

**New OCSB High School
5431 Fernbank Road, Stittsville
Transportation Impact
Assessment Report**

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TABLE OF CONTENTS

1.0	TIA Screening.....	5
2.0	Proposed Development.....	5
2.1	Study Area	6
3.0	Existing Conditions.....	6
3.1	Existing Road Network.....	6
3.2	Existing Study Intersections	7
3.3	Existing Driveways	10
3.4	Existing Active Transportation Network	11
3.5	Existing Transit Network	12
3.6	Existing Area Traffic Management Measures.....	13
3.7	Existing Traffic Volumes	13
3.8	Historical Collision Review	16
4.0	Planned Conditions.....	18
4.1	Road Network Modifications.....	18
4.2	Future Active Transportation	20
4.3	Future Background Developments	21
5.0	Development Generated Travel Demand	23
5.1	Trip Generation and Mode Shares	23
5.2	Auto Trip Distribution	26
5.3	Auto Trip Assignment	27
6.0	Study Area And Time Periods	30
6.1	Study Area	30
6.2	Study Time Periods.....	30
6.3	Horizon Years	30
6.4	Preliminary Background Network Travel Demands.....	30
6.5	Exemptions Review	30
7.0	Background Network Travel Demands	32
7.1	Existing Traffic Operations.....	32
7.2	Future Transportation Network Plans	33
7.3	Other Developments	33
7.4	Future Background Traffic Growth	33
7.5	Future Background Traffic Operations	33
8.0	Demand Rationalization.....	37
9.0	Development Design.....	38
9.1	Design for Sustainable Modes.....	38

9.2	Circulation and Access Review.....	39
10.0	Parking.....	39
10.1	Vehicle Parking Supply.....	39
10.2	Bicycle Parking Supply	40
11.0	Boundary Street Design.....	40
11.1	Boundary Segment Multi-Modal Level of Service	40
11.2	Road Safety	41
12.0	Transportation Demand Management	42
12.1	Context for TDM.....	42
12.2	Need and Opportunity	42
12.3	TDM Program	42
13.0	Transit.....	42
13.1	Route Capacity.....	42
13.2	Transit Priority	42
14.0	Intersection Design	43
14.1	Future Total Traffic Operations Anlysis	43
14.2	Access Location and Design.....	48
14.3	Access Sightlines.....	49
14.4	Access Control.....	50
14.5	Access Design.....	50
14.6	Intersection Control	50
14.7	Intersection Design	52
15.0	Summary and Recommendations.....	53

LIST OF TABLES

Table 1. Available Traffic Data	14
Table 2. Existing (2025) Pedestrian and Bike Volumes	14
Table 3. Kanata / Stittsville - Mode Share (Trans 2011 O-D Survey)	16
Table 4. Area Collision History (2019 – 2024) Summary.....	17
Table 5. Cope Drive at Terry Fox Drive Intersection Collisions	17
Table 6. Terry Fox Drive at Fernbank Road Intersection Collisions.....	18
Table 7. Site Occupancy Estimates	23
Table 8. Staff Trips by Mode Share.....	23
Table 9. Student Trips – Person Trips by Mode.....	25
Table 10. Development-Generated Person Trip Estimates	26
Table 11. Preliminary Trip Distributions – AM Peak Hour Inbound Auto Trips	27
Table 12. Trip Assignment – AM Peak Hour Inbound Auto Trips	28

Table 13. Trip Assignment – AM Peak Hour Outbound Trips.....	28
Table 14. Trip Assignment – PM Peak Hour Outbound Trips.....	28
Table 15. Preliminary TIA Module Exemptions Review	30
Table 16: Traffic Operations Analysis - Existing Conditions	32
Table 17: Traffic Operations Analysis - Future Background 2028	36
Table 18: Traffic Operations Analysis - Future Background 2033	36
Table 19. Site Parking Requirements	40
Table 20. Site Bicycle Parking Requirements	40
Table 21. Boundary Road Segments MMLOS Evaluation	41
Table 22: Traffic Operations Analysis - 2028 Total Traffic	46
Table 23: Traffic Operations Analysis - 2033 Total Traffic	46
Table 24: City of Ottawa Private Approach Bylaw Review	48
Table 25: Intersection Sight Distance Requirements – Case B1	50
Table 26: Traffic Operations Analysis - 2033 Total Traffic, Terry Fox Widening	51
Table 27. OTM Book 12 Signal Warrant Evaluation 2033 – Fernbank / Rouncey	51
Table 28: All-Way Stop Control Warrant Review - Fernbank / Rouncey	52
Table 29: Study Area Signalized Intersection MMLOS Analysis	52

LIST OF FIGURES

Figure 1. Site Location and Local Road Network.....	5
Figure 2. Study Area Road Segments and Intersections	6
Figure 3. Cope Drive at Terry Fox Drive	7
Figure 4. Rouncey Road at Cope Drive	8
Figure 5. Atlas Terrace at Cope Drive	8
Figure 6. Atlas Terrace at Arosa Way.....	8
Figure 7. Rouncey Road at Atlas Terrace.....	9
Figure 8. Fernbank Road at Rouncey Road.....	9
Figure 9. Fernbank Road at Terry Fox Drive	9
Figure 10. Fernbank Road at Walmart access.....	10
Figure 11. Existing Area Driveways	10
Figure 12. Existing Area Active Transportation Facilities (GeoOttawa).....	11
Figure 13. Existing Regional Active Transportation Facilities (GeoOttawa)	12
Figure 14. Existing Area Transit Routes (OC Transpo, 2025)	12
Figure 15. Existing Area Transit Stops.....	13
Figure 16. Existing (2025) Vehicle Traffic Volumes.....	15
Figure 17. Proposed Major Road Network (Fernbank Community CDP, 2009)	18
Figure 18. Ultimate Road Network.....	19
Figure 19. Priority Road Network	19
Figure 20. Needs-Based Road Network.....	19
Figure 21. Priority Transit Network.....	20
Figure 22. Needs-Based Transit Network	20

Figure 23. Proposed Cycling Projects.....20

Figure 24. Ultimate Cycling Network20

Figure 25. Fernbank Community Design Plan - Pathways.....21

Figure 26. Planned Developments.....22

Figure 27. Proposed High School Catchment Area (OCSB)24

Figure 28. Trip Assignment – Vehicle Trips29

Figure 29. 2028 Future Background Traffic Volumes.....34

Figure 30. 2033 Future Background Traffic Volumes.....35

Figure 31: Future Total 2028 Traffic Volumes44

Figure 32: Future Total 2033 Traffic Volumes45

LIST OF APPENDICES

Appendix A - TIA Screening Report

Appendix B - Proposed Site Plan Concept

Appendix C - Traffic Data

Appendix D - TRANS Origin-Destination Survey

Appendix E – Collision Data

Appendix F – Existing Traffic Analysis

Appendix G – Future Background Traffic Analysis

Appendix H – TDM-supportive Development and Design and Infrastructure Checklist

Appendix I – Autoturn Swept Path Review

Appendix J – MMLOS Analysis

Appendix K – TDM Measures Checklist

Appendix L – Future Total Traffic Analysis

Appendix M – Fernbank / Rouncey Signal Warrant and Roundabout Screening

1.0 TIA SCREENING

Robinson Consultants Inc. (RCI) has been retained by N45 Architecture Inc. to prepare a Transportation Impact Assessment (TIA) in support of a Site Plan Control application for a new high school at the property municipally known as 5431 Fernbank Road in Stittsville, Ontario. A TIA Screening Report was submitted to the City in January 2025 and is provided in **Appendix A** of this Scoping Report. Based on the TIA screening, the trip generation and safety triggers were met, requiring the preparation of a TIA. The location trigger was not met.

2.0 PROPOSED DEVELOPMENT

The Ottawa Catholic School Board (OCSB) is planning to construct a new high school at the property municipally known as 5431 Fernbank Road in the Fernbank neighbourhood of Stittsville, City of Ottawa. The existing site is vacant with a site area of approximately 18.27 acres (73,967 m²). The site lies within the Fernbank community development area that commenced construction around 2017. A site in the area was previously identified for a high school development within the Fernbank Community Design Plan (CDP), completed in 2009. The site has been changed to the present site. The subject site location and surrounding road context is illustrated in Figure 1. The proposed site plan is included as **Appendix B**.

The existing zoning designation for 5431 Fernbank Road is Minor Institutional Zone, Sub-zone A (I1A). As per zoning for I1A, school use is permitted. The property is bounded by Atlas Terrace to the west, Cope Drive to the north, Fernbank Road to the south, and the Walmart access road to the east.

The proposed development will include a two-storey school building, with a Gross Floor Area (GFA) of approximately 10,000 m² including 62 middle and high school classrooms accommodating an anticipated total of 1526 staff and students.

The site is anticipated to have a total of 180 parking spaces for staff and visitors including eight barrier free accessible parking spaces. The site is also anticipated to have a total of 120 bicycle parking spaces situated adjacent to the building access points. Vehicle access to the parking area is proposed via full-move accesses on Atlas Terrace and Fernbank Road; the site plan also includes an additional exit onto Atlas Terrace and an entry on Fernbank Road for the bus loop.

The development will be built in a single phase with an estimated build-out date in 2028.



Figure 1. Site Location and Local Road Network

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 intersections:

- Cope Drive and Rouncey Road
- Cope Drive and Terry Fox Drive
- Terry Fox Drive and Fernbank Road
- Fernbank Road and Cope Drive
- Atlas Terrace and Cope Drive
- Atlas Terrace and Arosa Way

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

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.

Cope Drive is classified as a Major Collector roadway that generally travels east-west from Fernbank Road in Stittsville to Eagleson Road in Kanata, where it continues easterly as Cadence Gate. A short portion of roadway between the Fernbank community, west of Robert Grant Road, and Shea Road, is currently under construction. The road is within a 40 km/h neighbourhood speed limit area. Cope Drive is configured with one lane in each direction with no painted centreline. A multi-use pathway is present on the north side of the roadway from Terry Fox Drive, continuing westerly through the Fernbank neighbourhood, while a sidewalk is present on the south side of the roadway. Within the study area, the road is bound by low-density residential housing, the future school site, and commercial plazas near Terry Fox Drive.

Rouncey Road is classified as a Major Collector roadway that generally travels north-south from Fernbank Road to Abbott Street East, where it continues northerly as Cranesbill Road towards a future connection to Robert Grant Avenue. The road is within a 40km/h neighbourhood speed limit area. Rouncey Road is configured with one lane in each direction with no painted centreline. Sidewalks are present on both sides of the roadway. Within the study area, the road is bound by low-density residential housing, Rubicon Park and Shingwàkons Public School.

Terry Fox Drive is a classified as an Arterial roadway that generally 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 cross-section with paved shoulders. A multi-use pathway also runs along the west side of the road through the study area. 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 at the except of right-in-right-out entrances to the commercial plazas. Terry Fox Drive is also designated as a truck route permitting full loads.



Figure 2. Study Area Road Segments and Intersections

Atlas Terrace is classified as a Local roadway that generally travels from Cope Drive in the north to Rouncey Road in the west and lies fully within the Fernbank community development area. The road is also within a 40km/h speed limited area. Atlas Terrace is configured with one lane in each direction with no painted centreline. A sidewalk is present on the west/north side of the roadway along its full length and on the south side of the roadway, where residential development is present. There are no cycling facilities or identified parking restrictions along the corridor. Within the study area, Atlas Terrace is bounded by low- and medium-density residential development, the future school site and Bob Mills Park.

Arosa Way is classified as a Local roadway that generally travels from Atlas Terrace in the east to Atlas Terrace in the south and lies fully within the Fernbank community development area. The road is also within a 40km/h speed limited area. Arosa Way is configured with one lane in each direction with no painted centreline. There are no pedestrian facilities, cycling facilities or identified parking restrictions along the corridor. Within the study area, Arosa Way is bounded by low-density residential development.

Fernbank Road is classified as an Arterial roadway that generally travels east-west from Dwyer Hill Road in rural Goulbourn to Eagleson Road in Kanata, providing connectivity between rural areas in Goulbourn, Stittsville and Kanata. Fernbank Road within the study area has a posted speed limit of 60 km/h and has a rural cross-section with paved shoulders. A multi-use pathway also runs along the north side of the road from Terry Fox Drive to the Walmart entrance. Fernbank Road is not a designated truck route.

3.2 Existing Study Intersections

The following sections provide a description of the study area intersections.

3.2.1 Cope Drive and Terry Fox Drive

Cope Drive and Terry Fox Drive, illustrated in Figure 3, is a four-leg signalized intersection. All approaches include one through lane and one left turn lane in each direction. Left turn lanes on the north, south, east and west approaches have 52m, 46m, 53m and 67m of storage space, respectively. The Terry Fox Drive north approach has an auxiliary right turn lane with approximately 146m of storage space. Sidewalks are present on both sides of the Cope Drive east approach, and the south side of the Cope Drive west approach. A multi-use pathway is present along the west side of Terry Fox Drive and on the north side of the west approach of Cope Drive. There are pedestrian crossings at all intersection approaches, however, no cross-rides are present. Protected-permissive movements are present for the WBL and SBL movements.



Figure 3. Cope Drive at Terry Fox Drive

3.2.2 Rouncey Road and Cope Drive

Cope Drive and Rouncey Road, illustrated in Figure 4, is a four-leg single-lane roundabout with an approximately 28m inscribed circle diameter including a 3m 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 in all directions, except the north side of the Cope Drive approaches, which continue as multi-use pathways. It is noted that while proper transitions from the multi-use pathways to on-street are present for cyclists on all sides where transitions to sidewalks are present, this is not the case for the eastbound Cope Drive movement. The multi-use pathway on the south approach west side extends south of the Shingwàkons Public School drop-off area.



Figure 4. Rouncey Road at Cope Drive

3.2.3 Atlas Terrace and Cope Drive

Cope Drive and Atlas Terrace, illustrated in Figure 5, is a three-leg, one-way stop-controlled intersection. Stop control is provided for the south approach of Atlas Terrace, while Cope Drive is free flow for traffic. All approaches consist of one shared lane. Sidewalks and cycle tracks are present on both sides of Abbott Street East. A sidewalk is also present on the west side of the Atlas Street approach and the south side of the Cope Drive approaches. A multi-use pathway is present on the north side of the Cope Drive approaches while a multi-use pathway continues north to Paseana Place and Constantine Luty Park from the multi-use pathway on the north side of Cope Drive. The east-west pedestrian crossing on the Atlas Terrace has no painted demarcations.

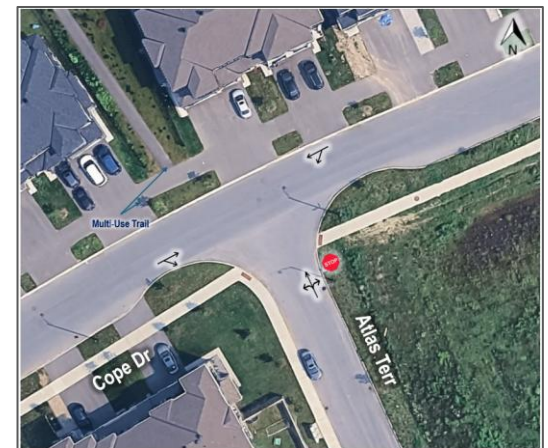


Figure 5. Atlas Terrace at Cope Drive

3.2.4 Atlas Terrace and Arosa Way

Atlas Terrace and Arosa Way, illustrated in Figure 6, is a three-leg stop-controlled intersection. Stop control is provided for the west approach of Arosa Way while Atlas Terrace is free flow for traffic. All approaches consist of one shared lane. Sidewalks are present on the west side of Atlas Terrace. There are no painted crosswalks.

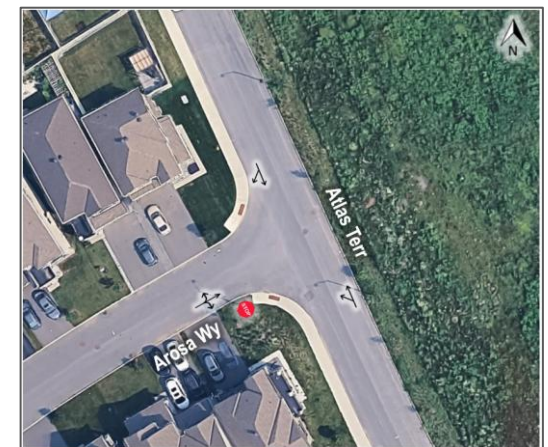


Figure 6. Atlas Terrace at Arosa Way

3.2.5 Atlas Terrace and Rouncey Road

Atlas Terrace and Rouncey Road, illustrated in Figure 7, is a three-leg stop-controlled intersection. The approaches include single shared lanes. Sidewalks are present on both sides of Rouncey Road and Atlas Terrace. A north-south pedestrian crossing is provided on Atlas Terrace, though it is not painted.

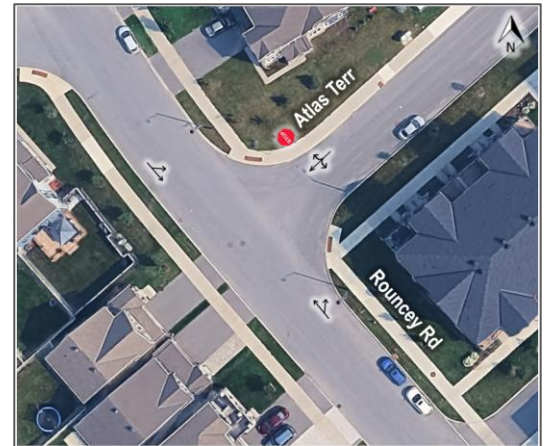


Figure 7. Rouncey Road at Atlas Terrace

3.2.6 Rouncey Road and Fernbank Road

Rouncey Road and Fernbank Road, illustrated in Figure 8, is a three-leg, one-way stop-controlled intersection. Stop control is provided for the north approach of Rouncey Road, while Fernbank Road is free flow for traffic. The Rouncey Road approach consists of one shared lane for all movements. The Fernbank Road west approach includes a through lane and an auxiliary left turn lane with 40m of storage space and the Fernbank Road east approach includes a through lane and an auxiliary right turn lane with 50m of storage space. Sidewalks are present on both sides of the Rouncey Road approach while a private sidewalk is present on the north side of the Fernbank Road east approach. The east-west pedestrian crossing on the Rouncey Road approach has no painted crosswalks.

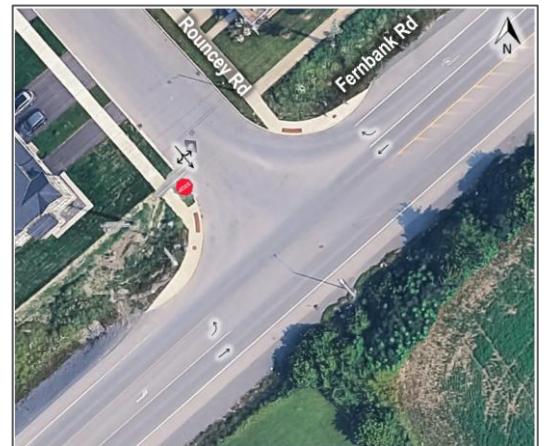


Figure 8. Fernbank Road at Rouncey Road

3.2.7 Terry Fox Drive and Fernbank Road

Terry Fox Drive and Fernbank Road, illustrated in Figure 9, is a four-leg signalized intersection. All approaches include one through lane and one left turn lane in each direction. Left turn lanes on the north, south, east and west approaches have 100m, 90m, 80m and 120m of storage space, respectively. The Terry Fox Drive north approach and Fernbank Road west approach have auxiliary right turn lanes with approximately 138m, and 100m of storage space, respectively. The Fernbank Road east approach has a right turn channel and auxiliary lane with approximately 115m of storage space. Sidewalks are present on both sides of the Fernbank Road east approach, and the north side of the Fernbank Road west approach. An approximately 30m long sidewalk extends west of the intersection on the south side of Fernbank Road to service the bus stop on the southwest corner of the intersection. A multi-use pathway is present along the west side of Terry Fox Drive and on the north side of the west approach of Fernbank Road. A multi-use pathway begins and continues south on the west side of Fernbank Road approximately 150m south of the intersection. There are pedestrian crossings at all



Figure 9. Fernbank Road at Terry Fox Drive

intersection approaches, however, no cross-rides are present. Approximately 35m, 165m and 350m floating bike lanes are present on the Fernbank Road west, east and Terry Fox Drive north approaches. Protected-permissive movements are present for the SBR, EBL, and NBL movements.

3.2.8 Fernbank Road and Walmart Access

Fernbank Road and the Walmart access, illustrated in Figure 10, is a three-leg signalized intersection. The Walmart entrance approach includes a singular lane for all southbound movements while the Fernbank Road approaches include a through lane and an auxiliary lane for turn movements into the Walmart. The eastbound auxiliary left turn lane and westbound auxiliary right turn lane have approximately 175m and 50m respectively. Sidewalks are present on the west side of the Walmart entrance and the north side of the Fernbank Road east approach. A multi-use pathway is present along the north side of the east approach of Fernbank Road. There are pedestrian crossings at all intersection approaches, however, no cross-rides are present. An approximately 125m floating bike lane is present on the Fernbank Road east approach. A protected-permissive movement are present for the WBL movement.

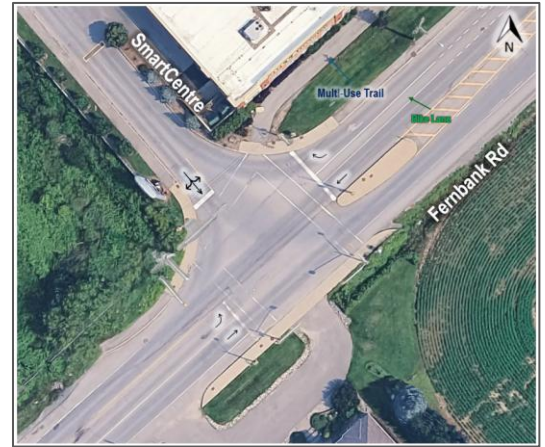


Figure 10. Fernbank Road at Walmart access

3.3 Existing Driveways

As illustrated in Figure 11, existing area driveways within a 200m radius of the proposed Atlas Terrace and Fernbank Road site accesses consist of residential (single-family detached homes) private driveways.



