7	1276	0.228	100	NA	NA	
Approach	1	56	191	44	292	7.7		0.228				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	76	36	29	142	2.4	1058	0.134	100	NA	NA
Approach	1	76	36	29	142	2.4		0.134			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	3	218	59	282	0.4	1155	0.244	100	NA	NA
Approach	2	3	218	59	282	0.4		0.244			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	941	4.0						0.244			

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Future Robert Grant Avenue at Cranesbill - BG  
2027 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
Site Category: (None)  
Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	751	2.0	751	2.0	1132	0.663	100	5.0	LOS A	6.4	45.8	Full	500	0.0	0.0
Approach	751	2.0	751	2.0		0.663		5.0	LOS A	6.4	45.8				
East: Abbott Street E															
Lane 1 <sup>d</sup>	78	2.0	78	2.0	543	0.143	100	13.0	LOS B	1.0	6.9	Full	500	0.0	0.0
Approach	78	2.0	78	2.0		0.143		13.0	LOS B	1.0	6.9				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	896	2.0	896	2.0	1366	0.656	100	6.0	LOS A	6.4	45.7	Full	500	0.0	0.0
Approach	896	2.0	896	2.0		0.656		6.0	LOS A	6.4	45.7				
West: Abott Street E															
Lane 1 <sup>d</sup>	124	2.4	124	2.4	553	0.225	100	15.2	LOS B	1.5	10.8	Full	500	0.0	0.0
Approach	124	2.4	124	2.4		0.225		15.2	LOS B	1.5	10.8				
All Vehicles	1848	2.0	1848	2.0		0.663		6.5	LOS A	6.4	45.8				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	54	669	26	751	2.0	1132	0.663	100	NA	NA	
Approach	1	54	669	26	751	2.0		0.663				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	39	13	25	78	2.0	543	0.143	100	NA	NA	
Approach	1	39	13	25	78	2.0		0.143				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	158	656	81	896	2.0	1366	0.656	100	NA	NA
Approach	1	158	656	81	896	2.0		0.656			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	104	13	5	124	2.4	553	0.225	100	NA	NA
Approach	2	104	13	5	124	2.4		0.225			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1848	2.0		0.663							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - BG 2027 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	797	10.3	797	10.3	898	0.887	100	15.7	LOS B	16.5	125.5	Full	500	0.0	0.0
Approach	797	10.3	797	10.3		0.887		15.7	LOS B	16.5	125.5				
East: Abbott Street E															
Lane 1 <sup>d</sup>	275	2.4	275	2.4	397	0.692	100	29.5	LOS C	7.6	54.6	Full	500	0.0	0.0
Approach	275	2.4	275	2.4		0.692		29.5	LOS C	7.6	54.6				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	343	2.0	343	2.0	1044	0.329	100	6.6	LOS A	2.0	14.4	Full	500	0.0	0.0
Approach	343	2.0	343	2.0		0.329		6.6	LOS A	2.0	14.4				
West: Abott Street E															
Lane 1 <sup>d</sup>	463	2.5	463	2.5	960	0.483	100	9.9	LOS A	3.7	26.6	Full	500	0.0	0.0
Approach	463	2.5	463	2.5		0.483		9.9	LOS A	3.7	26.6				
All Vehicles	1878	5.7	1878	5.7		0.887		14.6	LOS B	16.5	125.5				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	109	575	112	797	10.3	898	0.887	100	NA	NA	
Approach	1	109	575	112	797	10.3		0.887				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	58	119	97	275	2.4	397	0.692	100	NA	NA	
Approach	1	58	119	97	275	2.4		0.692				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	51	218	74	343	2.0	1044	0.329	100	NA	NA
Approach	1	51	218	74	343	2.0		0.329			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	298	89	74	463	2.5	960	0.483	100	NA	NA
Approach	2	298	89	74	463	2.5		0.483			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1878	5.7		0.887							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - BG 2027 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]	veh/h	v/c	%	sec		[ Veh ]	[ Dist ] m		m	%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	158	6.0	158	6.0	1040	0.152	100	4.2	LOS A	0.8	5.7	Full	500	0.0	0.0
Approach	158	6.0	158	6.0		0.152		4.2	LOS A	0.8	5.7				
East: Abbott Street E															
Lane 1 <sup>d</sup>	498	7.9	498	7.9	1309	0.380	100	5.8	LOS A	3.0	22.4	Full	500	0.0	0.0
Approach	498	7.9	498	7.9		0.380		5.8	LOS A	3.0	22.4				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	103	2.4	103	2.4	931	0.111	100	8.8	LOS A	0.6	4.0	Full	500	0.0	0.0
Approach	103	2.4	103	2.4		0.111		8.8	LOS A	0.6	4.0				
West: Abott Street E															
Lane 1 <sup>d</sup>	289	0.3	289	0.3	1093	0.265	100	5.5	LOS A	1.7	11.8	Full	500	0.0	0.0
Approach	289	0.3	289	0.3		0.265		5.5	LOS A	1.7	11.8				
All Vehicles	1048	5.0	1048	5.0		0.380		5.8	LOS A	3.0	22.4				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	46	24	86	158	6.0	1040	0.152	100	NA	NA	
Approach	1	46	24	86	158	6.0		0.152				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	131	277	89	498	7.9	1309	0.380	100	NA	NA	
Approach	1	131	277	89	498	7.9		0.380				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	58	25	19	103	2.4	931	0.111	100	NA	NA
Approach	1	58	25	19	103	2.4		0.111			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	3	235	51	289	0.3	1093	0.265	100	NA	NA
Approach	1	3	235	51	289	0.3		0.265			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1048	5.0		0.380							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Future Robert Grant Avenue at Cranesbill - BG  
2027 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
Site Category: (None)  
Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	943	2.0	943	2.0	1053	0.896	100	12.9	LOS B	18.1	128.8	Full	500	0.0	0.0
Approach	943	2.0	943	2.0		0.896		12.9	LOS B	18.1	128.8				
East: Abbott Street E															
Lane 1 <sup>d</sup>	123	2.0	123	2.0	307	0.401	100	20.5	LOS C	3.2	22.9	Full	500	0.0	0.0
Approach	123	2.0	123	2.0		0.401		20.5	LOS C	3.2	22.9				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	463	2.0	463	2.0	1307	0.354	100	5.7	LOS A	2.4	16.9	Full	500	0.0	0.0
Approach	463	2.0	463	2.0		0.354		5.7	LOS A	2.4	16.9				
West: Abott Street E															
Lane 1 <sup>d</sup>	268	2.2	268	2.2	874	0.307	100	10.7	LOS B	2.0	14.2	Full	500	0.0	0.0
Approach	268	2.2	268	2.2		0.307		10.7	LOS B	2.0	14.2				
All Vehicles	1798	2.0	1798	2.0		0.896		11.2	LOS B	18.1	128.8				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	35	893	15	943	2.0	1053	0.896	100	NA	NA	
Approach	1	35	893	15	943	2.0		0.896				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	22	47	53	123	2.0	307	0.401	100	NA	NA	
Approach	1	22	47	53	123	2.0		0.401				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	93	317	53	463	2.0	1307	0.354	100	NA	NA
Approach	1	93	317	53	463	2.0	0.354				
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	203	57	6	268	2.2	874	0.307	100	NA	NA
Approach	2	203	57	6	268	2.2	0.307				
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1798	2.0	0.896								

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec			
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - BG 2027 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	616	2.3	616	2.3	971	0.634	100	6.2	LOS A	6.2	44.4	Full	500	0.0	0.0
Approach	616	2.3	616	2.3		0.634		6.2	LOS A	6.2	44.4				
East: Abbott Street E															
Lane 1 <sup>d</sup>	282	2.4	282	2.4	672	0.420	100	10.4	LOS B	3.2	22.5	Full	500	0.0	0.0
Approach	282	2.4	282	2.4		0.420		10.4	LOS B	3.2	22.5				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	660	2.0	660	2.0	1193	0.553	100	6.0	LOS A	4.5	32.0	Full	500	0.0	0.0
Approach	660	2.0	660	2.0		0.553		6.0	LOS A	4.5	32.0				
West: Abott Street E															
Lane 1 <sup>d</sup>	429	4.2	429	4.2	774	0.555	100	12.2	LOS B	5.1	36.9	Full	500	0.0	0.0
Approach	429	4.2	429	4.2		0.555		12.2	LOS B	5.1	36.9				
All Vehicles	1987	2.6	1987	2.6		0.634		8.0	LOS A	6.2	44.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	47	449	118	616	2.3	971	0.634	100	NA	NA	
Approach	1	47	449	118	616	2.3		0.634				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	22	124	135	282	2.4	672	0.420	100	NA	NA	
Approach	1	22	124	135	282	2.4		0.420				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	43	449	166	660	2.0	1193	0.553	100	NA	NA
Approach	1	43	449	166	660	2.0		0.553			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	151	189	87	429	4.2	774	0.555	100	NA	NA
Approach	2	151	189	87	429	4.2		0.555			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1987	2.6		0.634							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - BG 2032 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	242	5.6	242	5.6	1059	0.229	100	4.0	LOS A	1.2	8.9	Full	500	0.0	0.0
Approach	242	5.6	242	5.6		0.229		4.0	LOS A	1.2	8.9				
East: Abbott Street E															
Lane 1 <sup>d</sup>	292	7.7	292	7.7	1217	0.240	100	5.6	LOS A	1.6	11.9	Full	500	0.0	0.0
Approach	292	7.7	292	7.7		0.240		5.6	LOS A	1.6	11.9				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	142	2.4	142	2.4	1048	0.136	100	7.9	LOS A	0.7	4.8	Full	500	0.0	0.0
Approach	142	2.4	142	2.4		0.136		7.9	LOS A	0.7	4.8				
West: Abott Street E															
Lane 1 <sup>d</sup>	284	0.5	284	0.5	1155	0.246	100	5.1	LOS A	1.6	11.1	Full	500	0.0	0.0
Approach	284	0.5	284	0.5		0.246		5.1	LOS A	1.6	11.1				
All Vehicles	960	4.3	960	4.3		0.246		5.4	LOS A	1.6	11.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	56	38	147	242	5.6	1059	0.229	100	NA	NA	
Approach	1	56	38	147	242	5.6		0.229				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	56	191	44	292	7.7	1217	0.240	100	NA	NA	
Approach	1	56	191	44	292	7.7		0.240				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	76	36	29	142	2.4	1048	0.136	100	NA	NA
Approach	1	76	36	29	142	2.4		0.136			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	3	205	74	284	0.5	1155	0.246	100	NA	NA
Approach	2	3	205	74	284	0.5		0.246			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	960	4.3						0.246			

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Future Robert Grant Avenue at Cranesbill - BG  
2032 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
Site Category: (None)  
Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	788	2.0	788	2.0	1118	0.705	100	5.8	LOS A	7.7	54.8	Full	500	0.0	0.0
Approach	788	2.0	788	2.0		0.705		5.8	LOS A	7.7	54.8				
East: Abbott Street E															
Lane 1 <sup>d</sup>	82	2.0	82	2.0	505	0.162	100	13.6	LOS B	1.1	8.0	Full	500	0.0	0.0
Approach	82	2.0	82	2.0		0.162		13.6	LOS B	1.1	8.0				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	942	2.0	942	2.0	1358	0.694	100	6.1	LOS A	7.3	51.9	Full	500	0.0	0.0
Approach	942	2.0	942	2.0		0.694		6.1	LOS A	7.3	51.9				
West: Abott Street E															
Lane 1 <sup>d</sup>	131	2.4	131	2.4	514	0.254	100	15.9	LOS B	1.8	12.5	Full	500	0.0	0.0
Approach	131	2.4	131	2.4		0.254		15.9	LOS B	1.8	12.5				
All Vehicles	1943	2.0	1943	2.0		0.705		6.9	LOS A	7.7	54.8				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	57	703	27	788	2.0	1118	0.705	100	NA	NA	
Approach	1	57	703	27	788	2.0		0.705				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	41	14	26	82	2.0	505	0.162	100	NA	NA	
Approach	1	41	14	26	82	2.0		0.162				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	166	689	85	942	2.0	1358	0.694	100	NA	NA
Approach	1	166	689	85	942	2.0		0.694			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	109	14	5	131	2.4	514	0.254	100	NA	NA
Approach	2	109	14	5	131	2.4		0.254			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1943	2.0				0.705					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - BG 2032 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	837	10.3	837	10.3	878	0.953	100	23.3	LOS C	23.0	175.4	Full	500	0.0	0.0
Approach	837	10.3	837	10.3		0.953		23.3	LOS C	23.0	175.4				
East: Abbott Street E															
Lane 1 <sup>d</sup>	289	2.4	289	2.4	366	0.790	100	40.6	LOS D	10.1	72.2	Full	500	0.0	0.0
Approach	289	2.4	289	2.4		0.790		40.6	LOS D	10.1	72.2				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	361	2.0	361	2.0	1032	0.350	100	6.7	LOS A	2.2	15.6	Full	500	0.0	0.0
Approach	361	2.0	361	2.0		0.350		6.7	LOS A	2.2	15.6				
West: Abott Street E															
Lane 1 <sup>d</sup>	486	2.5	486	2.5	943	0.516	100	10.2	LOS B	4.2	29.8	Full	500	0.0	0.0
Approach	486	2.5	486	2.5		0.516		10.2	LOS B	4.2	29.8				
All Vehicles	1974	5.7	1974	5.7		0.953		19.6	LOS B	23.0	175.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	115	604	117	837	10.3	878	0.953	100	NA	NA	
Approach	1	115	604	117	837	10.3		0.953				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	61	125	102	289	2.4	366	0.790	100	NA	NA	
Approach	1	61	125	102	289	2.4		0.790				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	53	229	78	361	2.0	1032	0.350	100	NA	NA
Approach	1	53	229	78	361	2.0		0.350			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	313	94	78	486	2.5	943	0.516	100	NA	NA
Approach	2	313	94	78	486	2.5		0.516			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1974	5.7		0.953							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - BG 2032 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]	veh/h	v/c	%	sec		[ Veh ]	[ Dist ] m		m	%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	169	6.7	169	6.7	1050	0.161	100	4.3	LOS A	0.8	6.0	Full	500	0.0	0.0
Approach	169	6.7	169	6.7		0.161		4.3	LOS A	0.8	6.0				
East: Abbott Street E															
Lane 1 <sup>d</sup>	488	7.4	488	7.4	1271	0.384	100	5.8	LOS A	3.0	22.4	Full	500	0.0	0.0
Approach	488	7.4	488	7.4		0.384		5.8	LOS A	3.0	22.4				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	104	2.5	104	2.5	891	0.117	100	9.0	LOS A	0.6	4.4	Full	500	0.0	0.0
Approach	104	2.5	104	2.5		0.117		9.0	LOS A	0.6	4.4				
West: Abott Street E															
Lane 1 <sup>d</sup>	292	0.5	292	0.5	1117	0.261	100	5.3	LOS A	1.7	11.7	Full	500	0.0	0.0
Approach	292	0.5	292	0.5		0.261		5.3	LOS A	1.7	11.7				
All Vehicles	1054	4.9	1054	4.9		0.384		5.8	LOS A	3.0	22.4				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	56	32	81	169	6.7	1050	0.161	100	NA	NA	
Approach	1	56	32	81	169	6.7		0.161				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	115	334	39	488	7.4	1271	0.384	100	NA	NA	
Approach	1	115	334	39	488	7.4		0.384				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	55	25	23	104	2.5	891	0.117	100	NA	NA
Approach	1	55	25	23	104	2.5	0.117				
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	3	221	66	292	0.5	1117	0.261	100	NA	NA
Approach	1	3	221	66	292	0.5	0.261				
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1054	4.9	0.384								