Figure 11. Existing Area Driveways

3.4 Existing Active Transportation Network

Area active transportation facilities are illustrated in Figure 12, while larger regional cycling facilities are illustrated in Figure 13. Sidewalks are present on Atlas Terrace, Arosa Way, Cope Drive, Rouncey Road, and sections of Fernbank Road, in addition to several surrounding local streets. There are several pathway connections, providing enhanced neighbourhood connectivity, particularly connecting Atlas Terrace to Paseana Place and Rouncey Road to Arosa Way. A multi-use pathway is present on the north side of Cope Drive, west of Terry Fox Drive, along west side of Terry Fox Drive between Fernbank Road and the stormwater management facility north of Cope Drive, and along the north side of Fernbank Road between Terry Fox Drive and the Walmart access. Cope Drive east of Terry Fox is identified as a suggested bicycle route, however, no designated cycling facilities are provided. All other area local roadways have no dedicated cycling facilities. Terry Fox Drive and Fernbank Road have paved shoulders within the study area. Within the larger regional area, cycle tracks are present along the Robert Grant Avenue corridor and along Abbott Street East, east of Robert Grant Avenue. The multi-use pathway on the north side of Cope Drive continues west of Robert Grant Avenue, where it will connect to Shea Road and cycle tracks beyond this point, on Cope Drive, once construction of the neighbourhood is complete. Bike lanes are present along Hazeldean Road, west of Terry Fox. The Ottawa-Carleton Trailway (part of the Trans-Canada Trail) runs east-west through the region, connecting Stittsville to Kanata and eastward towards Bells Corners. This trail is a stone dust multi-use pathway.

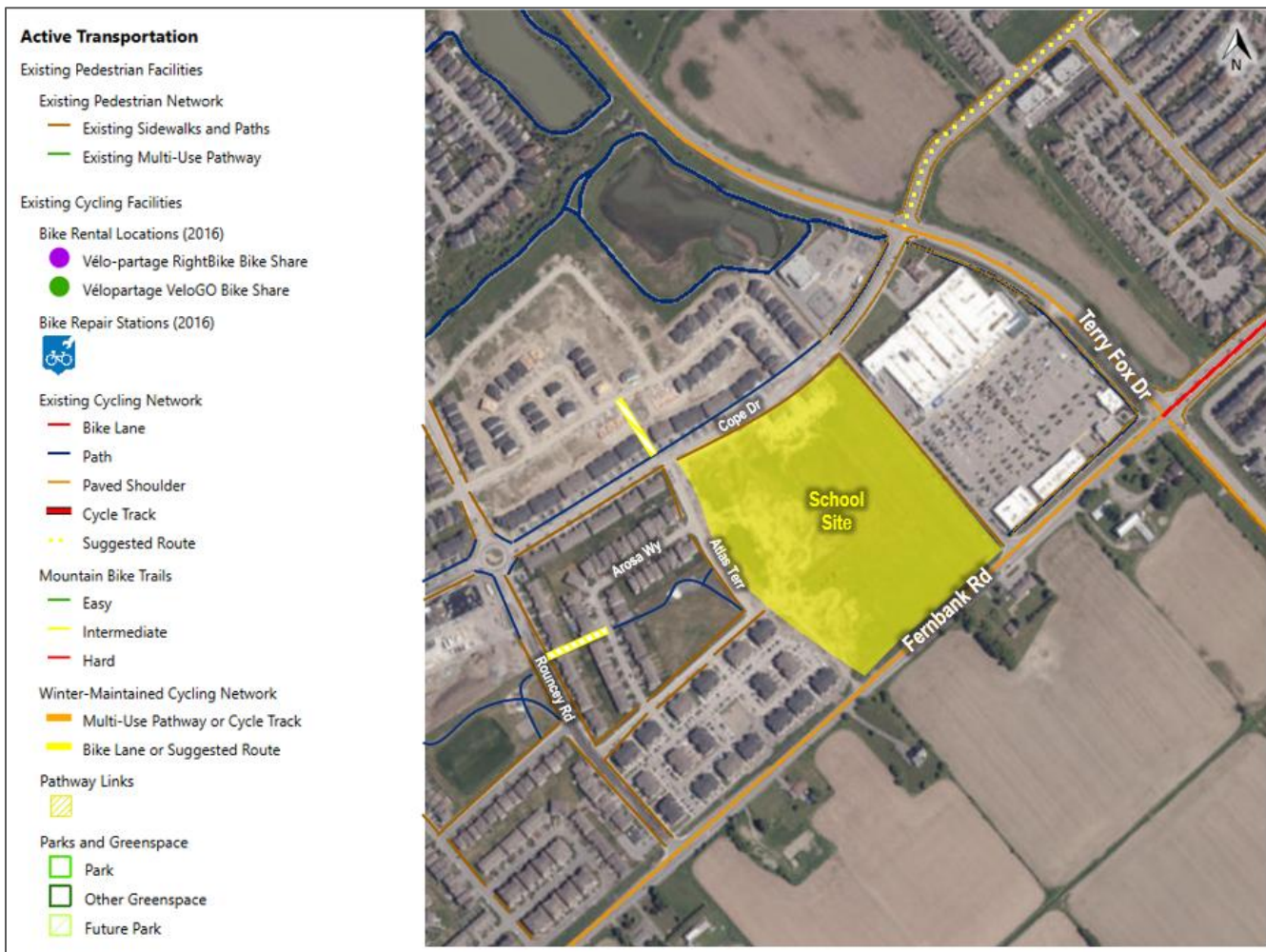


Figure 12. Existing Area Active Transportation Facilities (GeoOttawa)



Figure 13. Existing Regional Active Transportation Facilities (GeoOttawa)

3.5 Existing Transit Network

The existing area transit network is illustrated in Figure 14. Local route 67 provides service to the proposed high school along Cope Drive and connects the Terry Fox Transit Station at Kanata Centrum in the north to the Fernbank neighbourhood in the south, including service along Cope Drive, Terry Fox Drive, Fernbank Road, Robert Grant Avenue and Rouncey Road. Peak hour service also connects route 67 to Tunney's Pasture Station and OC Transpo's Confederation Line (Line 1) in Ottawa. Local route 60 provides connectivity between Terry Fox Station (and Tunney's Pasture Station during peak hours), and Cope Drive via Terry Fox Drive, within the study area. Local route 168 provides service between Terry Fox Station and Bridlewood, with service along Cope Drive, Rouncey Road, Fernbank Road and Terry Fox Drive.

As illustrated in Figure 15, area transit stops are located along Cope Drive, serving local transit routes 67 and 168, which both have an approximately 30-minute frequency during daytime hours. The closest transit stops located on Cope Drive at Paseana is approximately 200m walking distance from the site entrance.

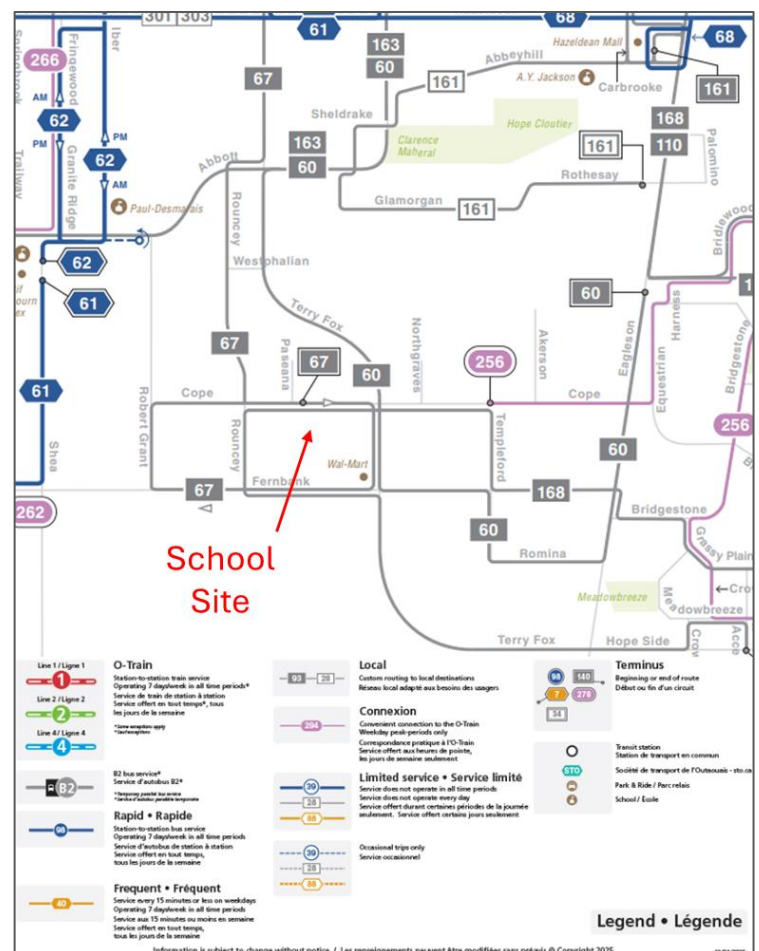


Figure 14. Existing Area Transit Routes (OC Transpo, 2025)



Figure 15. Existing Area Transit Stops

3.6 Existing Area Traffic Management Measures

Review of the area transportation network indicates the presence of seasonal traffic calming measures (flex posts) on Rouncey Road, north of Cope Drive. No permanent traffic calming measures were identified.

3.7 Existing Traffic Volumes

Turning Movement Count (TMC) data for the study area intersections have been obtained from the City of Ottawa and RCI traffic count surveys as a basis for operational analysis. Table 1 summarizes the provided traffic data used for this study. The full 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
Cope Drive at Rouncey Road	Roundabout	Weekday AM, Mid-day, and PM	17-Jan-23	08:30 - 09:30	15:45 - 16:45
Cope Drive at Terry Fox Drive	Signalised	Weekday AM, Mid-day, and PM	07-Sep-22	08:15 - 09:15	16:00 - 17:00
Fernbank Road at Rouncey Road	Stop Control	Weekday AM, Mid-day, and PM	07-Mar-23	08:15 - 09:15	15:45 - 16:45
Fernbank Road at Smart Centre Entrance	Signalised	Weekday AM, Mid-day, and PM	31-Jan-24	08:15 - 09:15	16:00 - 17:00
Terry Fox Drive at Fernbank Road	Signalised	Weekday AM, Mid-day, and PM	14-Aug-24	08:00 - 09:00	16:15 - 17:15
Atlas Terrace at Arosa Way	Stop Control	Weekday AM, and PM	03-Sep-25	07:30 - 08:30	16:00 - 17:00
Atlas Terrace at Cope Drive	Stop Control	Weekday AM, Mid-day, and PM	01-Oct-25	08:15 - 09:15	16:30 - 17:30
Atlas Terrace at Rouncey Road	Stop Control	Weekday AM, Mid-day, and PM	01-Oct-25	08:30 - 09:30	15:45 - 16:45

Existing (2025) traffic volumes were developed for the morning and afternoon peak hours based on the above noted TMC data. Peak hour volumes from the provided traffic data are summarized in Figure 16. Active transportation volumes at the study intersections are summarized in Table 2.

Table 2. Existing (2025) Pedestrian and Bike Volumes

Location	AM Peak				PM Peak			
	N	S	E	W	N	S	E	W
Pedestrian Volumes								
Cope Drive at Rouncey Road	2	3	0	0	5	1	0	0
Cope Drive at Terry Fox Drive	2	4	1	4	1	18	2	12
Fernbank Road at Smart Centre Entrance	1	0	0	0	0	0	0	0
Terry Fox Drive at Fernbank Road	12	1	2	0	19	7	13	5
Atlas Terrace at Arosa Way	0	0	1	13	1	2	1	16
Atlas Terrace at Cope Drive	0	9	0	1	0	10	3	4
Atlas Terrace at Rouncey Road	0	3	22	0	0	5	14	0
Bike Volumes								
Cope Drive at Terry Fox Drive	1	1	1	1	2	6	6	6
Fernbank Road at Smart Centre Entrance	0	0	0	1	0	0	0	0
Terry Fox Drive at Fernbank Road	1	0	0	4	2	1	3	8
Atlas Terrace at Arosa Way	3	1	1	0	0	0	3	0
Atlas Terrace at Cope Drive	0	0	0	0	5	3	4	0
Atlas Terrace at Rouncey Road	0	0	2	2	0	0	1	2
NB - Northbound SB - Southbound EB - Westbound WB - Westbound								

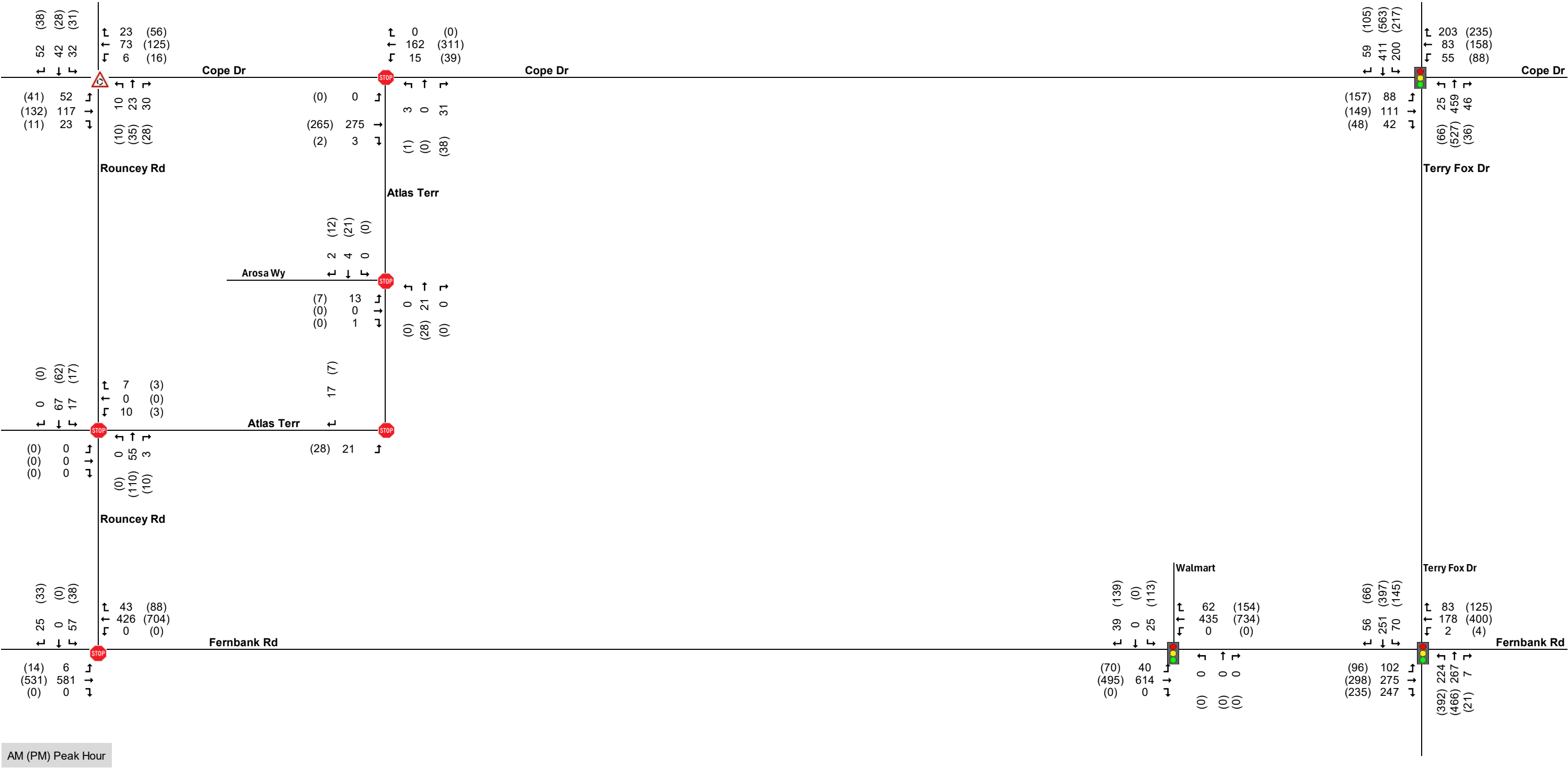


Figure 16. Existing (2025) Vehicle Traffic Volumes

3.7.1 Existing Mode Shares

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 D**.

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

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

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

It is noted that 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 six-year (2019-2024) collision data was provided by the City of Ottawa, and included in **Appendix E**. The data is summarized in Table 4. Most intersections within the study area have relatively few collisions except for the Cope Drive at Terry Fox Drive and Fernbank Road at Terry Fox Drive intersection. The Cope Drive at Terry Fox Drive intersection had 24 collisions, including 10 which resulted in a non-fatal injury. 12 turning movement collisions were recorded at this intersection, including nine which involved a left-turning southbound vehicle colliding with a northbound vehicle. Four of these collisions resulted in a non-fatal injury, one of which occurred in the overnight hours. One collision involved a pedestrian and a right-turning eastbound vehicle, resulting in a non-fatal injury. The Fernbank Road at Terry Fox Drive intersection had 48 collisions, including 12 which resulted in a non-fatal injury. 13 collisions involved angle collisions, of which eight resulted from vehicles running red lights and five involved right-turning vehicles. Turning movements resulted in 16 collisions, six of which involved a left-turning northbound vehicle colliding with a southbound vehicle, and six of which involved a southbound left-turning vehicle colliding with a northbound vehicle. 14 rear-end collisions were also reported at the intersection, six of which involved eastbound vehicles, and two of which resulted in a non-fatal injury. Three of the reported collisions resulting in a non-fatal injury were the result of a southbound left-turning vehicle colliding with a northbound vehicle, one of which occurred at night during snowy conditions. One collision involved an eastbound right-turning vehicle colliding with a southbound cyclists, resulting in a non-fatal injury. A total of 22 collisions within the study area resulted in a non-fatal injury and no fatal collisions were recorded. It should be noted that collision data predates full completion of the residential subdivision. Overall, there is a trend of collisions between through traffic movements and left turns at the intersections of Terry Fox Drive with Fernbank Road and Cope Drive, which may be related to traffic speeds and the permissive left turn operation; operations at these intersections will be reviewed in more detail during TIA analysis.

Table 4. Area Collision History (2019 – 2024) Summary

Location	Collision Frequency										
	2019	2020	2021	2022	2023*	2024	Total	Most Common Initial Impact Type	Pedestrian	Bicycle	Non-Fatal Injuries
At Intersection / Intersection Related Collisions											
Cope Drive at Terry Fox Drive	5	6	5	3	0	5	24	Turning Movement	1	0	10
Fernbank Road at Rouncey Road	0	0	0	0	0	1	1	Sideswipe	0	0	0
Fernbank Road at Smart Centre Entrance	3	0	0	3	0	1	7	Turning Movement	0	0	0
Terry Fox Drive at Fernbank Road	9	5	12	10	1	11	48	Turning Movement	0	1	12
Cope Drive at Rouncey Road	0	0	1	0	0	0	1	Angle	0	0	0
Midblock Collisions (Non-Intersection / At / Near Private Driveway)											

*Collision data provided does not cover all of 2023.

Table 5. Cope Drive at Terry Fox Drive Intersection Collisions

Impact Type	# of Collisions	NB	SB	EB	WB
Angle	3	SBT-EBL (1) / WBT-NBT (1) / NBT-WBT (1)			
Turning Movement	12	SBL-NBT (9) / NBL-SBT (2) / EBL-WB (1)			
Sideswipe	1	-	1	-	-
Rear End	5	1	1	-	3
SMV Other	2	-	-	1	1
Other	1	SB-NB (1)			

Table 6. Terry Fox Drive at Fernbank Road Intersection Collisions

Impact Type	# of Collisions	NB	SB	EB	WB
Angle	13	WBT-SBT (3) / EBT-NBT (1) / SBT-EBL (1) / WBR-NBT (2) / EBR-SBT (2) / EBR-NBT (1) / WBT-SBT-EBR (1) / NBT-WBT (1) / EBT-NBT-WBT (1)			
Turning Movement	16	NBL-SBT (6) / SBL-NBT (6) / WBR-WBT (1) / EBL-NBT (1) / NBL-WBT (1) / NBL-WBL (1)			
Sideswipe	2	-	-	2	-
Rear End	14	3	1	6	4
Approaching	2	NBT-SBT (2)			
SMV Other	1	-	1	-	-

4.0 PLANNED CONDITIONS

4.1 Road Network Modifications

Road network modifications are based on the current City of Ottawa Transportation Master Plan (TMP) which was adopted in 2025. The Fernbank Community Design Plan (CDP) was 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 17. Much of the proposed road network has already been constructed or is anticipated to be constructed through continued development of the community. It is noted however that the original school site in the CDP was located north of Cope Drive, and has since been shifted to the current location to the south.

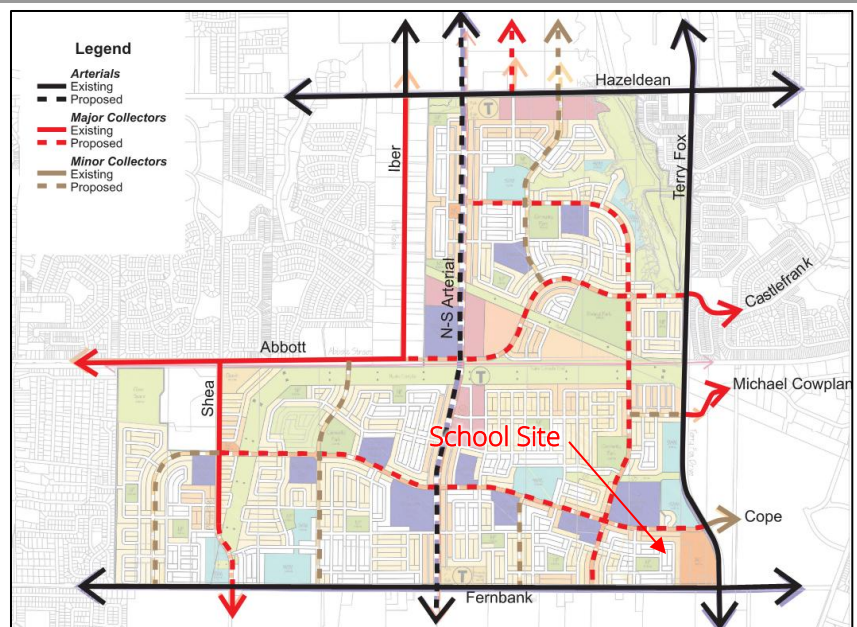


Figure 17. Proposed Major Road Network (Fernbank Community CDP, 2009)

The current City of Ottawa TMP (2025) Ultimate, Priority, and Needs-Based Network concepts indicate a number of other area network modifications as illustrated in Figure 18, Figure 19, and Figure 20, respectively. As shown, Terry Fox Drive is also anticipated to be widened from two to four lanes, south of Castlefrank Road. Road Urbanisation and Mainstreet Improvement projects are also expected along Shea Road, among other existing rural cross-section roads.