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Future Robert Grant Avenue at Cranesbill - BG  
2032 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
Site Category: (None)  
Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	992	2.0	992	2.0	1036	0.957	100	19.7	LOS B	25.5	181.3	Full	500	0.0	0.0
Approach	992	2.0	992	2.0		0.957		19.7	LOS B	25.5	181.3				
East: Abbott Street E															
Lane 1 <sup>d</sup>	129	2.0	129	2.0	276	0.468	100	26.2	LOS C	4.0	28.4	Full	500	0.0	0.0
Approach	129	2.0	129	2.0		0.468		26.2	LOS C	4.0	28.4				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	486	2.0	486	2.0	1301	0.374	100	5.8	LOS A	2.6	18.2	Full	500	0.0	0.0
Approach	486	2.0	486	2.0		0.374		5.8	LOS A	2.6	18.2				
West: Abott Street E															
Lane 1 <sup>d</sup>	282	2.2	282	2.2	856	0.329	100	11.0	LOS B	2.2	15.5	Full	500	0.0	0.0
Approach	282	2.2	282	2.2		0.329		11.0	LOS B	2.2	15.5				
All Vehicles	1889	2.0	1889	2.0		0.957		15.2	LOS B	25.5	181.3				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	37	938	16	992	2.0	1036	0.957	100	NA	NA	
Approach	1	37	938	16	992	2.0		0.957				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	23	49	56	129	2.0	276	0.468	100	NA	NA	
Approach	1	23	49	56	129	2.0		0.468				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	97	333	56	486	2.0	1301	0.374	100	NA	NA
Approach	1	97	333	56	486	2.0	0.374				
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	214	60	6	282	2.2	856	0.329	100	NA	NA
Approach	2	214	60	6	282	2.2	0.329				
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1889	2.0	0.957								

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - BG 2032 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	647	2.3	647	2.3	951	0.681	100	7.1	LOS A	7.4	52.8	Full	500	0.0	0.0
Approach	647	2.3	647	2.3		0.681		7.1	LOS A	7.4	52.8				
East: Abbott Street E															
Lane 1 <sup>d</sup>	297	2.4	297	2.4	641	0.463	100	11.6	LOS B	3.8	26.9	Full	500	0.0	0.0
Approach	297	2.4	297	2.4		0.463		11.6	LOS B	3.8	26.9				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	694	2.0	694	2.0	1182	0.587	100	6.1	LOS A	5.0	35.5	Full	500	0.0	0.0
Approach	694	2.0	694	2.0		0.587		6.1	LOS A	5.0	35.5				
West: Abott Street E															
Lane 1 <sup>d</sup>	451	4.2	451	4.2	749	0.602	100	13.5	LOS B	6.0	43.6	Full	500	0.0	0.0
Approach	451	4.2	451	4.2		0.602		13.5	LOS B	6.0	43.6				
All Vehicles	2088	2.6	2088	2.6		0.681		8.8	LOS A	7.4	52.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	49	473	124	647	2.3	951	0.681	100	NA	NA	
Approach	1	49	473	124	647	2.3		0.681				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	23	131	142	297	2.4	641	0.463	100	NA	NA	
Approach	1	23	131	142	297	2.4		0.463				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	45	473	175	694	2.0	1182	0.587	100	NA	NA
Approach	1	45	473	175	694	2.0		0.587			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	158	199	92	451	4.2	749	0.602	100	NA	NA
Approach	2	158	199	92	451	4.2		0.602			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	2088	2.6		0.681							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - Total 2027 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	232	4.9	232	4.9	1046	0.221	100	4.0	LOS A	1.2	8.5	Full	500	0.0	0.0
Approach	232	4.9	232	4.9		0.221		4.0	LOS A	1.2	8.5				
East: Abbott Street E															
Lane 1 <sup>d</sup>	311	7.9	311	7.9	1258	0.247	100	5.4	LOS A	1.7	12.5	Full	500	0.0	0.0
Approach	311	7.9	311	7.9		0.247		5.4	LOS A	1.7	12.5				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	143	2.4	143	2.4	1048	0.137	100	7.9	LOS A	0.7	4.8	Full	500	0.0	0.0
Approach	143	2.4	143	2.4		0.137		7.9	LOS A	0.7	4.8				
West: Abott Street E															
Lane 1 <sup>d</sup>	292	0.4	292	0.4	1156	0.252	100	5.2	LOS A	1.6	11.4	Full	500	0.0	0.0
Approach	292	0.4	292	0.4		0.252		5.2	LOS A	1.6	11.4				
All Vehicles	977	4.1	977	4.1		0.252		5.4	LOS A	1.7	12.5				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	48	25	157	232	4.9	1046	0.221	100	NA	NA	
Approach	1	48	25	157	232	4.9		0.221				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	56	199	55	311	7.9	1258	0.247	100	NA	NA	
Approach	1	56	199	55	311	7.9		0.247				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	77	36	29	143	2.4	1048	0.137	100	NA	NA
Approach	1	77	36	29	143	2.4		0.137			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	6	223	60	292	0.4	1156	0.252	100	NA	NA
Approach	2	6	223	60	292	0.4		0.252			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	977	4.1				0.252					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

Site: 101 [Future Robert Grant Avenue at Cranesbill - Total 2027 PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	756	2.0	756	2.0	1099	0.687	100	5.8	LOS A	7.2	51.1	Full	500	0.0	0.0
Approach	756	2.0	756	2.0		0.687		5.8	LOS A	7.2	51.1				
East: Abbott Street E															
Lane 1 <sup>d</sup>	137	2.0	137	2.0	536	0.255	100	12.6	LOS B	1.8	12.8	Full	500	0.0	0.0
Approach	137	2.0	137	2.0		0.255		12.6	LOS B	1.8	12.8				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	936	2.0	936	2.0	1354	0.691	100	6.2	LOS A	7.3	51.8	Full	500	0.0	0.0
Approach	936	2.0	936	2.0		0.691		6.2	LOS A	7.3	51.8				
West: Abott Street E															
Lane 1 <sup>d</sup>	124	2.4	124	2.4	512	0.242	100	15.9	LOS B	1.7	11.9	Full	500	0.0	0.0
Approach	124	2.4	124	2.4		0.242		15.9	LOS B	1.7	11.9				
All Vehicles	1953	2.0	1953	2.0		0.691		7.1	LOS A	7.3	51.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	54	669	32	756	2.0	1099	0.687	100	NA	NA	
Approach	1	54	669	32	756	2.0		0.687				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	46	13	77	137	2.0	536	0.255	100	NA	NA	
Approach	1	46	13	77	137	2.0		0.255				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	192	662	81	936	2.0	1354	0.691	100	NA	NA
Approach	1	192	662	81	936	2.0		0.691			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	104	13	5	124	2.4	512	0.242	100	NA	NA
Approach	2	104	13	5	124	2.4		0.242			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1953	2.0		0.691							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec			
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - Total 2027 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	787	10.2	787	10.2	888	0.887	100	15.9	LOS B	16.4	124.7	Full	500	0.0	0.0
Approach	787	10.2	787	10.2		0.887		15.9	LOS B	16.4	124.7				
East: Abbott Street E															
Lane 1 <sup>d</sup>	283	2.4	283	2.4	402	0.704	100	30.0	LOS C	7.9	56.6	Full	500	0.0	0.0
Approach	283	2.4	283	2.4		0.704		30.0	LOS C	7.9	56.6				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	351	2.0	351	2.0	1036	0.338	100	6.6	LOS A	2.1	14.9	Full	500	0.0	0.0
Approach	351	2.0	351	2.0		0.338		6.6	LOS A	2.1	14.9				
West: Abott Street E															
Lane 1 <sup>d</sup>	473	2.4	473	2.4	953	0.496	100	10.0	LOS A	3.9	27.6	Full	500	0.0	0.0
Approach	473	2.4	473	2.4		0.496		10.0	LOS A	3.9	27.6				
All Vehicles	1894	5.6	1894	5.6		0.887		14.8	LOS B	16.4	124.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	109	561	116	787	10.2	888	0.887	100	NA	NA	
Approach	1	109	561	116	787	10.2		0.887				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	61	124	97	283	2.4	402	0.704	100	NA	NA	
Approach	1	61	124	97	283	2.4		0.704				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	51	222	77	351	2.0	1036	0.338	100	NA	NA
Approach	1	51	222	77	351	2.0		0.338			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	307	89	74	473	2.4	953	0.496	100	NA	NA
Approach	2	307	89	74	473	2.4		0.496			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1894	5.6		0.887							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - Total 2027 PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Prob. Adj. Block.	
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]			%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	162	6.2	162	6.2	1026	0.158	100	4.2	LOS A	0.8	5.9	Full	500	0.0	0.0
Approach	162	6.2	162	6.2		0.158		4.2	LOS A	0.8	5.9				
East: Abbott Street E															
Lane 1 <sup>d</sup>	505	7.9	505	7.9	1294	0.390	100	5.9	LOS A	3.1	23.2	Full	500	0.0	0.0
Approach	505	7.9	505	7.9		0.390		5.9	LOS A	3.1	23.2				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	107	2.4	107	2.4	928	0.116	100	8.9	LOS A	0.6	4.2	Full	500	0.0	0.0
Approach	107	2.4	107	2.4		0.116		8.9	LOS A	0.6	4.2				
West: Abott Street E															
Lane 1 <sup>d</sup>	305	0.4	305	0.4	1090	0.280	100	5.6	LOS A	1.8	12.6	Full	500	0.0	0.0
Approach	305	0.4	305	0.4		0.280		5.6	LOS A	1.8	12.6				
All Vehicles	1080	5.0	1080	5.0		0.390		5.8	LOS A	3.1	23.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	46	28	86	162	6.2	1026	0.158	100	NA	NA	
Approach	1	46	28	86	162	6.2		0.158				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	131	279	95	505	7.9	1294	0.390	100	NA	NA	
Approach	1	131	279	95	505	7.9		0.390				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	62	25	19	107	2.4	928	0.116	100	NA	NA
Approach	1	62	25	19	107	2.4		0.116			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	5	244	55	305	0.4	1090	0.280	100	NA	NA
Approach	1	5	244	55	305	0.4		0.280			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1080	5.0		0.390							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