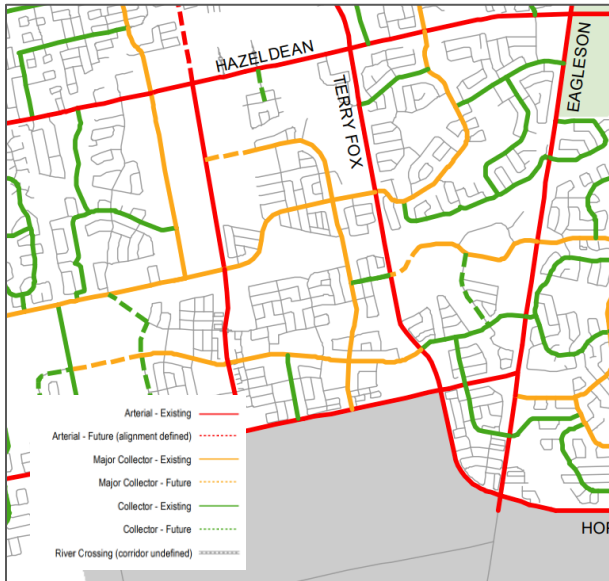


Figure 18. Ultimate Road Network

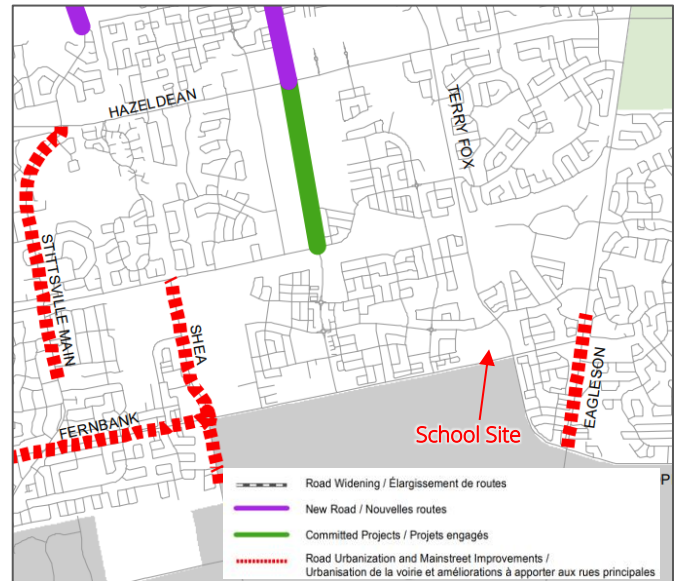


Figure 19. Priority Road Network

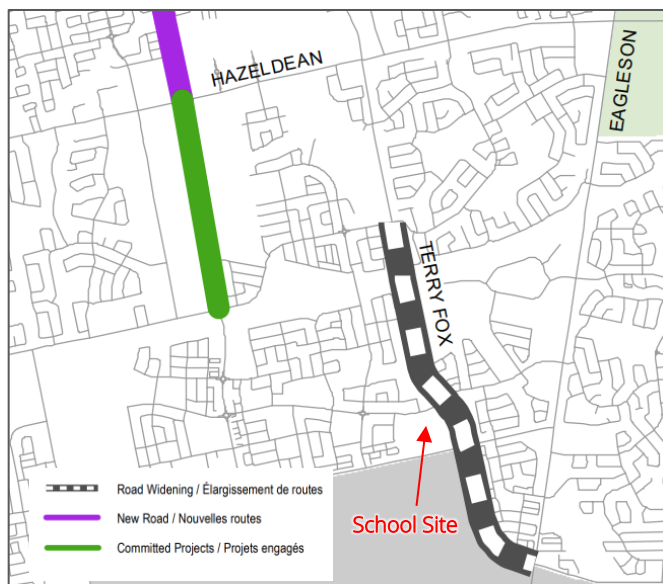


Figure 20. Needs-Based Road Network

The current City of Ottawa 2025 TMP Rapid Transit and Transit Priority Network and Ultimate Transit Network are illustrated in Figure 21 and Figure 22, respectively. Some additional potential changes to the study area transit service are expected. A Bus Rapid Transit (BRT) is proposed to travel along Robert Grant Avenue as part of the Needs-based network, but the priority network only includes the segment north of Hazeldean Road. Fernbank Road is also identified as a transit priority corridor (isolated measures) in both the Needs Based and priority networks.

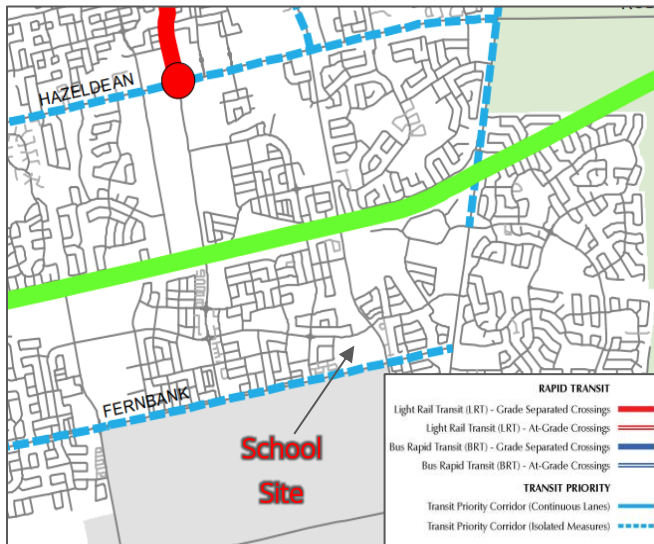


Figure 21. Priority Transit Network

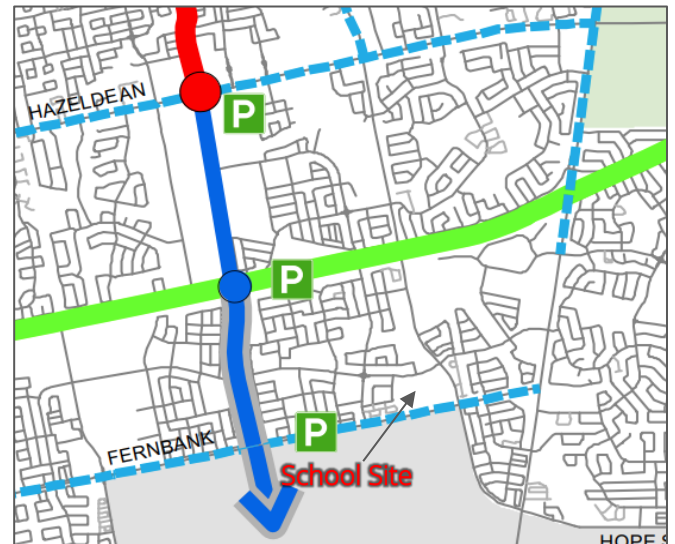


Figure 22. Needs-Based Transit Network

4.2 Future Active Transportation

Figure 23 and Figure 24 illustrate the City of Ottawa 2025 TMP Ultimate Cycling Network Concept and Proposed Cycling Projects, respectively. 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 is also proposed as a future Cross-town Bikeway. Fernbank Road, Cope Drive and Rouncey Road, among other regional roads are currently part of, or proposed to be part of the Primary Cycling Network. Proposed cycling projects as part of the first phase include improvements to the Terry Fox Pathway, while a later phase pathway is proposed along the Carp River corridor between Terry Fox Drive and Hazeldean Road. No pedestrian projects are proposed within close proximity of the proposed High School.

The Fernbank CDP identifies the anticipated pedestrian pathways upon full build-out, illustrated in Figure 25. While many are already constructed, continued development of the community will see additional pathways in the neighbourhood to connect towards Shea Road, among other regional destinations.

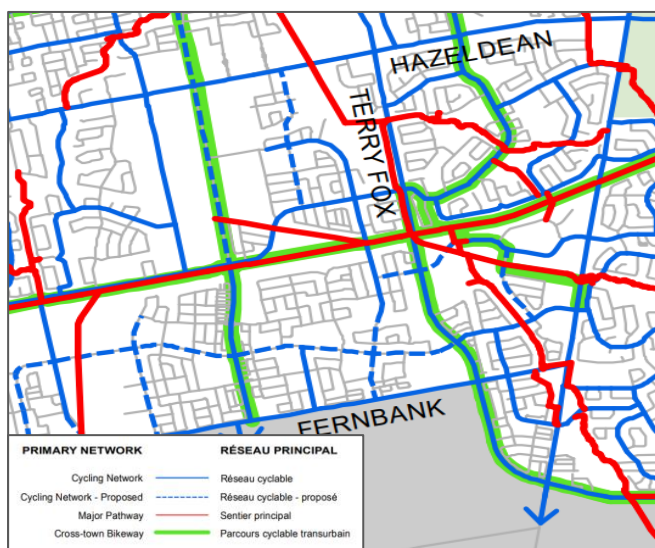


Figure 24. Ultimate Cycling Network

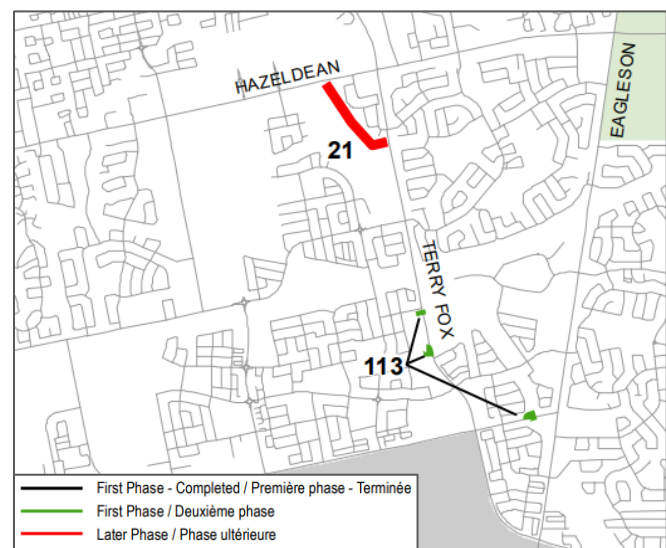


Figure 23. Proposed Cycling Projects

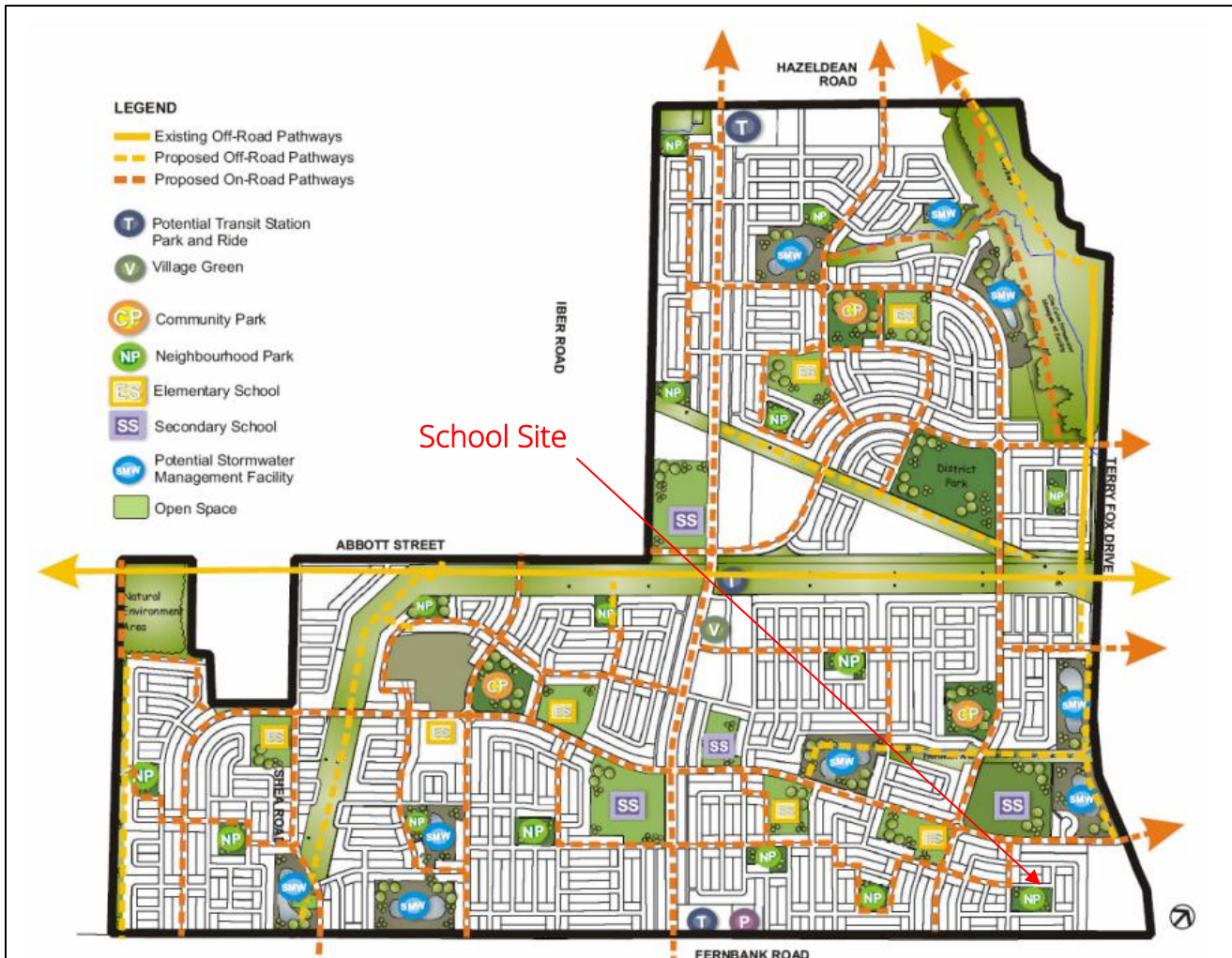


Figure 25. Fernbank Community Design Plan - Pathways

4.3 Future Background Developments

One active development application was identified within the vicinity of the site, which did not pass TIA screening. As such, no TIA report has been provided. Volume assignment is assumed to have been included as part of background volumes on the TRANS model. Planned developments in the vicinity of the study area are illustrated in Figure 26.

- **80 – 151 Cope Drive & 150 - 170 Akerson Road** are proposed developments located along Akerson Road and Cope Drive in Kanata South, east of Terry Fox Drive. The development is expected to include 2 semi-detached, 50 townhomes and 96 back-to-back townhouse dwellings.

Approved developments which have not begun construction:

- **5618 Hazeldean Road** is a proposed plan of subdivision, located northwest of the study area. The residential subdivision is expected to include 349 detached dwelling units, 527 townhouses, and 461 condo units. The planned development also includes lands for school facilities, parkland, mixed-use blocks, natural features, and a stormwater management pond. A Community Transportation Study was prepared by Novatech in November 2016 and revised in February and May 2020.
- **5315 Abbott Street** is a secondary school extension. The proposed development includes an addition to the existing French Catholic School located within the northwest 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.

- **5331 Fernbank Road & 1039 Terry Fox Drive** is a draft plan of subdivision including 55 single detached dwellings and approximately 129 townhouse units along with a 0.96-hectare neighbourhood park. The proposed development is located in South Kanata in the northeast quadrant of Terry Fox Drive and Cope Drive. The TIA was completed by Novatech in October 2018 and revised in March 2019.

Approved developments which have begun construction:

- **360 Bobolink Ridge** is a plan of subdivision. 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. The development would include a total of 407 rental apartments. Construction began in August 2024 and is expected to be complete by the summer of 2025.

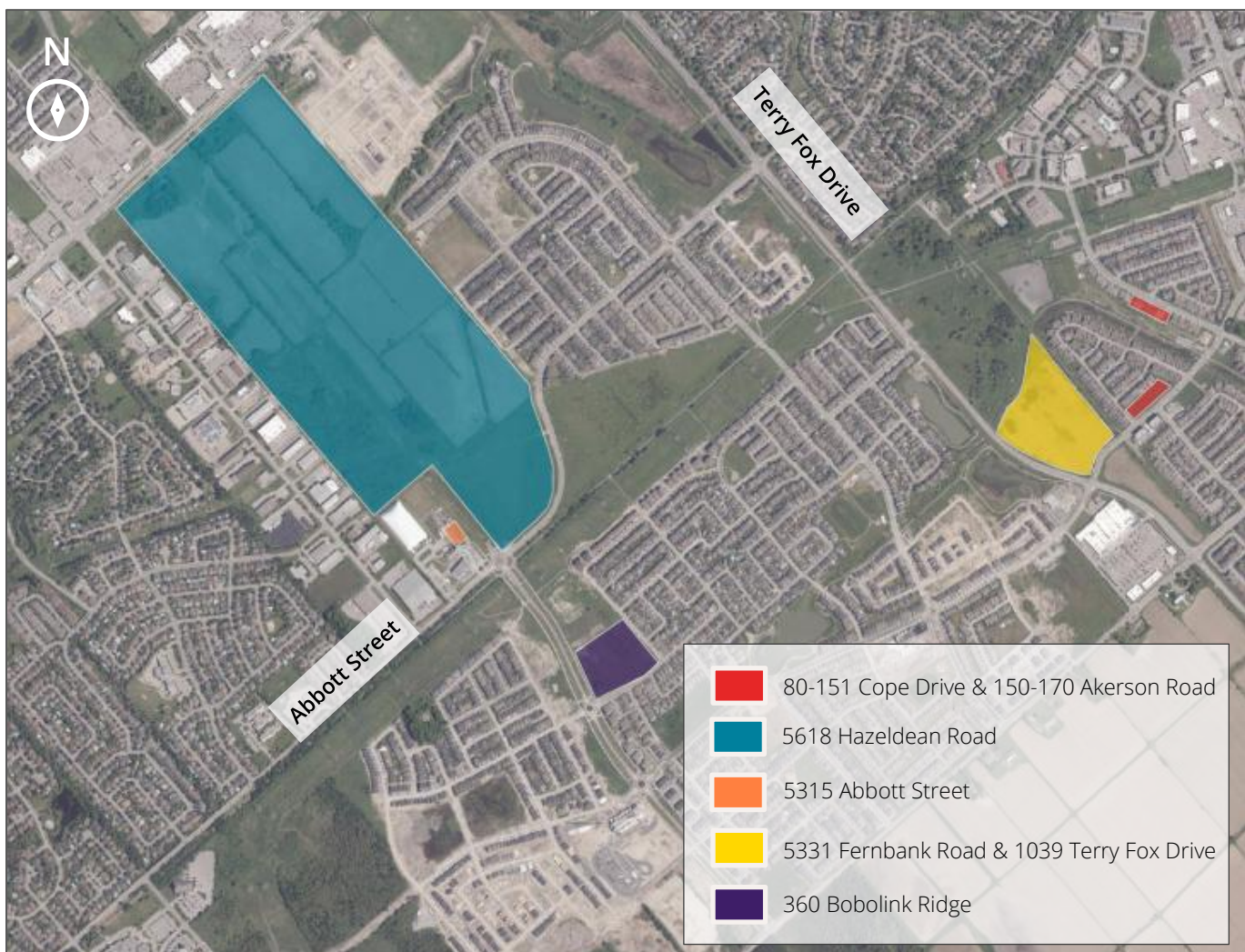


Figure 26. Planned Developments

5.0 DEVELOPMENT GENERATED TRAVEL DEMAND

5.1 Trip Generation and Mode Shares

While the Institute of Transportation Engineers (ITE) Trip Generation manual provides rates for various institutional land uses, for the purposes of estimating development-generated trips, detailed occupancy data provided by OCSB was used. As such, a first principles approach was applied to determine person trip estimates. Table 7 provides a summary of the estimated site occupancy according to various site aspects. As illustrated, the site is expected to accommodate a total of 1526 persons (including staff, and students).

Table 7. Site Occupancy Estimates

Occupancy Type	Occupancy (Persons)
62 Classrooms	1426
Staff	100
Total:	1526

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 Stittsville / Kanata district commuter traffic and would likely consist of primarily inbound trips during the morning and outbound trips during the afternoon. Students attending high school would have a mix of school bus trips, walking, cycling, driving, transit trips or being dropped off/picked up by parents.

Mode shares for staff trips are based on employment generator mode shares for the Kanata-Stittsville district as reported in the 2020 TRANS Trip Generation Manual. The resulting Staff trip estimates by mode are summarized in Table 8.

Table 8. Staff Trips by Mode Share

Staff Trips	Mode Share (Staff)	AM Commuter Peak			PM Commuter Peak		
		In	Out	Total	In	Out	Total
Auto Driver	84%	84	0	84	0	84	84
Auto Passenger	4%	4	0	4	0	4	4
Transit	8%	8	0	8	0	8	8
Bicycle	3%	3	0	3	0	3	3
Walk	1%	1	0	1	0	1	1
Other	0%	0	0	0	0	0	0
Total	100%	100	0	100	0	100	100

To assist in estimating mode shares for the students attending the proposed school, OCSB provided the preliminary school catchment area, illustrated in Figure 27. In addition to the area shown, the catchment area extends south to cover the full rural west to the south and west City of Ottawa urban boundaries.

School bus eligibility per the Ottawa Student Transportation Authority (OSTA) is based on walking distance to the school. For middle and high school students, those with 3.2 km walking distance or more 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 facilities. Based on the review of the preliminary catchment area and the above

considerations, it is anticipated that all students in the catchment area south of Fernbank Road and Terry Fox Drive will be eligible for bussing.

The distribution of student locations within the study area has been estimated based on the existing population distribution in the current TRANS Traffic Analysis Zone (TAZ) system; all TAZ within the proposed school catchment area were identified and zone populations reviewed to determine the proportions of the catchment area population that lies within urban Stittsville where students would not be eligible for bussing and to the rural south and west where bussing would be provided. The distribution of TAZ population in the proposed school catchment area results in a split of approximately 60% of the population located within urban Stittsville and 40% in the rural south and west. Applying the same geographic distribution to the total anticipated student population, it is estimated that there will be 574 students that live in the area who will qualify for bussing and the remaining 852 living in urban Stittsville who will not qualify.

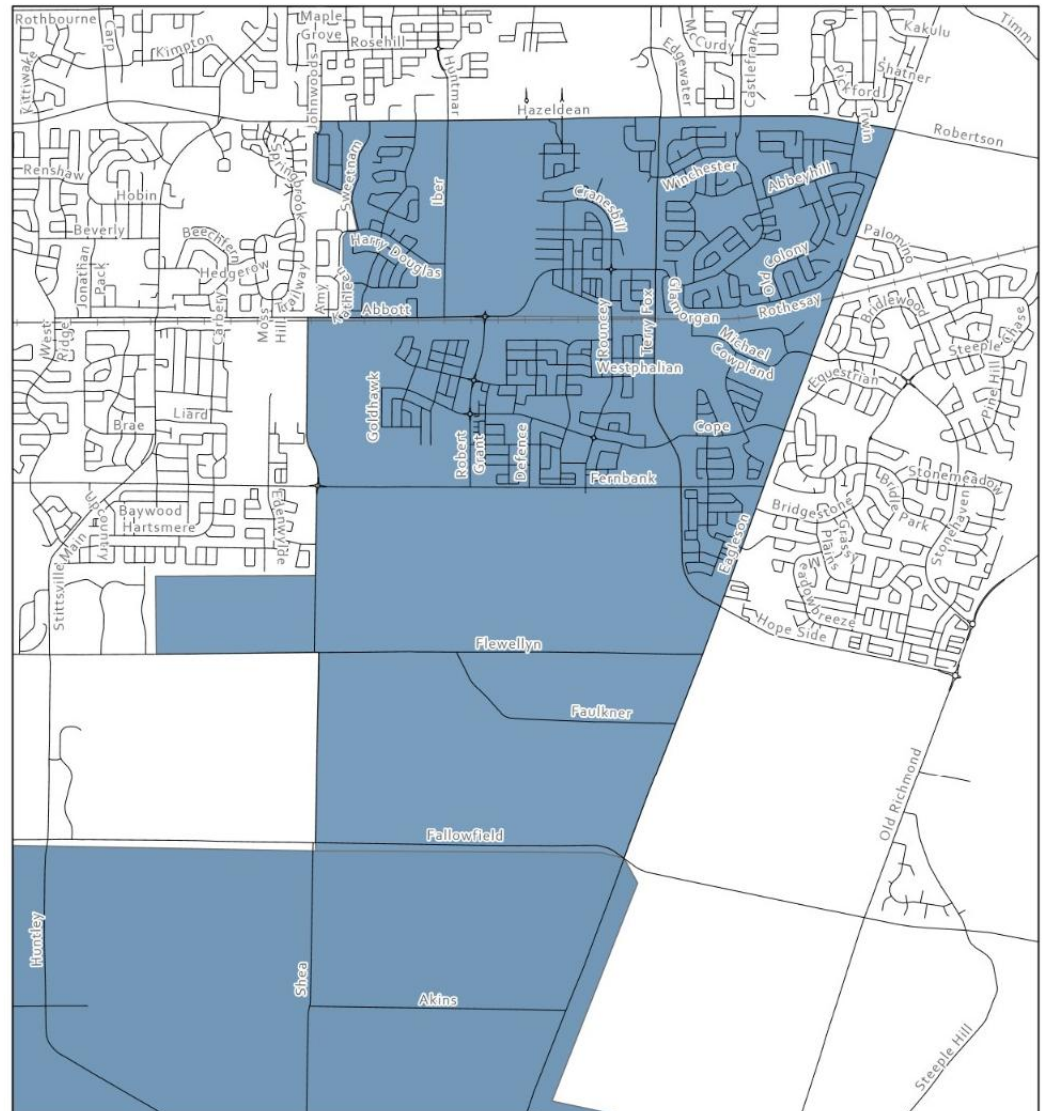


Figure 27. Proposed High School Catchment Area (OCSB)

High school modal shares from the TRANS Trip Generation Manual include 17% auto passenger, 19% school bus, 38% transit, 18% walk, 3% bike and 5% other modes. As the catchment area for the school is known and suggests a greater proportion of students that will qualify for bussing than the TRANS mode shares, these rates have been further adjusted to reflect the catchment and separate model shares have been estimated for students inside and outside of the school bus eligible areas.

For students in the urban west and south who will qualify for bussing, it is assumed most will use the provided bussing but there will be a proportion of students who drive or are dropped off by car. The trip generation assumes a 20% proportion of students expected to arrive at the school by car, either self driven or as a passenger, reflecting the high auto mode share in the Rural West district and resulting increased potential for students to be dropped off as part of commuter trips by parents. Given the travel distance and lack of transit service in the rural south and west, no trips by transit or active modes have been assumed for this group.

For students within urban Stittsville, a higher mode share of walking and cycling is anticipated given the concentration of residential development in the vicinity of the school, and a slightly increased auto mode share (driver and passenger) is

assumed to reflect the high employment generator auto mode share in Kanata-Stittsville and increased potential for students to be dropped off as part of commuter trips by parents. The remainder of trips are assumed to use existing OC Transpo service in the area, and it is noted that there may be some seasonal variation between the transit, walking and cycling modes shares as some students may opt to take transit over walking and cycling in the winter months.

Based on the above assessment and assumptions, the overall development generated trips for students at the proposed high school are summarized in Table 9. It is noted that the mode shares assume outbound auto trips during the AM period before school start and inbound auto trips around PM school end, to represent parents or guardians combining commuter trips with school drop-off and pickup.

Table 9. Student Trips – Person Trips by Mode

High School	Mode Share (Students Only)	AM School Start			PM School Dismissal		
		In	Out	Total	In	Out	Total
Ineligible to Bus							
Auto Driver	2%	17		17		17	17
Auto Passenger	18%	153	136	153	136	153	153
Transit	20%	170		170		170	170
Bicycle	10%	85		85		85	85
Walk	50%	426		426		426	426
Total	100%	852	136	852	136	852	852
Eligible for Busing							
Auto Driver	2%	11		11		11	11
Auto Passenger	18%	103	92	103	92	103	103
School Bus	80%	459		459		459	459
Bicycle	0%	0		0		0	0
Walk	0%	0		0		0	0
Total	100%	574	92	574	92	574	574
Total							
Auto Driver	2%	29	0	29	0	29	29
Auto Passenger	18%	257	228	257	228	257	257
School Bus	32%	459	0	459	0	459	459
Transit	12%	170	0	170	0	170	170
Bicycle	6%	85	0	85	0	85	85
Walk	30%	426	0	426	0	426	426
Total	100%	1426	228	1426	228	1426	1426

Considering all site operations (students and staff), the development-generated person trips are summarized in Table 10. While the bell times for the proposed school have not yet been determined, it is conservatively assumed that the AM school drop off will occur at the same time as the AM commuter peak for staff arrivals, but the PM school dismissal (typically 2:00-3:00 PM for secondary schools) will take place before the PM peak hours identified in the provided traffic data.

Table 10. Development-Generated Person Trip Estimates

Mode	AM Commuter Peak / AM School Start			PM School Dismissal			PM Commuter Peak		
	In	Out	Total	In	Out	Total	In	Out	Total
Auto Driver	113	0	113	0	29	29	0	84	84
Auto Passenger	261	228	489	228	257	485	0	4	4
Transit	178	0	178	0	170	170	0	8	8
Bicycle	88	0	88	0	85	85	0	3	3
Walk	427	0	427	0	426	426	0	1	1
School Bus	459	0	459	0	459	459	0	0	0
Total	1526	228	1754	228	1426	1654	0	100	100

5.2 Auto Trip Distribution

The anticipated trip distribution for students and parents is based on the TRANS O-D survey data and the distribution of population within the school catchment area by TAZ. Assumptions for the development of trip distribution include the following:

- Based on the TRANS O-D survey information, 54% of staff trips are assumed to originate from within the Kanata-Stittsville District, while the remainder would arrive from outside districts.
- Based on O-D survey information, of the 46% of staff trips inbound from outside of Kanata-Stittsville, these would be distributed 39% from districts to the east, 4% from the north, 1% from the south and 2% from the west.
- Based on the distribution of current population by TAZ within the Kanata-Stittsville District, it is assumed that 54% of staff trips from within the district will be distributed 34% from the north of the school site, 12% from the west and 8% from the east.
- Based on the distribution of current population by TAZ within the Kanata-Stittsville District excluding zones to the south of Fernbank Road where students would qualify for bussing, students who are ineligible for bussing would be distributed 60% from the north of the school, 11% from the east and 28% from the west.
- Based on the proposed school catchment area and bus eligibility, it is assumed that 100% of the students eligible for bussing will arrive from the south.
- Outbound trips departing after AM passenger trip drop-offs are assumed to continue to follow a typical commuter pattern. Based on O-D survey data, this would distribute trips 70% to the east, and 10% to each of the west, south and north.

Given these distribution assumptions, the distribution was further broken down among available road corridors connecting to each of the areas identified. The resulting estimated distributions for AM peak hour inbound trips to the new school are summarized in Table 11; the same distributions are assumed for PM school dismissal and PM peak hour departing staff trips in the opposite directions.

Table 11. Preliminary Trip Distributions – AM Peak Hour Inbound Auto Trips

Origin	Routing Via	Inbound (%)		
		Staff	Students – Ineligible to bus	Students – Eligible to bus
East	Fernbank Rd WBT at Terry Fox	5%	5%	0%
	Cope Dr WBT at Terry Fox	5%	5%	0%
North	Terry Fox Dr – Cope – Atlas	35%	30%	0%
	Terry Fox Dr – Fernbank Rd	35%	30%	0%
South	Terry Fox NBL – Fernbank	10%	0%	100%
West	Cope to Atlas	5%	15%	0%
	Fernbank EB	5%	15%	0%
Total		100%	100%	100%

It was noted that the trip generation also includes assumes that many of the auto passenger trips will be drop-offs by parents and guardians who will then continue to work or other destinations. AM peak hour outbound trips from the school will be distributed based on the O-D survey commuter to the surrounding districts, based on the following routes and proportions:

- 70% the south (Highway 417 or Kanata North) via Cope Drive to Terry Fox NB.
- 10% to the south via Cope Drive to Terry Fox Drive SB.
- 10% to the west via Cope Drive WB.
- 10% to the east via Cope Drive (to Eagleson Road and communities directly to the east).

It is again assumed that the same proportions would apply for inbound auto trips at school dismissal to pick up students.

5.3 Auto Trip Assignment

Auto mode trips have been assigned to the network based on the trip distributions developed above. As the PM school dismissal is expected to fall outside of the typical PM commuter peak period, trip assignment will be focused on two scenarios: student and staff arrivals during the AM peak hour, and staff departures during the commuter PM peak hour.

Table 12 and Table 13 summarize the trip assignments for inbound and outbound trips, respectively. The auto drive and passenger trips identified in the trip generation above have been converted to vehicle trips based on an anticipated occupancy of 1.2 passengers per vehicle. AM peak hour trips also include 20 buses accommodating the students from areas where bussing will be provided, based on the planned number of buses identified by OCSB.

Figure 28 illustrates the site generated vehicle trips assigned to the development area road network.

Table 12. Trip Assignment – AM Peak Hour Inbound Auto Trips

From	Via	Inbound (Number of auto trips)		
		Staff	Students – Ineligible to bus	Students – Eligible to bus
East	Fernbank Rd WBT	4	7	0
	Cope Dr WBT	4	7	0
North	Terry Fox Dr – Cope – Atlas	29	43	0
	Terry Fox Dr – Fernbank Rd	29	43	0
South	Terry Fox NBL – Fernbank	8	0	96+20 buses
West	Cope to Atlas	4	21	0
	Fernbank EB	4	21	0
Total		84	142	116

Table 13. Trip Assignment – AM Peak Hour Outbound Trips

To	Via	Outbound (Number of vehicle trips)		
		Staff*	Students – Ineligible to bus **	Students – Eligible to bus **
North	Terry Fox Drive	-	80	54+20 buses
South	Terry Fox Drive	-	11	8
East	Cope Drive	-	11	8
West	Cope Drive	-	11	8
Total		-	114	112

Table 14. Trip Assignment – PM Peak Hour Outbound Trips

To	Via	Outbound (Number of vehicle trips)		
		Staff	Students – Ineligible to bus *	Students – Eligible to bus *
North	Terry Fox Drive	59	-	-
South	Terry Fox Drive	8	-	-
East	Cope Drive	8	-	-
West	Cope Drive	8	-	-
Total		84	-	-
*Outbound afternoon student trips are expected to occur before PM commuter peak hour.				

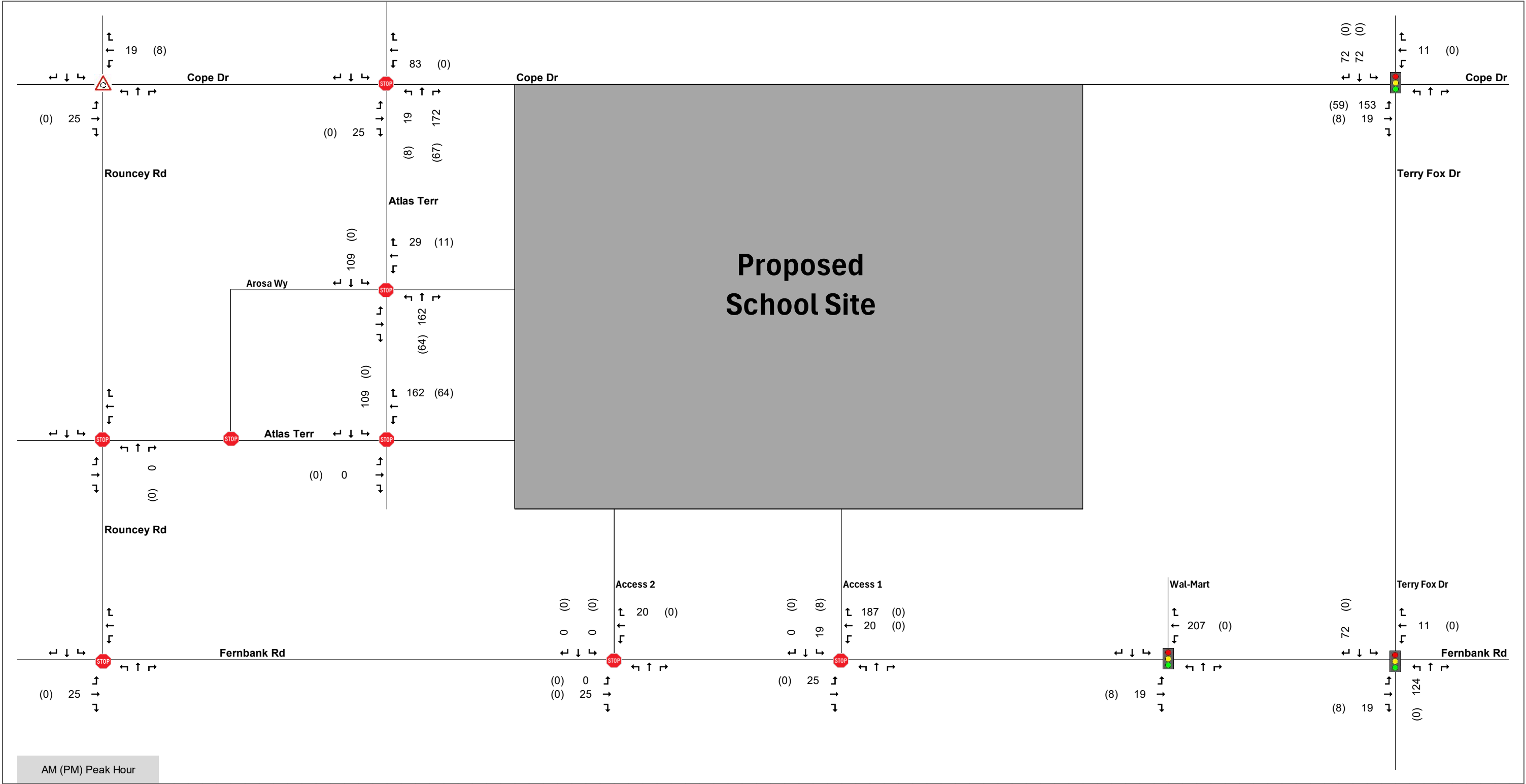


Figure 28. Trip Assignment - Vehicle Trips

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:

- Atlas Terrace / Cope Drive
- Atlas Terrace / Rouncey Road
- Atlas Terrace / Arosa Way
- Rouncey Road / Cope Drive
- Rouncey Road / Fernbank Road
- Fernbank Road / Terry Fox Drive
- Fernbank Road / Walmart Shopping Centre Access
- Cope Drive / Terry Fox Drive

6.2 Study Time Periods

As identified in Section 5.3, the analysis will include the AM and PM commuter peak hours. The AM peak hour will conservatively include all staff and student arrivals, while the PM peak hour will include staff departures only. It is assumed that the PM student dismissal will be earlier than the PM commuter peak hour; analysis of an early afternoon dismissal scenario will not be included as it will not overlap with peak hour conditions, and count information during the anticipated dismissal period between 2:00 and 3:00 PM is typically not included in City of Ottawa traffic count data.

6.3 Horizon Years

It is anticipated that the TIA traffic analysis will include a 2028 opening day scenario as well as a 2033 opening plus five years scenario.

6.4 Preliminary Background Network Travel Demands

To develop future background network travel demands, traffic volumes have been projected to the applicable horizon year utilizing a 2% annual growth rate, consistent with previous traffic studies in the area. Site generated traffic from the other area developments identified in Section 4.3 of this report will be added to the background traffic projections.

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 15.

Table 15. Preliminary TIA Module Exemptions Review

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

Module / Element	Exemption Considerations	Exemption and Rationale
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:	Exempt – all criteria are met except for application type, site plan control.
	1. Access to Collector or Local;	Condition met – access via Atlas Terrace
	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;	Condition met
	5. Site Trip Infiltration is expected. Site traffic will increase peak hour vehicle volumes along the route by 50% or more.	Condition to be met during isolated pickup and drop-off periods on Atlas Terrace compared to existing residential use.
4.7 Transit		
4.7.1 Route Capacity	Required if > 75 site transit trips	Required
4.7.2 Transit Priority	Required if > 75 site auto trips	Required
4.8 Network Concept	When proposed development generates > 200 person-trips during the peak hour in excess if the equivalent volume permitted by established zoning	Exempt , site is zoned for school use.
4.9 Intersection Design		
4.9.1 Intersection Control	Required if > 75 site auto trips	Required
4.9.2 Intersection Design	Required if > 75 site auto trips	Required

7.0 BACKGROUND NETWORK TRAVEL DEMANDS

7.1 Existing Traffic Operations

Operational analysis of the existing traffic volumes Figure 16 have been analyzed using Synchro for signalized and unsignalized intersections and SIDRA for roundabout operations. Analysis results for the study area intersections are summarized in Table 16. These results highlight operations of critical movements as well as for the intersection as a whole, based on the following criteria:

- Critical movements include any movements operating at level of service (LOS) E-F; if no movements at the intersection reach LOS E-F, the critical movement reported is the movement at the intersection with the highest V/C ratio.
- Signalized LOS is based V/C ratio per the methodology of the Ottawa MMLOS Guidelines. Unsignalized LOS is based on delay for unsignalized intersections.
- The overall V/C ratio for signalized intersections is based on the weighted average by volume of all critical movements, as defined in the City of Ottawa MMLOS guidelines. If there are no movements at LOS E-F, the movement with the highest V/C ratio (signalized) or delay (unsignalized) is used as the overall intersection V/C ratio to calculate LOS.

Detailed analysis results have been included as **Appendix F**.

Table 16: Traffic Operations Analysis - Existing Conditions

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Cope / Rouncey Roundabout	AM	A	0.20	4.5	NB	A	0.09	14.9
	PM	A	0.18	4.4	NB	A	0.08	10.0
Cope / Atlas Unsignalized	AM	A	0.18	4.4	NB	B	0.05	10.3
	PM	A	0.16	1.2	NB	B	0.05	10.1
Cope / Terry Fox Signalized	AM	E	0.93	37.4	NBT	E	0.93	58.1
	PM	E	0.96	45.3	WBT	E	1.00	77.4
					NBT	E	0.97	62.3
					SBL	E	0.92	61.4
Atlas / Arosa Unsignalized	AM	A	0.01	2.9	EB	A	0.01	8.8
	PM	A	0.02	1.0	EB	A	0.01	9.0
Rouncey / Atlas Unsignalized	AM	A	0.05	1.9	WB	A	0.03	9.5
	PM	A	0.10	1.0	WB	A	0.01	9.8
Fernbank / Rouncey Unsignalized	AM	A	0.35	1.6	SB	C	0.27	21.1
	PM	A	0.45	1.7	SB	D	0.37	32.5
Fernbank / Walmart Signalized	AM	A	0.47	5.3	EBT	A	0.47	5.2
	PM	C	0.71	12.6	WBT	C	0.71	11.7
Fernbank / Terry Fox Signalized	AM	C	0.73	23.0	EBL	C	0.73	66.9
	PM	E	0.93	44.9	WBT	E	0.91	65.1
					NBL	E	0.96	62.0

The results of the existing conditions operational analysis indicate the following:

- All unsignalized intersections in the study area are operating at an overall LOS of A and most movements at LOS B or better. The higher peak hour volumes along Fernbank Road create more limited gaps for cars from stop-controlled side approaches to turn; this results in SB delays at the Fernbank / Rouncey intersection reaching levels corresponding with LOS C and D during the AM and PM peak hours, respectively.
- The Cope / Rouncey roundabout is currently operating at an overall LOS of A, with all individual approaches experiencing low delays.