Site: 101 [Future Robert Grant Avenue at Cranesbill - Total 2027 AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	951	2.0	951	2.0	1018	0.933	100	17.3	LOS B	21.9	156.2	Full	500	0.0	0.0
Approach	951	2.0	951	2.0		0.933		17.3	LOS B	21.9	156.2				
East: Abbott Street E															
Lane 1 <sup>d</sup>	171	2.0	171	2.0	307	0.556	100	27.6	LOS C	5.1	36.5	Full	500	0.0	0.0
Approach	171	2.0	171	2.0		0.556		27.6	LOS C	5.1	36.5				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	507	2.0	507	2.0	1299	0.390	100	6.0	LOS A	2.7	19.5	Full	500	0.0	0.0
Approach	507	2.0	507	2.0		0.390		6.0	LOS A	2.7	19.5				
West: Abott Street E															
Lane 1 <sup>d</sup>	268	2.2	268	2.2	832	0.323	100	11.2	LOS B	2.1	15.2	Full	500	0.0	0.0
Approach	268	2.2	268	2.2		0.323		11.2	LOS B	2.1	15.2				
All Vehicles	1897	2.0	1897	2.0		0.933		14.3	LOS B	21.9	156.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	35	893	22	951	2.0	1018	0.933	100	NA	NA	
Approach	1	35	893	22	951	2.0		0.933				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	29	47	93	171	2.0	307	0.556	100	NA	NA	
Approach	1	29	47	93	171	2.0		0.556				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	131	323	53	507	2.0	1299	0.390	100	NA	NA
Approach	1	131	323	53	507	2.0		0.390			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	203	57	6	268	2.2	832	0.323	100	NA	NA
Approach	2	203	57	6	268	2.2		0.323			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1897	2.0		0.933							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - Total 2027 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	625	2.3	625	2.3	961	0.651	100	6.5	LOS A	6.6	47.3	Full	500	0.0	0.0
Approach	625	2.3	625	2.3		0.651		6.5	LOS A	6.6	47.3				
East: Abbott Street E															
Lane 1 <sup>d</sup>	287	2.4	287	2.4	660	0.436	100	10.9	LOS B	3.4	24.1	Full	500	0.0	0.0
Approach	287	2.4	287	2.4		0.436		10.9	LOS B	3.4	24.1				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	667	2.0	667	2.0	1186	0.563	100	6.0	LOS A	4.6	33.0	Full	500	0.0	0.0
Approach	667	2.0	667	2.0		0.563		6.0	LOS A	4.6	33.0				
West: Abott Street E															
Lane 1 <sup>d</sup>	439	4.2	439	4.2	768	0.572	100	12.7	LOS B	5.4	39.2	Full	500	0.0	0.0
Approach	439	4.2	439	4.2		0.572		12.7	LOS B	5.4	39.2				
All Vehicles	2019	2.6	2019	2.6		0.651		8.3	LOS A	6.6	47.3				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	47	455	122	625	2.3	961	0.651	100	NA	NA	
Approach	1	47	455	122	625	2.3		0.651				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	24	127	135	287	2.4	660	0.436	100	NA	NA	
Approach	1	24	127	135	287	2.4		0.436				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	43	454	169	667	2.0	1186	0.563	100	NA	NA
Approach	1	43	454	169	667	2.0		0.563			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	160	189	87	439	4.2	768	0.572	100	NA	NA
Approach	2	160	189	87	439	4.2		0.572			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	2019	2.6		0.651							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - Total 2032 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]	veh/h	v/c	%	sec		[ Veh ]	[ Dist ] m		m	%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	248	5.7	248	5.7	1054	0.236	100	4.0	LOS A	1.3	9.2	Full	500	0.0	0.0
Approach	248	5.7	248	5.7		0.236		4.0	LOS A	1.3	9.2				
East: Abbott Street E															
Lane 1 <sup>d</sup>	304	7.4	304	7.4	1204	0.253	100	5.4	LOS A	1.7	12.6	Full	500	0.0	0.0
Approach	304	7.4	304	7.4		0.253		5.4	LOS A	1.7	12.6				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	145	2.5	145	2.5	1020	0.142	100	8.0	LOS A	0.7	5.1	Full	500	0.0	0.0
Approach	145	2.5	145	2.5		0.142		8.0	LOS A	0.7	5.1				
West: Abott Street E															
Lane 1 <sup>d</sup>	294	0.5	294	0.5	1184	0.248	100	5.1	LOS A	1.6	11.4	Full	500	0.0	0.0
Approach	294	0.5	294	0.5		0.248		5.1	LOS A	1.6	11.4				
All Vehicles	992	4.2	992	4.2		0.253		5.3	LOS A	1.7	12.6				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	58	42	147	248	5.7	1054	0.236	100	NA	NA	
Approach	1	58	42	147	248	5.7		0.236				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	41	238	24	304	7.4	1204	0.253	100	NA	NA	
Approach	1	41	238	24	304	7.4		0.253				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	73	36	36	145	2.5	1020	0.142	100	NA	NA
Approach	1	73	36	36	145	2.5		0.142			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	6	211	75	294	0.5	1184	0.248	100	NA	NA
Approach	2	6	211	75	294	0.5		0.248			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	992	4.2				0.253					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Cranesbill Road / Rouncey Road - Total 2032 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Prob. Adj. Block.	
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]			%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	174	6.8	174	6.8	1036	0.168	100	4.3	LOS A	0.9	6.3	Full	500	0.0	0.0
Approach	174	6.8	174	6.8		0.168		4.3	LOS A	0.9	6.3				
East: Abbott Street E															
Lane 1 <sup>d</sup>	496	7.4	496	7.4	1258	0.394	100	5.9	LOS A	3.1	23.1	Full	500	0.0	0.0
Approach	496	7.4	496	7.4		0.394		5.9	LOS A	3.1	23.1				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	108	2.5	108	2.5	888	0.122	100	9.1	LOS A	0.6	4.6	Full	500	0.0	0.0
Approach	108	2.5	108	2.5		0.122		9.1	LOS A	0.6	4.6				
West: Abott Street E															
Lane 1 <sup>d</sup>	307	0.5	307	0.5	1114	0.276	100	5.4	LOS A	1.8	12.5	Full	500	0.0	0.0
Approach	307	0.5	307	0.5		0.276		5.4	LOS A	1.8	12.5				
All Vehicles	1085	4.9	1085	4.9		0.394		5.8	LOS A	3.1	23.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	56	36	81	174	6.8	1036	0.168	100	NA	NA	
Approach	1	56	36	81	174	6.8		0.168				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	115	336	44	496	7.4	1258	0.394	100	NA	NA	
Approach	1	115	336	44	496	7.4		0.394				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	59	25	23	108	2.5	888	0.122	100	NA	NA
Approach	1	59	25	23	108	2.5		0.122			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	5	231	71	307	0.5	1114	0.276	100	NA	NA
Approach	1	5	231	71	307	0.5		0.276			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1085	4.9		0.394							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - Total 2032 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Prob. Adj. Block.	
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]			%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	848	10.3	848	10.3	869	0.977	100	27.7	LOS C	26.2	199.4	Full	500	0.0	0.0
Approach	848	10.3	848	10.3		0.977		27.7	LOS C	26.2	199.4				
East: Abbott Street E															
Lane 1 <sup>d</sup>	298	2.4	298	2.4	357	0.834	100	46.9	LOS D	11.5	82.4	Full	500	0.0	0.0
Approach	298	2.4	298	2.4		0.834		46.9	LOS D	11.5	82.4				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	368	2.0	368	2.0	1023	0.360	100	6.7	LOS A	2.3	16.2	Full	500	0.0	0.0
Approach	368	2.0	368	2.0		0.360		6.7	LOS A	2.3	16.2				
West: Abott Street E															
Lane 1 <sup>d</sup>	496	2.4	496	2.4	936	0.530	100	10.5	LOS B	4.4	31.7	Full	500	0.0	0.0
Approach	496	2.4	496	2.4		0.530		10.5	LOS B	4.4	31.7				
All Vehicles	2011	5.7	2011	5.7		0.977		22.5	LOS C	26.2	199.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	115	612	121	848	10.3	869	0.977	100	NA	NA	
Approach	1	115	612	121	848	10.3		0.977				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	64	131	102	298	2.4	357	0.834	100	NA	NA	
Approach	1	64	131	102	298	2.4		0.834				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	53	234	81	368	2.0	1023	0.360	100	NA	NA
Approach	1	53	234	81	368	2.0		0.360			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	322	94	78	496	2.4	936	0.530	100	NA	NA
Approach	2	322	94	78	496	2.4		0.530			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	2011	5.7				0.977					

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec			
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Abbott Street at Robert Grant Avenue - Total 2032 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]	veh/h	v/c	%	sec		[ Veh ]	[ Dist ] m		m	%	%
South: Rouncey Road															
Lane 1 <sup>d</sup>	657	2.3	657	2.3	940	0.698	100	7.5	LOS A	7.9	56.3	Full	500	0.0	0.0
Approach	657	2.3	657	2.3		0.698		7.5	LOS A	7.9	56.3				
East: Abbott Street E															
Lane 1 <sup>d</sup>	302	2.4	302	2.4	629	0.481	100	12.2	LOS B	4.0	28.7	Full	500	0.0	0.0
Approach	302	2.4	302	2.4		0.481		12.2	LOS B	4.0	28.7				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	701	2.0	701	2.0	1175	0.597	100	6.2	LOS A	5.1	36.5	Full	500	0.0	0.0
Approach	701	2.0	701	2.0		0.597		6.2	LOS A	5.1	36.5				
West: Abott Street E															
Lane 1 <sup>d</sup>	460	4.2	460	4.2	743	0.620	100	14.1	LOS B	6.4	46.3	Full	500	0.0	0.0
Approach	460	4.2	460	4.2		0.620		14.1	LOS B	6.4	46.3				
All Vehicles	2120	2.6	2120	2.6		0.698		9.2	LOS A	7.9	56.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	49	478	128	657	2.3	940	0.698	100	NA	NA	
Approach	1	49	478	128	657	2.3		0.698				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	25	134	142	302	2.4	629	0.481	100	NA	NA	
Approach	1	25	134	142	302	2.4		0.481				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	45	477	178	701	2.0	1175	0.597	100	NA	NA
Approach	1	45	477	178	701	2.0		0.597			
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	167	199	92	460	4.2	743	0.620	100	NA	NA
Approach	2	167	199	92	460	4.2		0.620			
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	2120	2.6		0.698							

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Future Robert Grant Avenue at Cranesbill - Total 2032 AM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	999	2.0	999	2.0	1002	0.997	100	28.5	LOS C	31.9	227.4	Full	500	0.0	0.0
Approach	999	2.0	999	2.0		0.997		28.5	LOS C	31.9	227.4				
East: Abbott Street E															
Lane 1 <sup>d</sup>	177	2.0	177	2.0	276	0.640	100	36.8	LOS D	6.4	45.6	Full	500	0.0	0.0
Approach	177	2.0	177	2.0		0.640		36.8	LOS D	6.4	45.6				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	531	2.0	531	2.0	1294	0.410	100	6.1	LOS A	2.9	20.9	Full	500	0.0	0.0
Approach	531	2.0	531	2.0		0.410		6.1	LOS A	2.9	20.9				
West: Abott Street E															
Lane 1 <sup>d</sup>	282	2.2	282	2.2	814	0.346	100	11.4	LOS B	2.3	16.6	Full	500	0.0	0.0
Approach	282	2.2	282	2.2		0.346		11.4	LOS B	2.3	16.6				
All Vehicles	1988	2.0	1988	2.0		0.997		20.8	LOS C	31.9	227.4				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	37	938	23	999	2.0	1002	0.997	100	NA	NA	
Approach	1	37	938	23	999	2.0		0.997				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	31	49	96	177	2.0	276	0.640	100	NA	NA	
Approach	1	31	49	96	177	2.0		0.640				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	135	339	56	531	2.0	1294	0.410	100	NA	NA
Approach	1	135	339	56	531	2.0	0.410				
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	214	60	6	282	2.2	814	0.346	100	NA	NA
Approach	2	214	60	6	282	2.2	0.346				
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	1988	2.0	0.997								