- The Cope / Terry Fox signalized intersection operates with a number of movements near capacity, including the WB through and SB left during the PM peak hour and NB through during both the AM and PM peak hours.
- The Fernbank / Walmart access signalized intersection is operating at an acceptable LOS C under existing volumes; traffic generally experiences low delays along Fernbank Road with most of the delay for vehicles exiting the shopping center on the SB approach.
- The signalized Fernbank / Terry Fox intersection operates at an acceptable LOS C during the AM peak hour. During the PM peak hour, the WB through and NB left turn movements both approach capacity, resulting in an overall LOS of E.

7.2 Future Transportation Network Plans

Future transportation network plans have been previously identified and discussed in Section 4.0. There are no specific projects proposed in the City's priority networks that will result in changes to the roads and intersection configurations within the TIA study area. It is noted that the widening of Terry Fox Drive from two to four lanes south of Castlefrank Road is proposed as part of the needs-based network but additional studies are likely to be required and there is no current timeline for completion.

7.3 Other Developments

All current and approved area development applications of significance have been identified in Section 4.3. All development generated trips from the respective application TIA's have been accounted for in the estimation of future background traffic volume projections.

7.4 Future Background Traffic Growth

Future background traffic volumes have been projected based on the 2% annual growth rate established previously for each of the identified future horizon years and adding in site-generated development traffic from the identified background developments expected to be completed at each horizon. The resulting future traffic volumes for the study area are summarized in Figure 29 and Figure 30.

7.5 Future Background Traffic Operations

Operational analysis of the 2028 and 2033 future background traffic volumes have been analyzed using Synchro and using SIDRA for roundabout operations, following the same methodology for reporting as outlined in Section 7.1. Analysis results for the study area intersections are summarized in Table 17 and Table 18. Future signalized intersection analysis is based on signal timing optimization using the built in tools in Synchro and includes extensions to a 120 second cycle during the PM peak hour for the intersections of Terry Fox Drive with Fernbank Road and Cope Drive. Detailed analysis results have been included as **Appendix G**.

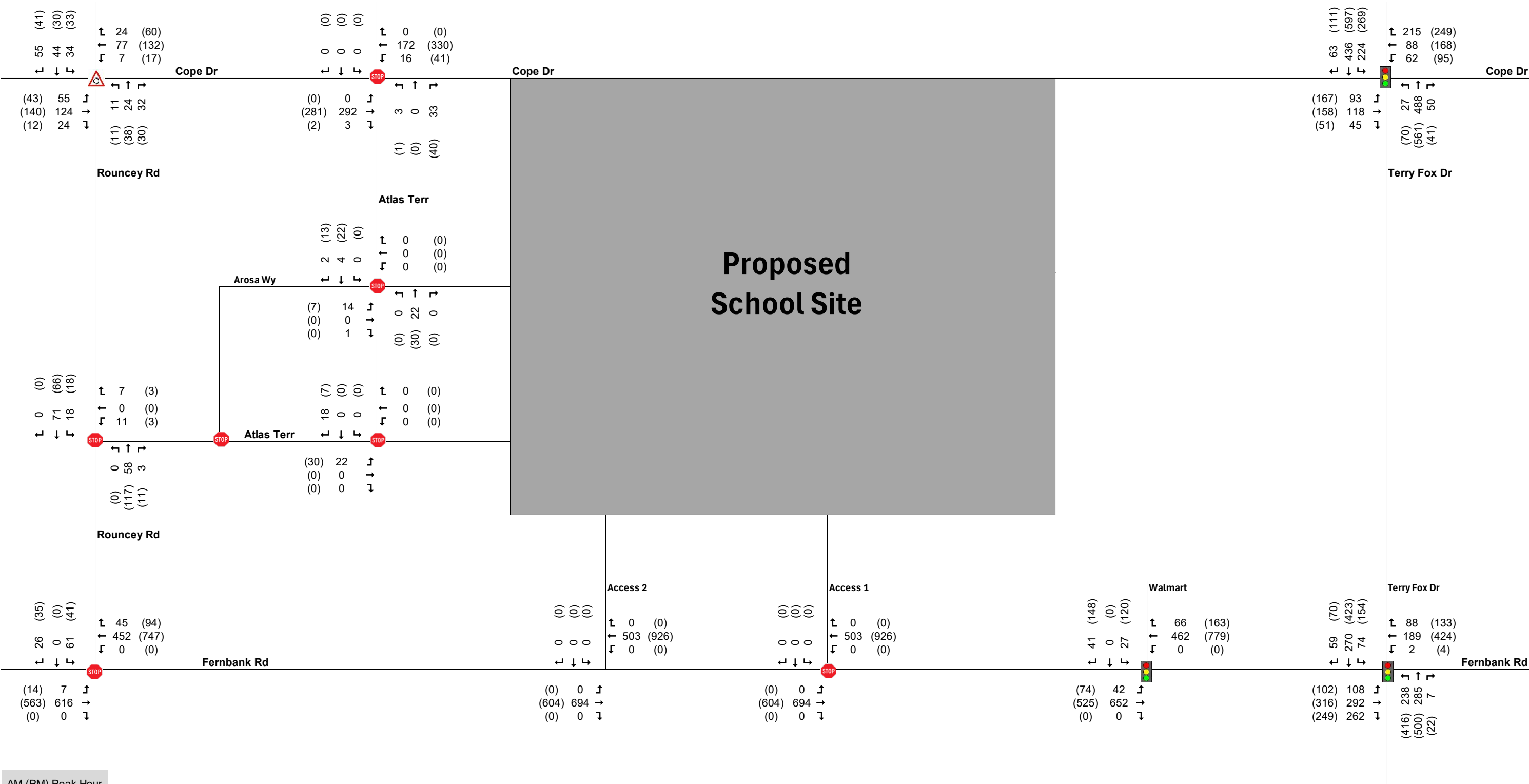


Figure 29. 2028 Future Background Traffic Volumes

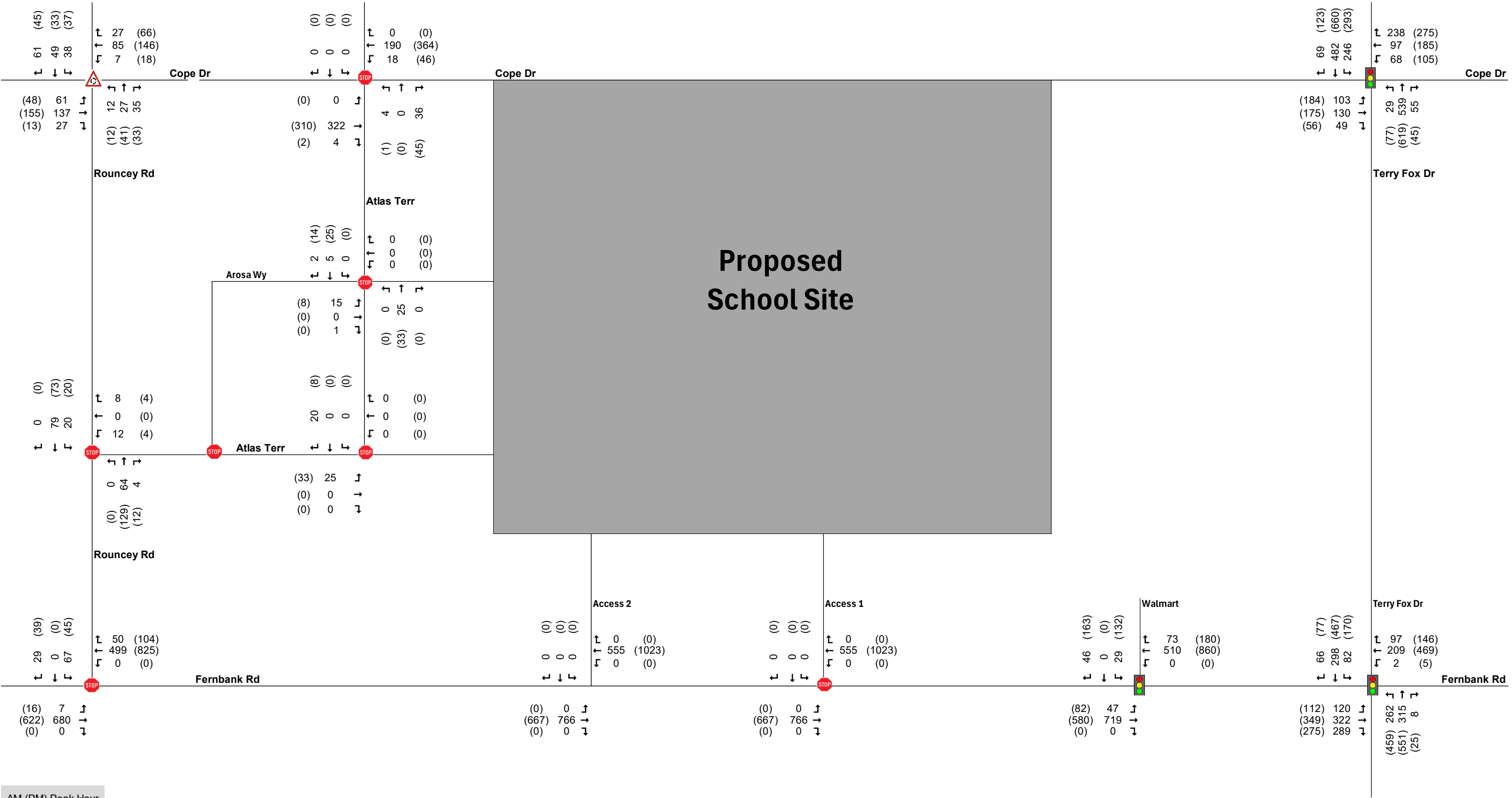


Figure 30. 2033 Future Background Traffic Volumes

Table 17: Traffic Operations Analysis - Future Background 2028

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Cope / Rouncey Roundabout	AM	A	0.22	4.6	NB	A	0.10	14.5
	PM	A	0.19	4.5	NB	A	0.09	10.0
Cope / Atlas Unsignalized	AM	A	0.17	1.0	NB	B	0.05	10.3
	PM	A	0.17	1.2	NB	B	0.06	10.3
Cope / Terry Fox Signalized	AM	D	0.85	28.1	WBT	D	0.85	49.1
	PM	E	0.97	49.2	EBL	E	0.99	99.2
					WBT	E	0.98	76.2
					NBT	E	0.97	53.0
					SBL	E	0.97	75.5
Atlas / Arosa Unsignalized	AM	A	0.01	2.9	EB	A	0.01	8.8
	PM	A	0.01	0.9	EB	A	0.01	9.0
Rouncey / Atlas Unsignalized	AM	A	0.04	1.8	WB	A	0.02	9.4
	PM	A	0.08	0.9	WB	A	0.01	9.5
Fernbank / Rouncey Unsignalized	AM	A	0.36	1.7	SB	C	0.30	22.7
	PM	A	0.44	1.7	SB	D	0.36	31.3
Fernbank / Walmart Signalized	AM	A	0.46	5.0	EBT	A	0.46	4.9
	PM	C	0.71	13.1	SB	C	0.71	28.7
Fernbank / Terry Fox Signalized	AM	B	0.61	20.1	WBT	B	0.61	42.8
	PM	E	0.95	37.2	WBT NBL	E E	0.95 0.96	73.1 57.7

Table 18: Traffic Operations Analysis - Future Background 2033

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Cope / Rouncey Roundabout	AM	A	0.24	4.9	NB	A	0.11	14.8
	PM	A	0.22	4.7	NB	A	0.10	10.0
Cope / Atlas Unsignalized	AM	A	0.19	1.0	NB	B	0.06	10.7
	PM	A	0.18	1.3	NB	B	0.07	10.5
Cope / Terry Fox Signalized	AM	D	0.88	33.4	WBT	D	0.88	52.4
	PM	F	1.07	67.8	EBL	E	0.98	91.8
					WBT	F	1.10	110.9
					NBT	F	1.08	87.9
					SBL	F	1.08	110.7
Atlas / Arosa Unsignalized	AM	A	0.02	2.8	EB	A	0.02	8.9
	PM	A	0.01	0.9	EB	A	0.01	9.1
Rouncey / Atlas Unsignalized	AM	A	0.04	1.9	WB	A	0.02	9.5
	PM	A	0.08	1.0	WB	A	0.01	9.6
Fernbank / Rouncey Unsignalized	AM	A	0.40	2.1	SB	D	0.38	27.9
	PM	A	0.49	2.3	SB	E	0.48	42.9
Fernbank / Walmart Signalized	AM	A	0.54	6.1	EBT	A	0.54	6.3
	PM	C	0.76	15.7	WBT	C	0.76	14.8
Fernbank / Terry Fox Signalized	AM	B	0.63	20.8	WBT	B	0.63	41.0
	PM	F	1.02	52.5	WBT	F	1.01	88.6
					NBL SBT	F E	1.08 0.96	100.3 63.3

The results of the 2028 and 2033 future background analysis indicate the following:

- Most of the unsignalized intersections in the study area are expected to continue operating well to the 2033 horizon, with overall LOS A and individual movement LOS of B or better.
- Future increases in through traffic along Fernbank Road will further reduce the available gaps for turning movements from the stop-controlled side approaches; at the intersection with Rouncey Road, this will increase the SB delays to LOS D and E during the 2033 AM and PM peak hours, respectively.
- The Cope / Rouncey roundabout will continue to operate well under projected future volumes, with all movements at LOS A with minimal delays.
- AM peak hour operations at the Cope / Terry Fox intersection can be improved to an overall LOS D during the AM peak hour through signal timing optimization. During the PM peak hour, signal timing optimization can be implemented to maintain a LOS E under projected 2028 volumes, but by the 2033 horizon the WB through, NB through and SB left will all exceed capacity.
- The signalized intersection of Fernbank at the Walmart Shopping Centre access will continue to operate at an overall LOS C or better to the 2033 horizon; the LOS C will continue to be governed by the SB approach with lower delays for traffic along Fernbank Road.
- AM peak hour operations at the Fernbank / Terry Fox intersection can be improved to all movements operating at a LOS B or better under projected 2028 and 2033 volumes. During the PM peak hour, the WB through and NB left movements will continue to operate near capacity as they do under existing conditions. By the 2033 horizon, background traffic growth will increase volumes to an extent that will exceed capacity, and result in the SB through movement to approach capacity as well. Despite an extension to a 120 second cycle length, further improvements to maintain a LOS E for all movements are not possible through additional signal timing modifications.

8.0 DEMAND RATIONALIZATION

The trip distribution and assignment for the proposed high school includes trips expected to use intersections where the future background analysis indicates that capacity constraints are expected. Specific interactions of site generated traffic with movements expected to be near capacity may include the following:

- **Fernbank Road Accesses:** The proposed school site plan includes two new accesses to the site from Fernbank Road, one inbound-only bus access and one full movement access connecting to the school parking area. The 2033 future background analysis indicates that projected 2033 volumes along Fernbank Road will result in increased delays for traffic looking to turn left onto Fernbank Road at the intersection with Rouncey Road; it is anticipated that vehicles trying to exit the school site to Fernbank during the PM peak hour may experience similar difficulties and delays. The south site access to Fernbank Road will be primarily used by traffic destined to Terry Fox Drive to the south or Fernbank to the east. In the event of longer delays, drivers destined to the south may opt to use an easier southbound right turn to Fernbank Road WB and continue to Shea Road, and drivers destined to Terry Fox Drive south towards Hope Side Road may opt to use Cope Drive to Eagleson Road. It is anticipated that the SB right turn out of the site and the EB through on Cope Drive at Terry Fox will experience better operations during the 2033 PM peak hour and are expected to have additional capacity to accommodate any traffic opting to divert to these routes.
- **Terry Fox / Cope:** Outbound school-generated traffic destined to Terry Fox Drive north is anticipated to primarily use the EB left turn from Cope Drive. During the AM peak hour, this movement operates at an acceptable level of service under 2033 background volumes and is expected to have some residual capacity to accommodate additional site generated traffic from parents departing from student drop-offs and departing buses. During the PM peak hour, school site-generated traffic is expected to add minimal volumes to the WB through, NB through and SB left turn movements that are expected to exceed capacity under 2033 PM peak hour background volumes. However, the EB left turn operates at capacity under 2033 background volumes and as such the capacity to accommodate additional site generated traffic may be limited. Alternate routes to Terry Fox Drive may be viable via Rouncey Road north to Abbott Street. For outbound traffic destined to Highway 417, alternate routes via Cope Drive or Fernbank Road to Eagleson Road may also be viable; the EB through movement at both the Cope Drive and Fernbank Road intersections

with Terry Fox Drive operate at LOS A under 2033 background volumes and are expected to be able to accommodate additional traffic choosing to divert to Eagleson Road.

- **Terry Fox / Fernbank:** Inbound site generated traffic to the school will primarily use the NB left, SB right and WB through movements during the AM peak hour; all of these movements operate at acceptable levels of service under 2033 background volumes and are expected to have additional capacity to accommodate the AM site generated traffic. During the PM peak hour, outbound site generated traffic to the south is primarily assigned to the EB right turn, which operates at an acceptable level of service, but may be difficult to access from the school with the anticipated delays to SB left turns onto Fernbank Road. As noted above, alternate routes to the south would be possible via Shea Road and Eagleson Road.

Specific impacts to the study area intersections will be identified through operational analysis under traffic volumes in Section 14.1 of this report. It is noted that the primary impacts of school site-generated traffic will be during the AM peak hour as the morning arrival bell is expected to coincide with the AM commuter peak; background AM peak hour analysis indicates that most of the study area intersections are expected to have residual capacity to accommodate the anticipated site generated traffic. While the PM peak hour background analysis indicates operational issues at several of the study area intersections, the school PM dismissal is expected to occur before the commuter PM peak period and thus the PM peak hour analysis will only be impacted by any staff who remain at the school for 1-2 hours after the PM dismissal. Even with the site generated trip estimation conservatively assuming all staff will depart during the PM commuter peak hour, it is anticipated that the impacts of site-generated traffic on the surrounding intersections will be significantly lower than during the AM peak hour.

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 H**. 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

The proposed site plan includes a 6.0m sidewalk following a north-south alignment across the site from Fernbank to Cope Drive. On the southern portion of the site, the proposed sidewalk will be aligned between the proposed bus access and southern parking area, on the north side of the school the sidewalk will travel adjacent to the school building and will be set back behind the smaller front parking area. The new sidewalk will be continuous through most of the site but will include a painted crossing where it crosses the south site access from Atlas Terrace. The new sidewalk will provide direct access to the main access and secondary access to the proposed school; the site plan includes a new pedestrian pathway to be constructed at the north side of the school connecting the two north school accesses to the new sidewalk along Atlas Terrace as well as to the existing south sidewalk along Cope Drive at two points. The rear yard of the school containing the sports fields, basketball courts, portables and potential future expansion area will be enclosed by a perimeter chain link fence; pedestrian access to this area will be through the school building only.

Based on the surrounding development and proposed school catchment area, pedestrian access to the school site will be primarily from the north, east and west. Pedestrians from the majority of these areas are anticipated to access to and from the school using the existing and new sidewalks along Cope Drive and Atlas Terrace. The closest existing crossings of Cope Drive to the school are located at the Cope / Rouncey roundabout approximately 200m to the west and Cope / Terry Fox intersection approximately 380m to the east.

The existing development surrounding the school site is not likely to result in demand for pedestrian travel along Fernbank Road for trips between school and home. However, the Walmart Shopping center to the east of the proposed school includes fast food and other commercial uses that may be a draw for students during lunch periods or breaks between classes. As part of school operations, schools staff should encourage the use of the existing sidewalk via Cope Drive as the preferred connection in order to reduce the potential of pedestrian trips along Fernbank Road.

Bike racks are proposed to be located at a number of points along the north and west sides of the school building and will be accessed from the proposed pedestrian areas on the school site. It is anticipated that bike access to the school will generally consist of on-street trips arriving primarily from Cope Drive and Atlas Terrace.

As described in Section 3.5, the closest existing transit stops to the site are located at the intersection of Cope Drive and Paseana Place (stop ID# 5521). These stops are approximately 200m away and accessed directly from the proposed school north side doors and thus will fall within OC Transpo Service standards to serve the proposed school. The westbound stop (#5520) is located on the north side of Cope Drive and would require students to cross at one of the nearby controlled crossings at Rouncey Road or Terry Fox Drive.

9.2 Circulation and Access Review

The proposed development is expected to include two new accesses from Fernbank Road and two accesses from Atlas Terrace. From Fernbank Road, the west access will be inbound only and reserved for buses only, while the east access will be a full movement access for general traffic connecting to the south parking area. The south access to Atlas Terrace will accommodate two-way traffic and will add a third leg to the existing bend, creating a T-intersection. The north access to Atlas Terrace will be outbound only from the school front parking area, and be aligned immediate opposite Arosa Way.