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

# LANE SUMMARY

**Site: 101 [Future Robert Grant Avenue at Cranesbill - Total 2032 PM (Site Folder: General)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

New Site  
 Site Category: (None)  
 Roundabout

Lane Use and Performance															
	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% Back Of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h ]	[ HV % ]	[ Total veh/h ]	[ HV % ]						[ Veh ]	[ Dist ]				
South: Rouncey Road															
Lane 1 <sup>d</sup>	794	2.0	794	2.0	1084	0.732	100	6.7	LOS A	8.6	61.4	Full	500	0.0	0.0
Approach	794	2.0	794	2.0		0.732		6.7	LOS A	8.6	61.4				
East: Abbott Street E															
Lane 1 <sup>d</sup>	141	2.0	141	2.0	494	0.285	100	13.3	LOS B	2.0	14.6	Full	500	0.0	0.0
Approach	141	2.0	141	2.0		0.285		13.3	LOS B	2.0	14.6				
North: Cranesbill Road															
Lane 1 <sup>d</sup>	982	2.0	982	2.0	1346	0.730	100	6.4	LOS A	8.3	59.0	Full	500	0.0	0.0
Approach	982	2.0	982	2.0		0.730		6.4	LOS A	8.3	59.0				
West: Abott Street E															
Lane 1 <sup>d</sup>	131	2.4	131	2.4	471	0.277	100	16.8	LOS B	2.0	14.0	Full	500	0.0	0.0
Approach	131	2.4	131	2.4		0.277		16.8	LOS B	2.0	14.0				
All Vehicles	2047	2.0	2047	2.0		0.732		7.7	LOS A	8.6	61.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
 Roundabout LOS Method: SIDRA Roundabout LOS.  
 Lane LOS values are based on average delay per lane.  
 Intersection and Approach LOS values are based on average delay for all lanes.  
 Roundabout Capacity Model: SIDRA Standard.  
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).  
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.  
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).  
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.  
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

Approach Lane Flows (veh/h)												
South: Rouncey Road												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From S							Cap. veh/h	v/c	%	%	No.	
To Exit:	S	W	N	E								
Lane 1	1	57	703	33	794	2.0	1084	0.732	100	NA	NA	
Approach	1	57	703	33	794	2.0		0.732				
East: Abbott Street E												
Mov.	U	L2	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From E							Cap. veh/h	v/c	%	%	No.	
To Exit:	E	S	W	N								
Lane 1	1	48	14	78	141	2.0	494	0.285	100	NA	NA	
Approach	1	48	14	78	141	2.0		0.285				
North: Cranesbill Road												

Mov. From N To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	200	696	85	982	2.0	1346	0.730	100	NA	NA
Approach	1	200	696	85	982	2.0	0.730				
<b>West: Abott Street E</b>											
Mov. From W To Exit:	U	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	109	14	5	131	2.4	471	0.277	100	NA	NA
Approach	2	109	14	5	131	2.4	0.277				
<b>Total %HV Deg. Satn (v/c)</b>											
All Vehicles	2047	2.0	0.732								

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<b>Merge Analysis</b>												
Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
There are no Exit Short Lanes for Merge Analysis at this Site.												

<b>Variable Demand Analysis</b>				
	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
<b>South: Rouncey Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>East: Abbott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>North: Cranesbill Road</b>				
Lane 1	0.0	0.0	0.0	0.0
<b>West: Abott Street E</b>				
Lane 1	0.0	0.0	0.0	0.0

**APPENDIX I**  
**Signal Warrants**

# Signal Warrant Calculation

MAJOR STREET:

MINOR STREET:

COMMENT:

NUMBER OF APPROACH LANES: 1  2

TEE INTERSECTION CONFIGURATION: YES  NO

FLOW CONDITIONS: FREE FLOW (RURAL)   
RESTRICTED FLOW (URBAN)

VOLUME	AM	PM	FACTOR *	
1A - All	411	403	n/a	285
1B - Minor	55	79	70%	47
2A - Major	356	324	70%	238
2B - Cross	45	58	70%	36

\* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for new intersection with forecast traffic
120% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for existing intersection with forecast traffic
100% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for existing intersection with existing traffic *
COMBO 80% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for existing intersection with existing traffic
80% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	

\* Consider full underground provisions if 100% for forecast traffic

## WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		<input checked="" type="checkbox"/>			
ALL APPROACHES	480	720	600	900	285
% FULFILLED					40%

150% SATISFIED: YES  NO   
 120% SATISFIED: YES  NO   
 100% SATISFIED: YES  NO   
 80% SATISFIED: YES  NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		<input checked="" type="checkbox"/>			
MINOR STREET APPROACHES	180	255	180	255	47
% FULFILLED					18%

## WARRANT 2 - DELAY TO CROSS TRAFFIC

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		<input checked="" type="checkbox"/>			
MAJOR STREET APPROACHES	480	720	600	900	238
% FULFILLED					33%

150% SATISFIED: YES  NO   
 120% SATISFIED: YES  NO   
 100% SATISFIED: YES  NO   
 80% SATISFIED: YES  NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		<input checked="" type="checkbox"/>			
TRAFFIC CROSSING MAJOR STREET	50	75	50	75	36
% FULFILLED					48%

1A - MINIMUM VEHICULAR VOLUME: Total vehicle volume on all approaches for average day

1B - MINIMUM VEHICULAR VOLUME: Total vehicle volume on minor streets

2A - DELAY TO CROSS TRAFFIC: Total vehicle volume on major street for average day

2B - DELAY TO CROSS TRAFFIC: Total vehicle and pedestrian volume crossing major street; comprising: (1) lefts from both minor streets, (2) heaviest through from minor street, (3) 50% of heavier left turn from major street when following criteria met: (a) left turn volume >120 and (b) left turn volume plus opposing volume > 720, (4) pedestrians crossing the major street.

# Signal Warrant Calculation

MAJOR STREET:

MINOR STREET:

COMMENT:

NUMBER OF APPROACH LANES: 1  2

TEE INTERSECTION CONFIGURATION YES  NO

FLOW CONDITIONS: FREE FLOW (RURAL)   
RESTRICTED FLOW (URBAN)

VOLUME	AM	PM	FACTOR *	
1A - All	540	634	n/a	411
1B - Minor	91	94	70%	65
2A - Major	449	540	70%	346
2B - Cross	52	48	70%	35

\* This factor relates average of the "peak eight hours" to the average of the "am and pm peak hours"

OVERALL WARRANT

150% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for new intersection with forecast traffic
120% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for existing intersection with forecast traffic
100% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for existing intersection with existing traffic *
COMBO 80% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Warrant for existing intersection with existing traffic
80% SATISFIED:	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	

\* Consider full underground provisions if 100% for forecast traffic

## WARRANT 1 - MINIMUM VEHICULAR VOLUME

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		X			
ALL APPROACHES	480	720	600	900	411
% FULFILLED					57%

150% SATISFIED: YES  NO   
 120% SATISFIED: YES  NO   
 100% SATISFIED: YES  NO   
 80% SATISFIED: YES  NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		X			
MINOR STREET APPROACHES	120	170	120	170	65
% FULFILLED					38%

## WARRANT 2 - DELAY TO CROSS TRAFFIC

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		X			
MAJOR STREET APPROACHES	480	720	600	900	346
% FULFILLED					48%

150% SATISFIED: YES  NO   
 120% SATISFIED: YES  NO   
 100% SATISFIED: YES  NO   
 80% SATISFIED: YES  NO

APPROACH LANES	1		2 OR MORE		AVERAGE HOUR PERIOD
	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	
FLOW CONDITION		X			
TRAFFIC CROSSING MAJOR STREET	50	75	50	75	35
% FULFILLED					47%

1A - MINIMUM VEHICULAR VOLUME: Total vehicle volume on all approaches for average day

1B - MINIMUM VEHICULAR VOLUME: Total vehicle volume on minor streets

2A - DELAY TO CROSS TRAFFIC: Total vehicle volume on major street for average day

2B - DELAY TO CROSS TRAFFIC: Total vehicle and pedestrian volume crossing major street; comprising: (1) lefts from both minor streets, (2) heaviest through from minor street, (3) 50% of heavier left turn from major street when following criteria met: (a) left turn volume >120 and (b) left turn volume plus opposing volume > 720, (4) pedestrians crossing the major street.

**APPENDIX J**  
**MMLOS Analysis**

Multi-Modal Level of Service - Segments Form

Project: Triangle Street Elementary School  
 Consultant: Robinson Consultants Inc  
 Date: Sep 25, 2025  
 Scenario: Existing Conditions

Segment Name		Triangle Street - Honeylocust to Carnesbill				Honeylocust Ave - Traingle to Ponderosa				Cranesbill Drive - Triangle to Silence				
OP Transect / Policy Area		Within 300m of school				Within 300m of school				Within 300m of school				
Segment Component		Majority (>50%)		Critical		Majority (>50%)		Critical		Majority (>50%)		Critical		
Side of Street		W	E	W	E	N	S	N	S	N	S	N	S	
Pedestrian	PLOS Inputs													
	Posted Speed (km/h)	40 km/h		40 km/h		40 km/h		40 km/h		40 km/h		40 km/h		
	Two-Way ADT	262		262		157		157		322		322		
	Pedestrian Facility	None	Sidewalk	None	Sidewalk	Sidewalk	None	Sidewalk	None	Sidewalk	Sidewalk	Sidewalk	Sidewalk	
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	No	Yes	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
	Facility Width (m)	-	2.00m	-	2.00m	2.00m	-	2.00m	-	2.30m	2.30m	2.30m	2.30m	
	Offset from Motor Vehicle Travel Lanes (m)	-	< 0.5m	-	< 0.5m	< 0.5m	-	< 0.5m	-	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m	
	Presence of Adjacent Parking?	-	-	-	-	-	-	-	-	-	-	-	-	
	General Purpose Curb Lane ADT	-	≤ 3000	-	≤ 3000	≤ 3000	-	≤ 3000	-	≤ 3000	≤ 3000	≤ 3000	≤ 3000	
	Max Distance between Controlled Crossings (m)	-	-	-	-	-	-	-	-	-	-	-	-	
Score	0.00	4.25	0.00	4.25	4.25	0.00	4.25	0.00	5.00	5.00	5.00	5.00		
PLOS	F	B	F	B	B	F	B	F	A	A	A	A		
Target PLOS	B				B				B					
Bicycle	BLOS Inputs													
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere				
	Cycling Facility	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-	-	-	-	-	-	-	-	-	
	Facility Operation	-	-	-	-	-	-	-	-	-	-	-	-	
	Pedestrian/Cyclist Volume	-	-	-	-	-	-	-	-	-	-	-	-	
	Facility Width	-	-	-	-	-	-	-	-	-	-	-	-	
	Boulevard/Buffer Width (excluding curb)	-	-	-	-	-	-	-	-	-	-	-	-	
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None	None	None	None	None	None	None	None	None	
	Number of Travel Lanes at Crossing	-	-	-	-	-	-	-	-	-	-	-	-	
Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-	-	-	-	-	-	-	-	-		
Cross-street Posted Speed (km/h)	-	-	-	-	-	-	-	-	-	-	-	-		
Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare		
Score	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
BLOS	A	A	A	A	A	A	A	A	A	A	A	A		
Target BLOS	C				C				C					
Transit	TLOS Inputs													
	Transit Facility	Mixed Traffic				Mixed Traffic				Mixed Traffic				
	Facility Type	Mixed Traffic	Mixed Traffic			Mixed Traffic	Mixed Traffic			Mixed Traffic	Mixed Traffic			
	Expected Transit Running Time	Slightly Impeded	Slightly Impeded			Slightly Impeded	Slightly Impeded			Slightly Impeded	Slightly Impeded			
	Transit Travel Speed (if available)	Enter Speed (if available)	Enter Speed (if available)			Enter Speed (if available)	Enter Speed (if available)			Enter Speed (if available)	Enter Speed (if available)			
TLOS	C	C			C	C			C	C				
Target TLOS	E (D for frequent transit routes)				E (D for frequent transit routes)				E (D for frequent transit routes)					
Public Realm	PRLOS Inputs													
	Context	Other Streets	Other Streets			Other Streets	Other Streets			Other Streets	Other Streets			
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m			
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m			
	Transit Route on Segment?	No	No			No	No			No	No			
	Bus Stop Elements	-	-			-	-			-	-			
Number of Midblock Traffic Lanes (both travel directions)	≤ 2				≤ 2				≤ 2					
Score	19.50	25.50			25.50	19.50			25.50	25.50				
PRLOS	C	A			A	C			A	A				
	B				B				A					

Multi-Modal Level of Service - Segments Form

Project: Triangle Street Elementary School  
 Consultant: Robinson Consultants Inc  
 Date: Sep 25, 2025  
 Scenario: 2032 Future