Site access and circulation have been reviewed based on the site plan provided to RCI on April 23, 2025. Autoturn Vehicle tracking software was used to simulate various design vehicles accessing and circulating through the site. Design vehicles and paths will include the following:

- **Fire Access** – the anticipated fire route serving the proposed school will be through the front parking lot between the Atlas Terrace Accesses, and through a gate at the north end of the parking area to serve any future portables at the rear of the school. AutoTurn review indicates that an aerial fire truck can be accommodate on the anticipated fire routes without conflict.
- **Garbage Collection** – the school garbage enclosure will be located at the south side of the school building and north end of the parking lot. It is anticipated that garbage trucks will access the site via the south access from Atlas Terrace. Autoturn review indicates that the proposed parking lot configuration can accommodate the required maneuvers by a front loading garbage truck to access the garbage enclosure and exit the site without conflict.
- **Deliveries** – the loading area at the proposed school will be on the south end of the school building adjacent to the garbage enclosure. Turning movements for an HSU design vehicle were reviewed at both the Atlas and Fernbank accesses and indicate that trucks will be able to maneuver to and from the loading area from both accesses without conflict.
- **School Buses** – a one-way dedicated bus loop will be provided to the west of the parking area, with buses entering from Fernbank Road and exiting to Atlas Terrace. Autoturn review indicates that this anticipated bus circulation can be accommodated by the proposed bus loop configuration.

All design vehicles swept path figures have been provided in **Appendix I**.

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

The site is anticipated to provide a total of 197 parking spaces for staff and visitors including 8 barrier free accessible parking spaces (4 type A and 4 type B). The site is anticipated to have a total of 120 bicycle parking spaces, the bike parking location is not identified on the site plan.

As illustrated in Table 19, based on the City of Ottawa Zoning By-Law Number 2008-250 parking requirements, the proposed development will require a total of 171 parking spaces, as such the provision of 197 spaces will satisfy the bylaw requirement.

Table 19. 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)	Grade 7 & 8 classrooms (includes 16 classrooms + 10 portables)	39	197 spaces	Yes
	2 per classroom (includes portables)	Grade 9-12 classrooms (includes 46 classrooms + 20 portables)	132		
Total			171		

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 (171–180), a total of seven accessible parking spaces including 3 type A and 4 Type B are required. As such, the accessible parking supply requirements are met.
- For schools with a GFA between 15,000 and 24,999 m², two loading spaces are required. The site plan proposes to provide a loading zone with two spaces at the south side of the school building.
- 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.

10.2 Bicycle Parking Supply

The site is expected to supply a total of 170 bicycle parking spaces, meeting the Ottawa zoning by-law requirements as detailed in Table 20. The required bike parking will be distributed between proposed bike racks on the north, west and south sides of the school building.

Table 20. Site Bicycle Parking Requirements

Land Use	By-Law Rate	GFA / Unit	Required Parking	Provided Parking	Meets Requirements (Yes/No)
School	Main school: 1 per 100 m ² of gross floor area	14,766 m ²	148	170	Yes
	Portable: 1 per 100 m ² of gross floor area	2160m ²	22	22	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 Boundary Segment Multi-Modal Level of Service

Multi-Modal Level of Service (MMLOS) was assessed for the boundary road segments adjacent to the proposed school site along Atlas Terrace, Cope Drive, and Fernbank Road, based on the City's updated 2025 MMLOS guidelines. The results of the segment MMLOS analysis are summarized in Table 21; the detailed MMLOS worksheets are included in **Appendix J**.

Table 21. Boundary Road Segments MMLOS Evaluation

Segment	Side	Existing				Future (2033)			
		PLOS	BLOS	TLOS	PRLOS	PLOS	BLOS	TLOS	PRLOS
Target		C	C	E	-	B	C	E	-
Cope Drive Rouncey to Terry Fox	North	B (B)	D (B)	B	C	B (B)	D (B)	B	C
	South	B (B)	D (D)	B	C	B (B)	D (D)	B	C
Atlas Terrace Cope to Atlas	East	F (F)	A (A)	B	D	A (B)	A (A)	B	D
	West	B (B)	A (A)	B	B	B (B)	A (A)	B	B
Fernbank Road Rouncey to Terry Fox	North	F (A)	D (B)	B	E	F (A)	D (B)	B	E
	South	F (F)	D (D)	B	E	F (F)	D (D)	B	E
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 C is based on the Outer Urban or Suburban Designation and will increase to B when the boundary roads are within 300m of a school. The future target of PLOS B is met for all road segments where sidewalks currently exist. The existing PLOS F on Atlas Terrace is a result of the lack of an existing sidewalk on the east side of the road; the proposed sidewalk included on the school site plan will result in a PLOS A for the segment adjacent to the school and PLOS B for the segment between the school parking lot and bus loop connecting south to Fernbank Road. The segment of Fernbank Road adjacent to the Walmart Shopping Centre currently meets PLOS A, but the remainder of Fernbank Road lacks sidewalks and will remain at PLOS F in the future.

The **Bicycle LOS** (BLOS) target of C is based on the “elsewhere” (i.e. not cross-town bikeway) classification. This target is met for the shared operating space on Atlas Terrace as a result of the low travel speeds and traffic volumes but will not be met on the boundary segments along Cope Road and Fernbank Road outside of the segments closer to Terry Fox Drive with existing multi-use pathways. As the Ottawa TMP does not include any cycling facility projects along either Cope Drive or Fernbank Road, it is anticipated that the BLOS D will remain in the future.

With none of the boundary roads identified as transit priority corridors, mixed traffic operation will result in a **Transit LOS** (TLOS) target of E. It is anticipated that all of the boundary streets will experience low to moderate impedance to transit running times, corresponding to TLOS C, meeting the target for existing and future conditions.

Public Realm LOS (PRLOS) corresponds to C on Cope Drive, B on Atlas Terrace and E on Fernbank Road. Atlas Terrace and Cope Drive achieve relatively good PRLOS as a result of the lower traffic volumes, separation between vehicles and pedestrians and transit service along Cope Drive; the poorer PRLOS on Fernbank Road is a result of the general lack of a public realm outside of the traffic lanes.

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; There were no midblock segments in the study that had recorded collisions in the past five years; the only locations that meet this threshold are the three signalized intersections. Overall, no significant safety concerns are identified at the boundary roads adjacent to the proposed school.

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 a high school, mode shares are generally reflective of the operational characteristics of the school itself and the surrounding area. 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 the built environment are the primary factors for influencing mode shares to the site. However, there is some opportunity for reducing single-occupancy vehicle use for both students and staff.

12.2 Need and Opportunity

Reducing auto trips around schools would improve safety and air quality, decrease traffic congestion during drop-off and pick-up periods, reduce noise in the neighbourhood, and improve mental and physical well-being.

The proposed school catchment area includes a majority of the student population that will be located within the 3.2km radius where bussing will not be provided; this proximity to the school will create a proportion of the anticipated trips to and from the school where active modes may be feasible. Additionally, the existing transit service along Cope Drive provides an additional alternative for students living along or near this route. TDM measures should be leveraged to capitalize on this proportion of the nearby student population to encourage the use of alternative modes for their short distance trips.

12.3 TDM Program

The City of Ottawa's TDM Measures checklist was completed for the proposed development and is provided in Appendix K. An effective TDM measure will be to designate a staff member as a TDM coordinator for the school to promote sustainable travel modes and deliver additional programs; the coordinator should liaise with OSTA and Envirocentre's School Active Transportation program for TDM resources and programs specific to schools in Ottawa. The school should also consider displaying local area maps at the school entrances including cycling, walking and transit routes for student and staff information. It is additionally recommended that the school consider bicycle skills training courses targeted to both staff and students. 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 TRANSIT

13.1 Route Capacity

The proposed school site will be primarily served by OC Transpo Route 67 operating along Fernbank Road and Cope Road, and Route 168 operating along Cope Road. Based on the person trip projections summarized in Section 5.1, the new school is anticipated to generate approximately 180 new transit trips during the AM peak hour, 170 new transit trips after the PM school dismissal, and 10 trips by departing staff during the PM commuter peak hour. The AM peak hour and PM dismissal site generated trips would require the addition of three conventional buses (60 capacity), or two articulated buses (110 capacity) along the routes serving the school. It is anticipated that the PM peak hour staff trips would have a minimal impact on area transit route capacity.

It is noted that OC Transpo offers dedicated high school routes for AM arrival and PM dismissal for many high schools in Ottawa; coordination with OC Transpo to provide a dedicated high school route may be an alternative to adding capacity to the fixed routes in the area.

13.2 Transit Priority

The proposed development driveways are not anticipated to have a significant impact on local transit service. The two accesses on Atlas Terrace will not directly interact with an existing OC Transpo route, and buses along Cope Drive will have the right of way over the additional traffic subject to stop control on Atlas Terrace NB approaching Cope Drive. The

accesses along Fernbank Road are also not anticipated to have a significant impact on bus travel times as free flow operation on Fernbank Road will be maintained and most of the inbound movements into the school site will be able to move with little delay. It is noted that OC Transpo Route 67 travels on a clockwise loop, westbound on Fernbank Road and EB on Cope Drive; as a result, this direction of travel will not be impacted by left turns into the school accesses from Fernbank Road or left turns onto Atlas Terrace from Cope Drive. As a result, it is not anticipated that any additional transit priority measures will be required.

14.0 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.

14.1 Future Total Traffic Operations Analysis

Future total traffic volumes have been projected by adding the site trip generation previously summarized in Figure 28 to the 2028 and 2033 future background traffic volumes summarized in Figure 29 and Figure 30. The resulting future total traffic volumes are summarized in Figure 31 and Figure 32 for 2028 and 2033 respectively. Intersection operations under the future total traffic volumes have been analyzed using Synchro and using SIDRA for roundabout operations, following the same methodology for reporting as outlined in Section 7.1. Analysis results for the study area intersections are summarized in Table 22 and Table 23. Future signalized intersection analysis is based on signal timing optimization using the built in tools in Synchro, but maintains the existing signal phasing structure and cycle lengths. Detailed analysis results have been included as Appendix L.

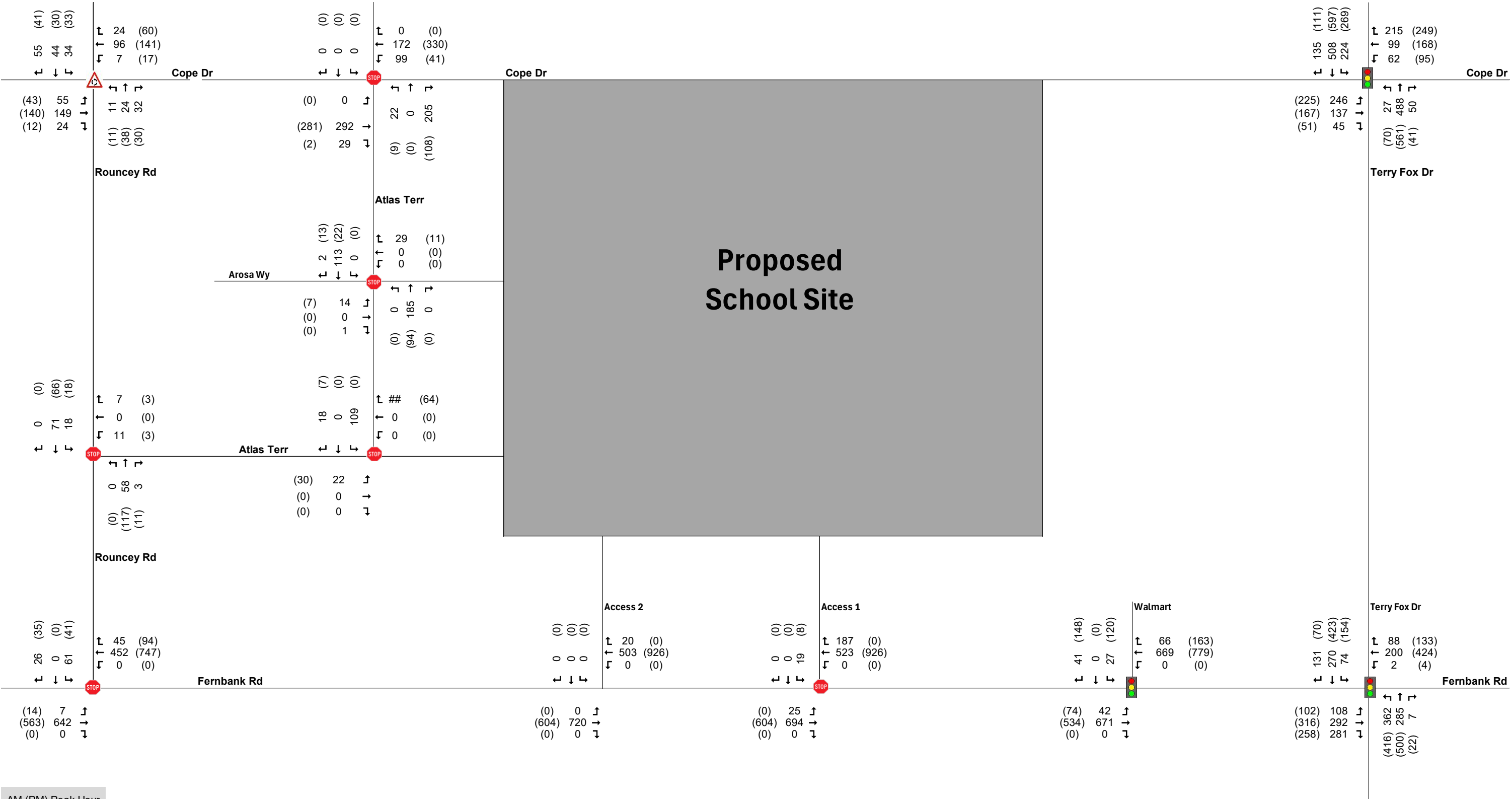


Figure 31: Future Total 2028 Traffic Volumes

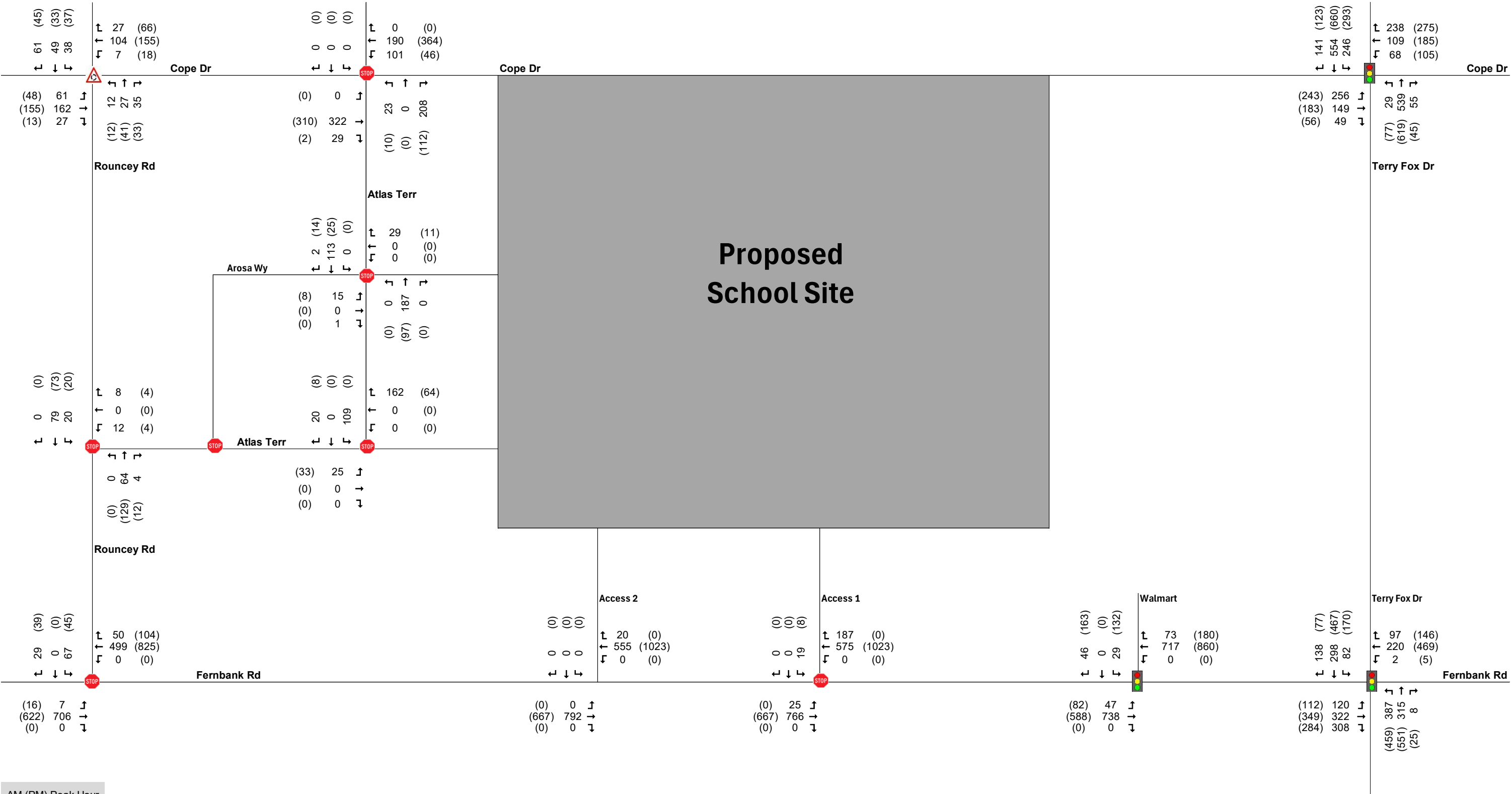


Figure 32: Future Total 2033 Traffic Volumes

Table 22: Traffic Operations Analysis - 2028 Total Traffic

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Cope / Rouncey Roundabout	AM	A	0.24	4.8	NB	A	0.10	5.2
	PM	A	0.20	4.6	NB	A	0.09	10.0
Cope / Atlas Unsignalized	AM	A	0.35	4.9	NB	B	0.35	12.6
	PM	A	0.17	2.3	NB	B	0.17	11.3
Cope / Terry Fox Signalized	AM	E	0.99	40.3	EBL	E	0.99	85.5
	PM	F	1.01	60.8	EBL	E	0.96	79.8
					WBT	F	1.03	91.4
					NBT	F	1.01	77.7
					SBL	F	1.05	101.2
Atlas / Arosa / School Access Unsignalized	AM	A	0.03	1.3	EB	B	0.02	11.3
	PM	A	0.01	1.1	EB	A	0.01	9.6
Atlas / School Access Unsignalized	AM	A	0.14	9.8	SB	A	0.14	9.8
	PM	A	0.04	2.8	SB	A	0.01	8.5
Rouncey / Atlas Unsignalized	AM	A	0.04	1.8	WB	A	0.02	9.4
	PM	A	0.08	0.9	WB	A	0.01	9.5
Fernbank / Rouncey Unsignalized	AM	A	0.38	1.7	SB	C	0.31	23.5
	PM	A	0.44	1.7	SB	D	0.36	31.4
Fernbank / School Bus Access Unsignalized	AM	A	0.31	0.0	WB	A	0.31	0.0
	PM	A	0.54	0.0	WB	A	0.54	0.0
Fernbank / School Access Unsignalized	AM	A	0.42	0.8	SB	D	0.14	34.9
	PM	A	0.54	0.3	SB	E	0.09	49.6
Fernbank / Walmart Signalized	AM	A	0.47	5.5	WBT	A	0.47	5.0
	PM	B	0.70	12.9	SB	B	0.70	25.5
Fernbank / Terry Fox Signalized	AM	B	0.67	21.1	NBL	B	0.67	22.6
	PM	E	0.96	40.7	WBT NBL	E E	0.97 0.94	77.9 53.6

Table 23: Traffic Operations Analysis - 2033 Total Traffic

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Cope / Rouncey Roundabout	AM	A	0.27	5.1	NB	A	0.11	5.5
	PM	A	0.40	6.5	WB	A	0.10	10.9
Cope / Atlas Unsignalized	AM	A	0.37	4.9	NB	B	0.37	14.3
	PM	A	0.19	2.3	NB	B	0.19	11.7
Cope / Terry Fox Signalized	AM	E	0.98	53.9	EBL	E	0.97	79.5
					WBT	E	0.93	67.2
					NBT	E	0.99	73.9
					SBL	E	0.98	81.7
	PM	F	1.11	77.7	EBL	F	1.13	145.0
					WBT	F	1.16	131.9
					NBT	F	1.04	73.1
					SBL	F	1.21	155.3
Atlas / Arosa / School Access Unsignalized	AM	A	0.03	1.3	EB	B	0.03	11.3
	PM	A	0.01	1.1	EB	A	0.01	0.2

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Atlas / School Access Unsignalized	AM	A	0.15	4.6	SB	A	0.15	9.9
	PM	A	0.04	3.0	SB	A	0.01	8.5
Rouncey / Atlas Unsignalized	AM	A	0.04	1.9	WB	A	0.02	9.5
	PM	A	0.08	1.0	WB	A	0.01	9.6
Fernbank / Rouncey Unsignalized	AM	A	0.42	2.1	SB	D	0.39	29.1
	PM	A	0.49	2.3	SB	E	0.48	42.9
Fernbank / School Bus Access Unsignalized	AM	A	0.34	0.4	WB	A	0.34	0.0
	PM	A	0.60	0.0	WB	A	0.60	0.0
Fernbank / School Access Unsignalized	AM	A	0.45	1.0	SB	E	0.18	45.2
	PM	A	0.60	0.4	SB	F	0.15	85.0
Fernbank / Walmart Signalized	AM	A	0.55	6.7	SB	A	0.37	19.6
	PM	C	0.77	15.6	SB	C	0.72	26.3
Fernbank / Terry Fox Signalized	AM	C	0.74	22.9	NBL	C	0.74	27.2
	PM	F	1.03	54.2	WBT	F	1.01	88.6
					NBL	F	1.06	94.4
					SBT	F	1.00	77.5

The results of the future traffic operational analysis for the 2028 opening day and 2033 opening plus five year horizon indicate the following:

- The **Cope / Rouncey** roundabout is anticipated to continue operating at an acceptable level of service under future total volumes to 2033, with all individual approaches at LOS A during the AM and PM peak hours and low delays.
- The **Cope / Atlas** unsignalized intersection is expected to operate at an overall LOS A under future volumes; the critical movement will continue to be the NB approach which will operate at an acceptable LOS B during weekday peak hours.
- The **Terry Fox / Cope** signalized intersection will continue to operate with multiple movements at or over capacity under projected total traffic volumes. During the AM peak hour, the school generated traffic will primarily add volumes to the EB left and SB through and right turn. The rebalancing of green time in the signal timing will be able to maintain all movements at LOS E under future total traffic volumes, but by 2033 the EB left, WB through, NB through and SB through will all be operating near capacity. During the PM peak hour, school generated traffic will primarily add to the EB left and through approaches; with the WB through, NB through and SB left already exceeding capacity under future background traffic, there will not be any residual green time to add to the EB left and it is expected to exceed capacity as well.
- The **Atlas / Arosa / North School Access** intersection is expected to operate at an overall LOS A under future volumes assuming stop control on the EB and WB approaches. Delays from the side approaches will correspond to an acceptable LOS B or better.
- The **Atlas / South School Access** intersection is expected to operate at an acceptable level of service A under the proposed configuration of free flow E-W and stop control SB. All individual movements including the WB right turn for outbound buses during the AM peak will also operate at LOS A.
- The **Rouncey / Atlas** unsignalized intersection will operate at an overall LOS A and all individual movements also at LOS A. It is noted that site generated trip assignment to this intersection is minimal, but the results indicate there is residual capacity at this intersection as an alternative route to the school instead of the Fernbank Road access.
- The **Fernbank / Rouncey** unsignalized intersection will operate at an overall LOS A under future total traffic volumes. Similar to the future background analysis, the SB approach will reach as high as LOS E during the PM peak hour as background traffic on Fernbank Road continues to grow.
- The **Fernbank / School Bus Access** unsignalized intersection will operate at an overall LOS A and all individual movements at LOS A. As an inbound access only, this access will not allow SB traffic that would be delayed by through traffic along Fernbank Road as seen at the Fernbank / Rouncey intersection.