Segment Name		Triangle Street - Honeylocust to Carnesbill				Honeylocust Ave - Traingle to Ponderosa				Cranesbill Drive - Triangle to Silence			
OP Transect / Policy Area		Within 300m of school				Within 300m of school				Within 300m of school			
Segment Component		Majority (>50%)		Critical		Majority (>50%)		Critical		Majority (>50%)		Critical	
Side of Street		W	E	W	E	N	S	N	S	N	S	N	S
Pedestrian	PLOS Inputs												
	Posted Speed (km/h)	40 km/h		40 km/h		40 km/h		40 km/h		40 km/h		40 km/h	
	Two-Way ADT	262		262		157		157		2,200		2,200	
	Pedestrian Facility	None	Sidewalk	None	Sidewalk	Sidewalk	None	Sidewalk	None	Sidewalk	Sidewalk	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	No	Yes	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes
	Facility Width (m)	-	2.40m	-	2.00m	2.00m	-	2.00m	-	2.30m	2.30m	2.30m	2.30m
	Offset from Motor Vehicle Travel Lanes (m)	-	1.5-2.99m	-	< 0.5m	1.5-2.99m	-	< 0.5m	-	1.5-2.99m	1.5-2.99m	1.5-2.99m	1.5-2.99m
	Presence of Adjacent Parking?	-	-	-	-	-	-	-	-	-	-	-	-
	General Purpose Curb Lane ADT	-	≤ 3000	-	≤ 3000	≤ 3000	-	≤ 3000	-	≤ 3000	≤ 3000	≤ 3000	≤ 3000
	Max Distance between Controlled Crossings (m)	-	-	-	-	-	-	-	-	> 400m	> 400m	> 400m	> 400m
Score	0.00	5.00	0.00	4.25	5.00	0.00	4.25	0.00	3.75	3.75	3.75	3.75	
PLOS	F	A	F	B	A	F	B	F	B	B	B	B	
Target PLOS	B				B				B				
Bicycle	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-	-	-	-	-	-	-	-	-
	Facility Operation	-	-	-	-	-	-	-	-	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	-	-	-	-	-	-	-	-	-	-
	Facility Width	-	-	-	-	-	-	-	-	-	-	-	-
	Boulevard/Buffer Width (excluding curb)	-	-	-	-	-	-	-	-	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None	None	None	None	None	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-	-	-	-	-	-	-	-	-
Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-	-	-	-	-	-	-	-	-	
Cross-street Posted Speed (km/h)	-	-	-	-	-	-	-	-	-	-	-	-	
Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	Rare	
Score	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.30	3.30	3.30	3.30	
BLOS	A	A	A	A	A	A	A	A	C	C	C	C	
Target BLOS	C				C				C				
Transit	TLOS Inputs												
	Transit Facility	Mixed Traffic				Mixed Traffic				Mixed Traffic			
	Facility Type	Mixed Traffic	Mixed Traffic			Mixed Traffic	Mixed Traffic			Mixed Traffic	Mixed Traffic		
	Expected Transit Running Time	Slightly Impeded	Slightly Impeded			Slightly Impeded	Slightly Impeded			Slightly Impeded	Slightly Impeded		
	Transit Travel Speed (if available)	Enter Speed (if available)	Enter Speed (if available)			Enter Speed (if available)	Enter Speed (if available)			Enter Speed (if available)	Enter Speed (if available)		
TLOS	C	C			C	C			C	C			
Target TLOS	E (D for frequent transit routes)				E (D for frequent transit routes)				E (D for frequent transit routes)				
Public Realm	PRLOS Inputs												
	Context	Other Streets	Other Streets			Other Streets	Other Streets			Other Streets	Other Streets		
	Inner Boulevard Width	≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m			≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	No	No			No	No			No	No		
	Bus Stop Elements	-	-			-	-			-	-		
Number of Midblock Traffic Lanes (both travel directions)	≤ 2				≤ 2				≤ 2				
Score	19.50	25.50			25.50	19.50			21.00	21.00			
PRLOS	C	A			A	C			B	B			
	B				B				B				

**Multi-Modal Level of Service - Intersections Form**

**Project:** Triangle Street Elementary School  
**Consultant:** Robinson Consultants Inc  
**Date:** Sep 25, 2025  
**Scenario:** Existing Conditions

Intersection Name		Terry Fox Drive / Abbott Street			
OP Transect / Policy Area		Outer Urban or Suburban			
<b>Pedestrian</b>	<b>PLOS Inputs</b>				
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	4	1-3	1-3	1-3
	Median Refuge (≥2.7m)	No	No	No	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	100.0			
	Effective Walk Time (sec)	7.5	20.5	22.7	22.7
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m
	Cross-street Posted Speed (km/h)	70 km/h		40 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	> 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h
	Left-Turn Opposing Lanes	-	≤ 1	≤ 1	≥ 2
	<b>Score</b>	<b>3.20</b>	<b>4.15</b>	<b>4.45</b>	<b>3.80</b>
<b>PLOS</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	
<b>Target PLOS</b>	<b>C</b>				
<b>Bicycle</b>	<b>BLOS Inputs</b>				
	<b>Cycling Route Classification</b>	<b>Cross-Town Bikeway</b>			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	21,300		9,630	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No
	Crossride Operation	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-
	Cyclist Left-Turn Operation	WBL	EBL	NBL	SBL
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	One Lane Crossed	One Lane Crossed	Two or More Lanes Crossed
<b>Score</b>	<b>0</b>	<b>40</b>	<b>65</b>	<b>-30</b>	
<b>BLOS</b>	<b>F</b>	<b>D</b>	<b>C</b>	<b>F</b>	
<b>Target BLOS</b>	<b>B</b>				
<b>Transit</b>	<b>TLOS Inputs</b>				
	<b>Transit Facility</b>	<b>Mixed Traffic</b>			
	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay (if available)	≤ 10 sec	56-80 sec	36-55 sec	> 80 sec
	Example Transit Priority Treatment	-	-	-	-
	<b>TLOS</b>	<b>A</b>	<b>E</b>	<b>D</b>	<b>F</b>
<b>Target TLOS</b>	<b>D</b>				
<b>Target TLOS</b>	<b>E (D for frequent transit routes)</b>				
<b>Auto</b>	<b>AutoLOS Inputs</b>				
	Overall Intersection Volume to Capacity Ratio	0.91 to 1.00			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table			
	<b>AutoLOS</b>	<b>E</b>			
<b>Target AutoLOS</b>	<b>E</b>				

**Multi-Modal Level of Service - Intersections Form**

**Project:** Triangle Street Elementary School  
**Consultant:** Robinson Consultants Inc  
**Date:** Sep 25, 2025  
**Scenario:** 2032 Future

Intersection Name		Terry Fox Drive / Abbott Street			
OP Transect / Policy Area		Outer Urban or Suburban			
<b>Pedestrian</b>	<b>PLOS Inputs</b>				
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	4	1-3	1-3	1-3
	Median Refuge (≥2.7m)	No	No	No	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	100.0			
	Effective Walk Time (sec)	7.5	20.5	22.7	22.7
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR
	Right-Turn Geometry	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive
	Right-Turn Volume	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h	> 150 to 300 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m
	Cross-street Posted Speed (km/h)	70 km/h		40 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	> 100 veh/h	> 50 to 100 veh/h	> 50 to 100 veh/h	> 100 veh/h
	Left-Turn Opposing Lanes	-	≤ 1	≤ 1	-
	<b>Score</b>	<b>3.20</b>	<b>3.85</b>	<b>4.45</b>	<b>3.80</b>
<b>PLOS</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	
<b>Target PLOS</b>	<b>C</b>				
<b>Bicycle</b>	<b>BLOS Inputs</b>				
	<b>Cycling Route Classification</b>	<b>Cross-Town Bikeway</b>			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	24,500		11,100	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No
	Crossride Operation	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-
	Cyclist Left-Turn Operation	WBL	EBL	NBL	SBL
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	One Lane Crossed	One Lane Crossed	Two or More Lanes Crossed
<b>Score</b>	<b>0</b>	<b>20</b>	<b>65</b>	<b>-30</b>	
<b>BLOS</b>	<b>F</b>	<b>E</b>	<b>C</b>	<b>F</b>	
<b>Target BLOS</b>	<b>B</b>				
<b>Transit</b>	<b>TLOS Inputs</b>				
	<b>Transit Facility</b>	<b>Mixed Traffic</b>			
	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay (if available)	≤ 10 sec	56-80 sec	36-55 sec	> 80 sec
	Example Transit Priority Treatment	-	-	-	-
	<b>TLOS</b>	<b>A</b>	<b>E</b>	<b>D</b>	<b>F</b>
<b>Target TLOS</b>	<b>D</b>				
<b>Target TLOS</b>	<b>E (D for frequent transit routes)</b>				
<b>Auto</b>	<b>AutoLOS Inputs</b>				
	Overall Intersection Volume to Capacity Ratio	> 1.00			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table			
	<b>AutoLOS</b>	<b>F</b>			
<b>Target AutoLOS</b>	<b>E</b>				