- The **Fernbank / East School Access** intersection will operate at an overall LOS A, governed by the minimal delay to through traffic along Fernbank Road. Similar to the Fernbank / Rouncey intersection, traffic exiting SB to Fernbank Road will experience delays corresponding to LOS E during the AM peak hour and F during the PM peak hour by 2033 as the future traffic growth on Fernbank Road will leave fewer gaps to accommodate turning movements. It is noted that these results are worse than those at Fernbank / Rouncey as the school site generated trips projects a greater concentration of left turns to Fernbank which will experience more delay than right turns, whereas the SB left and right turns are more balanced from Rouncey Road.
- The **Fernbank / Walmart Shopping Centre** signalized intersection will operate at an acceptable overall LOS of C under future 2033 total traffic volumes, similar to future background operations. The SB movement exiting the shopping centre will continue to be the critical movement, operating at an acceptable LOS C or better during peak hours.
- Traffic generated by the proposed school will add volumes to the **Fernbank / Terry Fox** signalized intersection primarily to the NB left and SB right turns during the AM peak and a small amount of volume to the EB right turn during the PM peak. During the AM peak, the overall LOS will slightly increase to a still acceptable LOS C, with all individual movements also at LOS C or better. During the PM peak hour, the WB through and NB left turn movements will continue to exceed capacity as they are expected to under future background operations, and the SB through movement will continue to operate near capacity at LOS E.

14.2 Access Location and Design

The proposed site plan includes four vehicle accesses:

- A general purpose full movement access from Fernbank Road to the main parking area at the south of the site.
- A one-way inbound bus-only access west of the general purpose access serving as the inbound end of the school bus loop.
- A general purpose full movement access on the east side of the existing bend in Atlas Terrace. The addition of this access will convert the existing bend in Atlas Terrace to a T-intersection. This access will serve as the outbound end of the site bus loop as well as providing access to and from the main parking area.
- An outbound only access to Atlas Terrace directly opposite Arosa Way. The provision of this access will convert the Atlas / Arosa intersection to a four leg intersection; it is anticipated that the two-way stop control will be maintained with stop control for the EB and WB approaches.

The proposed access will be required to meet the requirements of the City's private approach by-law (2003-447). Table 24 below provides a summary of the applicable requirements and comparison with the proposed access.

Table 24: 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)	Atlas N access - 6.1m Atlas S access - 9.1m Fernbank W access - 10.0m Fernbank W access - 6.8m	No
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.	All access to be oriented at 90 degrees to roadway.	Yes
25.1a,b	a. The maximum number of private approaches permitted shall be as follows: 1. less than 20 metres of frontage, one (1) two-way private approach;	Atlas Terrace - two two-way accesses, 205m of frontage	Yes

Bylaw Section	Bylaw Requirement	Proposed Access Configuration	Compliant?
	2. 20 metres to 34 metres of frontage, one (1) two-way private approach or two (2) one-way private approaches; 3. 35 metres to 45 metres of frontage, two (2) two-way private approaches or two (2) one-way private approaches; 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 5. for each additional 90 metres of frontage in excess of 150 metres, one two-way private approach or two one-way private approaches. 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.	Fernbank Road – one two-way access and one two-way access, 240m of frontage.	
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.	Atlas N access - 6.1m Atlas S access – 9.1m Fernbank W access – 10.0m Fernbank W access – 6.8m	No
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.	Atlas Terrace north access is 70m south of edge of Cope Drive ROW	Yes

The review indicates that the proposed access will satisfy most requirements of the City of Ottawa private access bylaw. However, the proposed widths of the south access to Atlas Terrace and west access from Fernbank Road will exceed the 9.0m maximum access width specified in the bylaw.

For the south Atlas Terrace access, it is noted that the proposed access width will be configured as a thread leg of a new T-intersection, and the proposed access width is consistent with the existing pavement on Atlas Terrace to the west. While slightly in excess of the bylaw maximum, the proposed configuration will provide a consistent east-west lane alignment through the intersection without lateral shifts or narrowings.

For the west Fernbank access, the proposed access has been designed to accommodate inbound turning movements larger school bus vehicles; turning templates validating these movements at the proposed access were previously verified in Section 9.2.

14.3 Access Sightlines

Intersection Sight Distances (ISD) for Case B1 – Left Turn From Stop and Case B2 – Right Turn from Stop was reviewed at the proposed site accesses on Fernbank Road and Atlas Terrace. The TAC Geometric Design Guide for Canadian Roads provides minimum sight distances based on design speed, as illustrated in Table 25. Design speeds of 10 km/h over the posted speed have been assumed for this analysis; 50 km/h for Atlas Terrace and 70 km/h for Fernbank Road.

Table 25: Intersection Sight Distance Requirements – Case B1

Approach	TAC Case	Design Speed (Km/h)	Required Intersection Sight Distance for Passenger Cars (m)
Atlas Terrace – Looking North	B1	50	105
Atlas Terrace – Looking South	B2	50	95
Fernbank Road – Looking East	B1	70	150
Fernbank Road – Looking West	B2	70	130

Both Fernbank Road and Atlas Terrace include generally straight alignments adjacent to the school site with little horizontal or vertical curvature. Site observations indicate that there are few off-street objects or features along both roads that would obstruct sightlines to the required distances if sufficient sight triangles are provided at the proposed site accesses. With the lands on the west side of Atlas Terrace being open parkland, eastbound traffic on the east-west segment of Atlas Terrace is expected to be visible from all points on the north-south segment of Atlas Terrace.

It is noted that historical site photos indicate that on-street parking is currently permitted on Atlas Terrace; on-street parking may create a visibility obstruction from the Atlas Terrace School accesses, particularly if heavily used during the AM peak hour drop-off period. It may be beneficial to consider an on-street parking prohibition during school pickup and drop-off periods to maintain sightlines from the Atlas Terrace intersections and shift student pickup and drop-off into the site to minimize potential congestion on Atlas Terrace.

14.4 Access Control

Given the peaked nature of school trips, it is not anticipated that sustained traffic demand across the day to warrant all-way stop control, roundabout or signal control will exist at proposed school accesses. The operational analysis documented in Section 14.1 above indicates that the proposed accesses are all expected to operate at an acceptable level of service under side approach stop control. The exception to this will be the full movement access to Fernbank Road, where traffic leaving the site may experience long delays waiting for a gap in AM and PM peak hour traffic along Fernbank Road; this will be a similar situation as that expected at the Fernbank / Rouncey Road intersection under future background conditions. Outbound delays will be more significant for outbound left turns towards Terry Fox Drive due to the need to cross both lanes on Fernbank Road.

As discussed in Section 8.0, there are a number of alternative routes available from the school site that will have residual capacity under future volumes to accommodate traffic leaving the school. It is recommended that operations at the access be monitored under school operations after opening day and conversion of this access to inbound only be considered if the projected traffic growth on Fernbank Road is realized.

14.5 Access Design

The City of Ottawa MMLOS guideline provides methodology for signalized intersections only. As such, MMLOS assessment was not conducted for the proposed site accesses. The previous recommendations for pedestrian accommodations at the proposed accesses are expected to improve pedestrian safety at the access points.

14.6 Intersection Control

The future total traffic operations analysis documented in Section 14.1 of this report indicates that capacity constraints and operational issues are anticipated at the intersections of Terry Fox / Cope, Terry Fox / Fernbank and Fernbank / Rouncey. Future considerations for these intersections include the following:

Terry Fox / Cope and Terry Fox / Fernbank – the City of Ottawa 20205 TMP Update includes the a proposed widening of Terry Fox Drive south of Castlefrank Road / Abbot Street E as part of the needs based network. This widening would provide additional capacity to the NB and SB movements, which could then be reallocated to accommodate additional green time for movements expected to operate poorly under future traffic volumes. A sensitivity analysis has been undertaken using Synchro for the 2033 total traffic volumes with Terry Fox Drive being widened to two NB and SB through

lanes through the intersections with Cope Drive and Fernbank Road and all other turn lane and side approach configurations remaining the same as existing. The results of this sensitivity analysis are summarized in Table 26.

Table 26: Traffic Operations Analysis - 2033 Total Traffic, Terry Fox Widening

Location	Peak Hour	Overall Intersection			Critical Movement(s)			
		LOS	V/C	Delay	Movement	LOS	V/C	Delay
Cope / Terry Fox Signalized	AM	D	0.88	34.3	WBT	D	0.88	57.2
	PM	E	0.92	39.5	WBT	E	0.94	65.6
					SBL	E	0.91	57.2
Fernbank / Terry Fox Signalized	AM	B	0.68	20.4	NBL	B	0.68	23.0
	PM	E	0.94	33.9	WBT	E	0.95	72.6
					NBL	E	0.93	48.0

The analysis results indicate that the planned widening of Terry Fox Drive would be able to mitigate all turning movements at the intersections with both Cope Drive and Fernbank Road to LOS E or better under projected 2033 total traffic volumes. It is noted that the critical movements at the intersections will remain near capacity, but it is anticipated that the provision for additional lane modifications at the intersection to further mitigate these operations can be considered during the EA or Functional Design study for the proposed Terry Fox widening.

The **Fernbank / Rouncey Road** intersection is expected to experience an increase in delay for the SB traffic turning onto Fernbank Road as future traffic volumes along Fernbank Road increase. The warrant for signalization at this intersection has been evaluated based on OTM Book 12 methodology under projected 2033 background traffic volumes. The results of the signal warrant evaluation are summarized in Table 27; the full signal warrant worksheet is included as Appendix M.

Table 27. OTM Book 12 Signal Warrant Evaluation 2033 – Fernbank / Rouncey

Justification	Sub-Justification	Target	% Warrant Met	Warrant Met
1 Minimum Vehicle Volume	A Total Volume	720	100%	No
	B Crossing Volume	255	25%	
2 Delay to Cross Traffic	A Main Road	720	100%	No
	B Crossing Road	75	58%	
3 Combination	A Justification 1	80%	25%	No
	B Justification 2	80%	58%	
4 4-Hour Volume		100%	83%	No

The results of the signal warrant evaluation indicate that signalization is not warranted under projected 2033 background volumes; the additional traffic volumes from the proposed school that are expected to be added to this intersection are relatively low and are not expected to increase the volumes to meet any of the warrant thresholds.

As signalization is not warranted, the provisions of all-way stop control has also been considered. The most recent guidelines for all-way stop control warrants in Ottawa were approved in [October 2020](#) and are based on OTM Book 5 volume warrants with additional consideration of historical collisions, sightlines, and pedestrians. Table 28 below provides a summary of these parameters at the Fernbank / Rouncey intersection.

Table 28: All-Way Stop Control Warrant Review - Fernbank / Rouncey

Criteria	Target	Actual	Warrant Met
Total Volume for All Approaches	500 (urban arterial) 300 (rural arterial) for each of highest 8 hours of the day	> 850 for 8 peak hours	Yes
Total Minor Street volume including pedestrians crossing major street	200 (urban arterial) 140 (rural arterial) for each of highest 8 hours of the day	< 90 for all peak hours	No
Directional Split	Minor street is at least 30% of traffic entering, for each of highest 8 hours of the day	Side approach volumes <9% of total traffic entering	No
Preventable collisions over previous 3 years	4 (urban arterial) 3 (rural arterial)	0*	No
Visibility	Sightline does not meet TAC requirements	Sightline requirements met	No
Pedestrian Exposure	Relevant MMLOS Target	No pedestrians counted or connection pedestrian facilities	No

Based on the City of Ottawa and OTM Book 5 requirements the Fernbank / Rouncey intersection does not experience sufficient traffic volumes on the side approach to warrant all-way stop control, and there are no sightline obstructions or historical collision trends that would require mitigation through all-way stop control.

14.7 Intersection Design

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 / Cope, Terry Fox / Fernbank and Fernbank / Walmart Access are the only signalized intersections; MMLOS analysis of these intersections is summarized in Table 29, detailed MMLOS worksheets are included in Appendix J.

Table 29: Study Area Signalized Intersection MMLOS Analysis

Intersection	Side	Existing				Future (2033)			
		PLOS	BLOS	TLOS	AutoLOS	PLOS	BLOS	TLOS	AutoLOS
TARGET		C	C	E	E	B	C	E	E
Terry Fox Drive / Cope Drive	North (SB)	C	F	C	E	C	F	C	F
	South (NB)	B	F	E		B	F	E	
	East (WB)	B	F	E		B	F	F	
	West (EB)	B	F	D		B	F	C	
Terry Fox Drive / Fernbank Road	North (SB)	D	F	D	E	D	F	E	F
	South (NB)	B	F	E		B	F	F	

	East (WB)	B	F	A		C	F	A	
	West (EB)	C	F	F		C	F	E	
Fernbank Road / Walmart Access	North (SB)	B	D	-	C	B	D	-	C
	East (WB)	A	B	B		A	B	B	
	West (EB)	B	D	A		B	D	A	

The results of the intersection MMLOS evaluation indicate the following:

- **Pedestrian LOS (PLOS)** has an existing target of C based on the outer urban / suburban designation, but will increase to B when within 300m of a school. All existing signalized pedestrian crossings at the study area intersections meet this target under existing and future conditions with the exception of the north crossing of the Fernbank / Terry Fox intersection which meets PLOS D as a result of the conflicting channelized right turn. Future PLOS is similar to existing as all crossing configurations are assumed to remain the same, but signal timing optimization to accommodate future traffic volumes will slightly reduce effective walk times and increase pedestrian delay in some cases. It is anticipated that the future target of B could be met for many of the study area crossings through the conversion of the conflicting left turns to fully protected operation.
- **Bicycle LOS (BLOS)** is currently F for all crossings at the Terry Fox / Cope and Terry Fox / Fernbank intersections and is expected to remain at this level in the future as there are no current plans to add cycling facilities along these corridors. BLOS at the Fernbank / Walmart will correspond to D on the north and west legs but B on the east leg as a result of there being no NB left turn by bikes at the T-intersection. The provision of cycling facilities at all of the intersections would be required to meet the existing and future BLOS targets.
- **Transit LOS (TLOS)** meets the mix traffic target of E at most movements at the signalized study area intersections, but existing peak hour delays at the EB left turn at the Terry Fox / Fernbank intersection will correspond to TLOS F. Under projected future volumes, traffic growth and the resulting signal optimization will also increase the Terry Fox / Cope WB and Terry Fox / Fernbank NB transit movements to TLOS F, but will improve the Terry Fox / Fernbank EB left to TLOS E.
- **Vehicle LOS (VLOS)** is currently E under existing operations and will increase to F at the two intersections with Terry Fox Drive under projected future volumes, as noted in the preceding traffic operations analysis. The Fernbank / Walmart intersection will operate at an acceptable LOS C under existing and future volumes.

It is noted that proposed Terry Fox widening project in the Ottawa TMP needs-based network will provide an opportunity to include improved pedestrian and cycling facilities along the Terry Fox Drive corridor to improve PLOS and BLOS to meet the future targets, as well as provide additional traffic capacity to reduce congestion and improve TLOS and VLOS.

15.0 SUMMARY AND RECOMMENDATIONS

The Ottawa Catholic School Board (OCSB) is planning to construct a new secondary school on the site municipally known as 5431 Fernbank Road; the site is bounded by Fernbank Road to the south, Atlas Terrace and the adjacent residential development to the west, Cope Drive to the north and the Wal-Mart Shopping Centre to the east. The proposed school will accommodate an anticipated population of 1,526 students and staff. This Transportation Impact Assessment Report provides an overview of the proposed school site plan from a transportation perspective in support of the site plan control application.

Analysis of the proposed site plan following the methodology of the current City of Ottawa TIA Guidelines indicates the following:

- Trip generation for the proposed school was developed through a first principles estimation based on the proposed school catchment area and assumption of student transportation provided by OSTA for students outside of the 3.2 radius. the weekday AM commuter peak is assumed to include both student and staff arrivals, but secondary school

student afternoon departures typically occur in early afternoon before the PM commuter peak. As a result, PM peak hour site generated traffic was assumed to consist of staff trips only.

- Traffic operations analysis of the study area intersections indicates that most of the unsignalized and roundabout intersections in the study area currently operate at an acceptable level of service and will continue to do so under future volumes projected to a 2033 horizon with the school in place. However, the following locations may experience poor operations under projected volumes:
 - The Terry Fox / Cope intersection operates with several movements near capacity under existing volumes. Under future background and total volumes, operations during the AM peak hour can be maintained at level of service (LOS) E or better, meeting City targets. However, background growth to the 2033 horizon will result in several PM peak hour movements at this intersection exceeding capacity, the additional school generated traffic will have a relatively minor impact on these operations. While it does not currently have an established timeline, the recently updated Ottawa Transportation Master Plan identified a future project to widen Terry Fox Drive to four lanes south of Castlefrank Road; this widening is expected to mitigate PM peak hour operations to meet City targets and will provide an opportunity to evaluate mitigation for other intersection movements that will remain near capacity.
 - The Terry Fox / Fernbank intersection operates with several PM peak hour movements near capacity under existing volumes; future background traffic growth will result in several of these movements exceeding capacity. Similar to the intersection with Cope Drive, projected site generated traffic from the proposed school will have a relatively minor impact on these operations but will not allow for mitigation through signal timing modifications. The analysis indicates that the heavier school-generated AM peak hour traffic can be accommodated at an acceptable level of service. Similar to the Terry Fox / Cope intersection, the proposed widening of Terry Fox Drive is expected to improve all movements at this intersection to an acceptable level of service, and provide an opportunity for to examine further mitigations at this intersection.
 - Future traffic growth along Fernbank Road will result in fewer gaps in future traffic to accommodate turning movements, particularly left turns, from stop-controlled side streets. This will result in a poor level service for turns from Rouncey Road southbound as well as the outbound movements from the proposed access to the new school from Fernbank Road. The intersection of Fernbank Road and Rouncey Road is not expected to meet warrants for signalization or all-way stop control under future volumes; the school access is not expected to meet these warrants either as it will lack the required consistent traffic demand across the day. This operation may be mitigated at the school access by signing it as inbound only if outbound delays increase to unacceptable levels under future conditions; there are a number of alternative routes identified that may be used as an alternate to outbound turns onto Fernbank Road. City of Ottawa roundabout screening indicates some potential benefits for conversion of the Fernbank / Rouncey intersection to roundabout control, but would likely require property acquisition and would require additional review by the City.
- The proposed site plan was evaluated with turning templates for the anticipated movements by fire trucks, deliveries (HSU trucks), garbage collection and school buses; this review did not indicate any potential conflicts in the proposed access and driveway configurations.
- The proposed on-site parking supply is anticipated to satisfy the Ottawa zoning by-law requirements for total parking spaces and accessible spaces.
- The proposed access configurations generally comply with the requirements of the Ottawa Private Approach Bylaw, but it is noted that the Atlas Terrace south access and Fernbank Road bus access to the school both exceed the maximum width of 9.0m. For the Atlas Terrace access, the proposed width of 9.1m is consistent with Atlas Terrace continuing to the west and creates a T-intersection with a consistent width for east-west traffic flow. For the Fernbank Access, the additional width has been confirmed to accommodate the anticipated bus turning movements from Fernbank Road and provide maneuvering and passing space for queued buses.
- MMLOS segment review indicates that PLOS targets are generally met by the existing sidewalk network and will be met by the new sidewalk proposed as part of the school site plan. BLOS targets are met on Atlas Terrace but are generally not met on Cope Drive and Fernbank Road due to the lack of existing facilities. TLOS segment targets are generally met as the surrounding roads are not expected to significantly impede transit operations.

- Intersection MMLOS was reviewed for the three signalized intersections in the study area. the current PLOS target C is met on most of the crossings examined, but the target will increase to B in the future to the proximity to the new school which will be more difficult to achieve on the existing intersection configurations. Intersection BLOS is currently F on most crossings as a result of the lack of existing facilities. As observed in the future traffic analysis, the long delays at the intersections along Terry Fox Drive will contribute to poor intersection TLOS and VLOS. It is anticipated that the future Terry Fox widening project will provide an opportunity to examine potential MMLOS improvements at these intersections.
- The TIA includes a review of the City TDM measure checklists – potential TDM measures for the school includes the designation of a coordinator and provision of information and training to students and staff to inform about the availability of alternative travel modes. It is noted that existing programs by OSTA and Envirocentre can provide additional resources specifically targeted to schools.
- Anticipated transit trip generation by the proposed school would be equivalent to three new conventional buses or two articulated buses during the AM peak hour and PM student dismissal. Additional coordination with OC Transpo will be required to determine if this is structured as additional buses on nearby fixed routes or provision of a dedicated high school route.
- Pedestrian trips to the school are expected to use the existing pedestrian network; segment MMLOS on the boundary road indicates that the relevant PLOS targets are met by the existing sidewalk configuration and spacing of road crossings.

Overall, the proposed school is expected to be accommodated by the surrounding network from a transit perspective. The higher AM peak hour school trip generation can be accommodated by the surrounding intersections at an acceptable level of service; analysis of the PM peak hour indicates operational issues at the two signalized intersections on Terry Fox Drive under background volumes upon which the school generated PM volumes will have only a minor impact. The more significant outbound traffic from student departures is expected to occur in early afternoon and will no coincide with the PM commuter peak period. The future widening of Terry Fox Drive as proposed in the current Ottawa Transportation Master Plan is expected to mitigate many of the anticipated operational issues and provide an opportunity for further mitigation and improvements to facilities for all modes.



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)



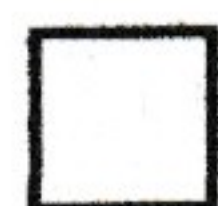
I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;



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 registered¹ professional in good standing, whose field of expertise



is either transportation engineering



or transportation planning.

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

Dated at Ottawa this 28th day of November, 20 25.
(City)

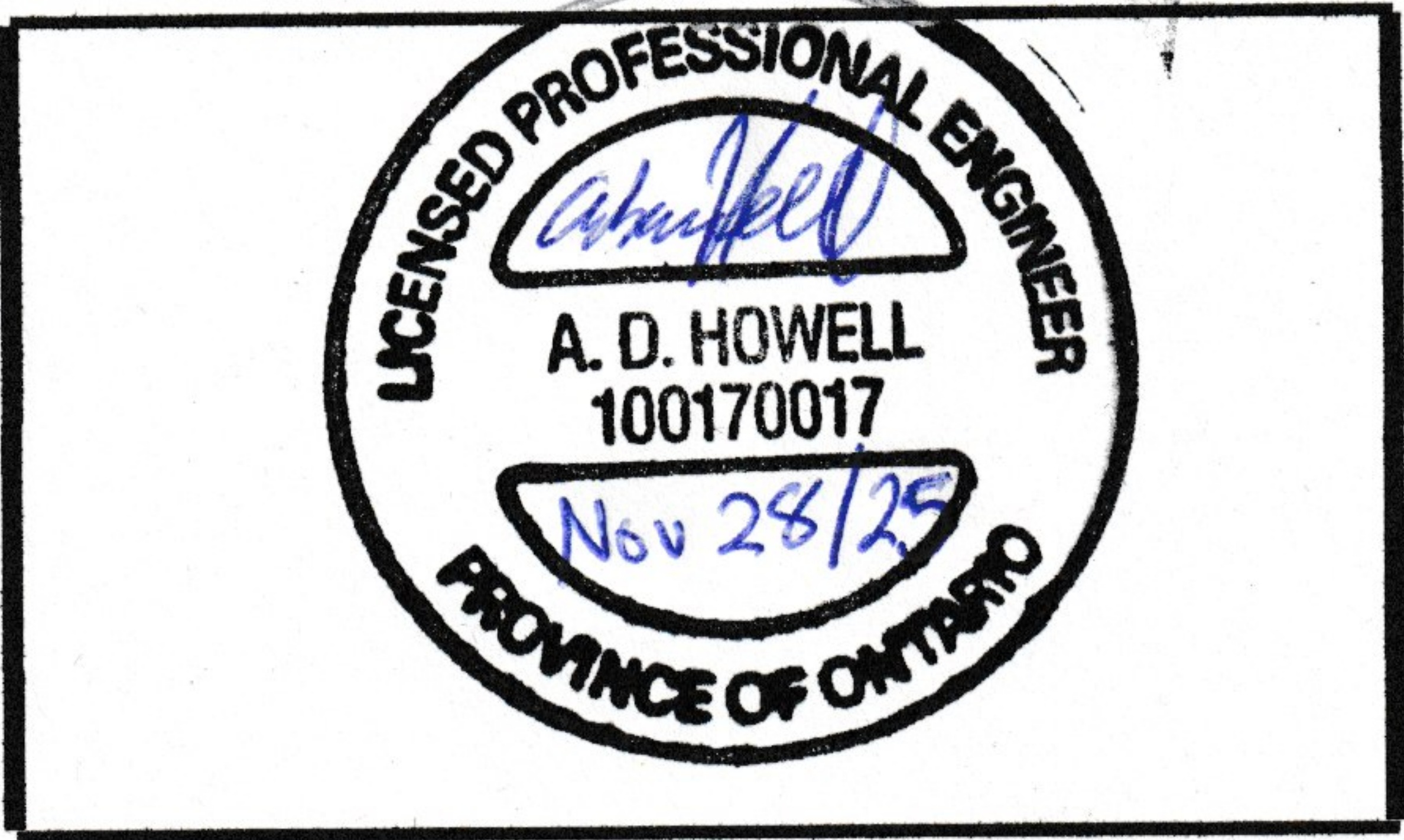
Name : Adam Howell, P.Eng.

Professional title: Senior Project Manager, Transportation Planning

Signature of individual certifier that they meet the above four criteria

Office Contact Information (Please Print)
Address: <u>2936 Baseline Road, Suite 200</u>
City / Postal Code: <u>Ottawa, ON, K2H 1B3</u>
Telephone / Extension: <u>613-592-6060</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: 2025.11.28
13:48:42-05'00'

Revision Date: December 2023

APPENDIX A
TIA Screening Report



Certification Form for Transportation Impact Assessment (TIA) Study Program Manager

TIA Plan Reports

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

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

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

Certification

- ☒ I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines (Update Effective July 2023);
- ☒ I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
- ☒ I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

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

Revision Date: June, 2023

Transportation Impact Assessment Guidelines

☒ I am either a licensed or registered¹ professional in good standing, whose field of expertise [check ☒ appropriate field(s)]:

☒ is either transportation engineering

☐ or transportation planning.

Dated at this day of , 20.

(City)

Name:

Professional Title:

B. Byvelds

Signature of Individual certifier that they meet the above four criteria

Office Contact Information (Please Print)

Address:

City / Postal Code:

Telephone / Extension:

E-Mail Address:

Stamp

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

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	5431 Fernbank Road
Description of Location	North side of Fernbank Road and South Side of Cope Drive; Midblock between Terry Fox Drive and Rouncey Road
Land Use Classification	High School
Development Size (units)	62 Classrooms + 30 Portables
Development Size square metre (m ²)	
Number of Accesses and Locations	Three to Fernbank Road, One to Atlas Terrace
Phase of Development	One
Buildout Year	

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

2. Trip Generation Trigger

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

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	60 units
Multi-Use Family (Low-Rise) ¹	90 units
Multi-Use Family (High-Rise) ¹	150 units
Office ²	1,400 m ²
Industrial ²	7,000 m ²
Fast-food restaurant or coffee shop ²	110 m ²
Destination retail ²	1,800 m ²
Gas station or convenience market ²	90 m ²

If the proposed development size is equal to or greater than the sizes identified above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☒
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)? ²	☐	☒

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

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 kilometers per hour (km/h) or greater?	☐	☒
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☒
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☒	☐
Is the proposed driveway within auxiliary lanes of an intersection?	☒	☐
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☒

² Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

Transportation Impact Assessment Guidelines

	Yes	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	☐	☒
Does the development include a drive-thru facility?	☐	☒

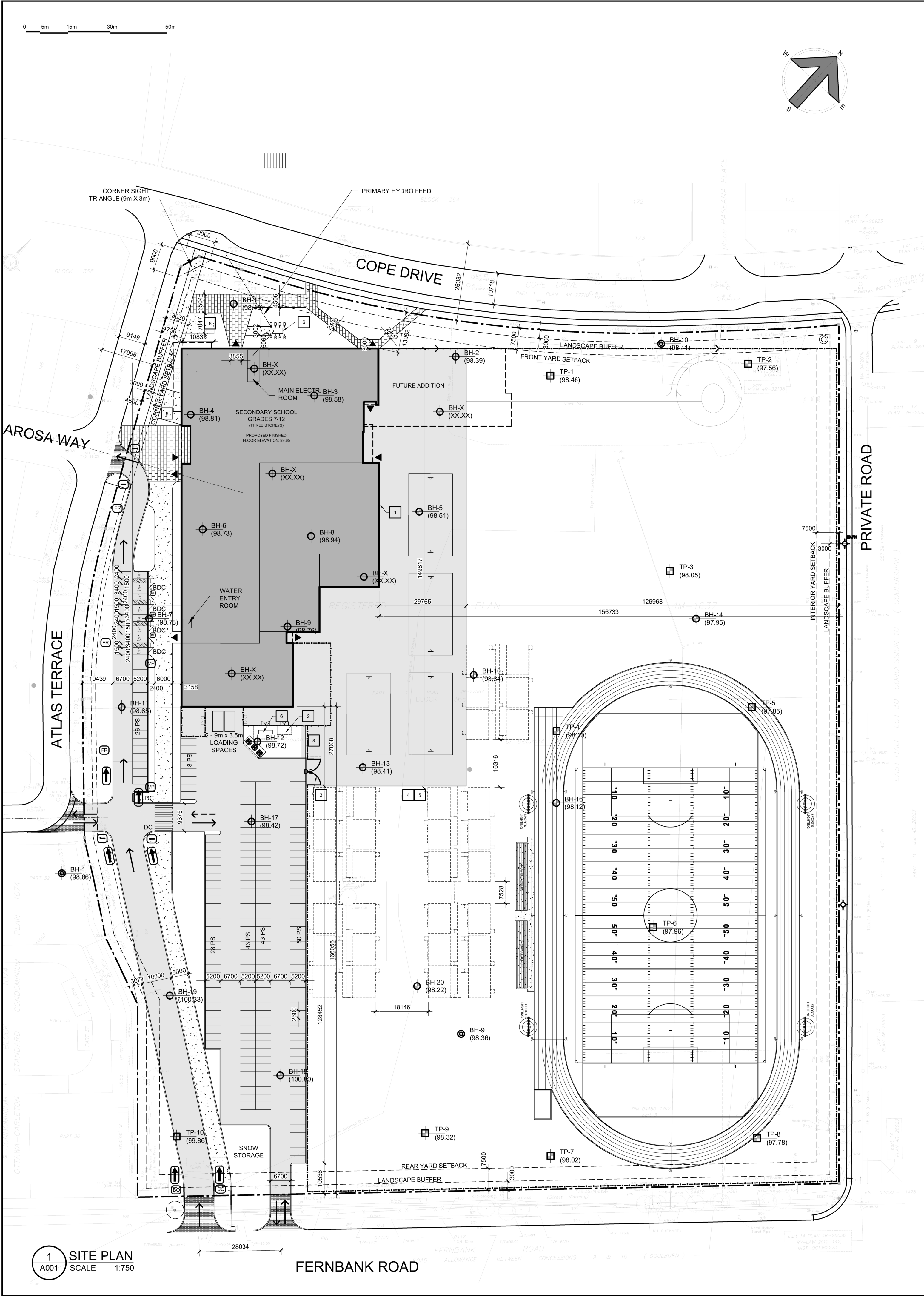
If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

5. Summary

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☒	☐
Does the development satisfy the Location Trigger?	☐	☒
Does the development satisfy the Safety Trigger?	☒	☐

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

APPENDIX B
Proposed Site Plan Concept



SITE DATA		
ALL ZONING DEFINITIONS AND REQUIREMENTS AS PER CITY OF OTTAWA ZONING BY-LAW, 2008-250		
ADDRESS:	5431 FERNBANK ROAD, OTTAWA	
AREA	C SUBURBAN	
WARD	6 STITTSVILLE (COUNC. GLEN GOWER)	
ZONING	IIA	
LOT AREA	73,967 m2 (18.27 ACRES)	
BUILDING FOOTPRINT	±6,987 m2 (75,205 s.f.)	
TOTAL FLOOR AREAS (GROSS)	±14,776 m2 (159,600 s.f.)	
FUTURE PORTABLES (72 m2 EACH)	2,160 M2 (23,250 SF.)	
ZONING MECHANISMS	PROVISIONS (IIA SUBZONE)	PROVIDED
(a) MINIMUM LOT AREA (m2)	400	73967
(b) MINIMUM LOT WIDTH (m)	15	239.30
(c) MINIMUM FRONT YARD SETBACK (m)	7.5	±13
(d) MINIMUM INTERIOR SIDE YARD SETBACK (m)	7.5	±20
(e) MINIMUM CORNER SIDE YARD SETBACK (m)	4.5	
(f) MINIMUM REAR YARD SETBACK (m)	7.5	
(g) MAXIMUM BUILDING HEIGHT (m)	15	±13

PARKING CALCULATION		
GRADE 7&8 CLASSROOMS (1.5 PS/CLASS)	16 X 1.5 = 24	
GRADES 9-12 CLASSROOMS (2 PS/CLASS)	46 X 2 = 92	
PORTABLE CLASSROOMS		
GRADE 7&8 CLASSROOMS (1.5 PS/CLASS)	10 X 1.5 = 15	
GRADES 9-12 CLASSROOMS (2 PS/CLASS)	20 X 2 = 40	
BARRIER FREE PARKING SPACES (3.1.2, TABLE 3)	7 (3 TYPE A + 4 TYPE B)	8 (4A + 4B)
STANDARD PARKING SPACE	5.2mx2.6mx6.7 m AISLE	
TOTAL REQUIRED	171	197
BICYCLE PARKING CALCULATION		
MAIN SCHOOL (1 PER 100 m2)	14,766 / 100 = 148	
FUTURE PORTABLES (1 PER 100 m2)	2,160 / 100 = 22	
TOTAL REQUIRED	170	170
STANDARD BICYCLE PARKING SPACE	1.8x0.6 m	

LOADING SPACES		
TABLE 113A(a) (±10000 m2)	2 REQUIRED (3.5 X 7m)	2
LANDSCAPED BUFFER		
ABUTTING THE STREET (PARKING LOT 100+ SPACES)	3m	
NOT ABUTTING THE STREET (PARKING LOT 100+ SPACES)	3m	

BUILDING CODE DATA	
ALL REQUIREMENTS AS PER ONTARIO BUILDING CODE OBC 2024	
MAJOR OCCUPANCY	GROUP A, DIVISION 2
BUILDING AREA	+6,987 m ² (75,205 s.f.)
TOTAL GROSS FLOOR AREA	+14,776 m ² (159,600 s.f.)
NUMBER OF STOREYS	3
NO OF STREETS FOR FIRE FIGHTING	1
BUILDING CLASSIFICATION	3.2.2.24, ANY AREA, UP TO 6 STOREYS, SPRINKLERED
SPRINKLERED BUILDING	YES
CONSTRUCTION TYPE	NON-COMBUSTIBLE
FLOOR ASSEMBLIES & F.R.R	1 HOUR

TOPOGRAPHIC SURVEY INFO
SURVEY PROPERTY BOUNDARIES TAKEN FROM TOPOGRAPHIC PLAN OF SURVEY OF BLOCK 365, REGISTERED PLAN 4M-1637, CITY OF OTTAWA
PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
JULY 13, 2023 (JOB N O. 23493-23)

- SPECIFIC CONSTRUCTION NOTES:**
- PROVIDE PERIMETER FOUNDATION DRAINAGE: 100 TO 150mm Ø, GEOTEXTILE-WRAPPED, PERFORATED, CORRUGATED, PLASTIC PIPE SURROUNDED ON ALL SIDES BY 150mm OF 10mm CLEAR CRUSHED STONE. PLACE AT THE FOOTING LEVEL AROUND THE EXTERIOR OF THE STRUCTURE. THE PIPE TO HAVE A POSITIVE GRAVITY CONNECTION TO THE STORM SEWER OUTLET. SEE CIVIL.
 - GAS METER CHAIN LINK FENCE:
- ±4000 LONG x 2135 HIGH ALONG BACK OF GAS METER STATION
- TOP: CHAIN LINK FENCE INSTALLED ACROSS THE TOP
- FENCE FABRIC: 8 GAUGE, VINYL COATED, BLACK
- LOCKING DOUBLE GATES @ 1220 WIDE EACH
- LOCKING DEVICE; ENBRIDGE TO SUPPLY MASTER X2268 LOCK UPON COMPLETION
- FENCE POSTS - 100mm, SCHEDULE 80, IN CONCRETE

COORDINATE WITH MECHANICAL
 - DEPRESSED CURB 6m WIDE - REFER TO CIVIL AND LANDSCAPING
 - PROVIDE TRENCHES FOR POWER, PA/SECURITY, COMMUNICATIONS, AND FIRE ALARM. REFER TO ELECTRICAL.
 - PROVIDE MANHOLE TO SERVICE FUTURE PORTABLES. REFER TO ELECTRICAL.
 - PROVIDE 8000x4500mm GENERATOR ENCLOSURE & GENERATOR. REFER TO ELECTRICAL.
 - 1880x3760mm TRANSFORMER PAD MOUNT WITH 8 BOLLARDS
 - BIKE RACKS - SEE LANDSCAPING (SEE 2/A002)
 - EARTH BINS (SEE 3/A002)
 - VEHICULAR GATE (SEE 8/A002)

- GENERAL NOTES:**
- ALL CONCRETE CURBS AND CONCRETE DEPRESSED CURBS TO BE CONSTRUCTED AS PER CITY OF OTTAWA STANDARD DETAIL SC1.1
 - ALL SITE ENTRANCES TO BE CONSTRUCTED AS PER CITY OF OTTAWA STANDARD DETAIL SC7.1
 - ALL BARRIER FREE DEPRESSED CURBS TO BE CONSTRUCTED AS PER CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS (SECTION 3.4)
 - ALL TWSI INSTALLATIONS ARE TO CONFORM TO ONE OF FIGURES 33a, 33b, 34, OR 35 OF THE CITY OF OTTAWA ACCESSIBILITY STANDARDS.

SYMBOL LEGEND:	
EX-FH	EXISTING FIRE HYDRANT
FP	FLAG POLE - SEE DETAIL 16/A002
EX-LS	EXISTING LIGHT STANDARD
R-EXLS	RELOCATED EXISTING LIGHT STANDARD
LS	LIGHT STANDARD - REFER TO ELECTRICAL
EX.CB	EXISTING CATCH BASIN
CB	CATCH BASIN - REFER TO CIVIL
CBMH	CATCH BASIN/MANHOLE - REFER TO CIVIL
SAMH	SANITARY MANHOLE - REFER TO CIVIL
STMH	STORM MANHOLE - REFER TO CIVIL
▲ ▼	BUILDING ENTRANCE/EXIT
FDC	FIRE DEPARTMENT CONNECTION
FH	NEW FIRE HYDRANT
WM	WATER METER (IN WATER ENTRY ROOM)
WMR	WATER METER REMOTE READOUT
BDC	NEW BARRIER-FREE DEPRESSED CURB - SEE DETAIL 15/A002
DC	NEW DEPRESSED CURB - REFER TO CIVIL
	NEW CURB
	PROPERTY LINE
	NEW CHAIN LINK FENCE
B	BOLLARD - SEE DETAIL 8/A002
KB	KNOCK-DOWN BOLLARD - SEE DETAILS 14/A002
TWSI	TACTILE WALKING SURFACE INDICATOR, REFER TO LANDSCAPE
TP-1 (98.46)	TESTPIT LOCATION, REFER TO GEOTECHNICAL REPORT
BH-8 (98.94)	BOREHOLE LOCATION, REFER TO GEOTECHNICAL REPORT

GROUND COVER LEGEND:	
	GRASS
	ASPHALT
	CONCRETE
	PAVERS

SIGNAGE LEGEND:

 NO TRESPASSING

 BF PARKING

 ONE WAY

 NO ENTRY

 VISITOR PARKING

 FIRE ROUTE

 BUSES ONLY

 STAFF PARKING



ARCHITECT:
N45 ARCHITECTURE INC
71 BANK STREET, 7TH FLOOR
OTTAWA, ONTARIO, K1P 5N2
613.224.0095
VLADIMIRP@N45.CA

LANDSCAPE ARCHITECT:
RUHLAND & ASSOCIATES LTD.
200-1750 COURTHOOD CRESCENT
OTTAWA, ONTARIO, K2C 2B5
613.224.4744
MRUHLAND@RALA.CA

CIVIL ENGINEER:
JP2G CONSULTANTS INC.
1150 MORRISON DRIVE, SUITE 410
OTTAWA, ONTARIO, K2H 8S9
613.828.7800
ZACH.BAUMAN@JP2G.COM

MECHANICAL & ELECTRICAL ENGINEER:
GOODKEY, WEEDMARK & ASSOCIATES LTD.
1688 WOODWARD DRIVE
OTTAWA, ONTARIO, K2C 3R8
613.727.5111 x299
RAJV@GVAL.COM

LAND SURVEYOR:
ANNIS, O'SULLIVAN, VOLLEBEKK LTD
14 CONCOURSE GATE, SUITE 500
OTTAWA, ONTARIO, K2E 7S8
613.727.0850
NEPEAN@AOVLTD.COM

GEOTECHNICAL ENGINEER & ENVIRONMENTAL:
EXP SERVICES INC.
100-2650 QUEENSWAY DRIVE
STANDARD DETAIL SC1.1
613.888.1689 x53242
ISMAIL.TAKI@EXP.COM

TRAFFIC ENGINEER:
ROBINSON CONSULTANTS
210-350 PALLADIUM DRIVE
OTTAWA, ONTARIO, K2V 1A8
613.562.0060
AKHVELL@RCIL.COM

05	ISSUED FOR SPC	XXNOV25
04	ISSUED FOR 66% REVIEW	14NOV25
03	ISSUED FOR SPC APPLICATION	15OCT25
02	33% CLIENT REVIEW	19SEP25
01	ISSUED FOR SITE PLAN PRE-CONSULT	05SEP25
NO.	revision	date

N45 ARCHITECTURE INC.
71 Bank Street, 7th Floor - Ottawa, Ontario, K1P 5N2
tel. 613.224.0095 fax 613.224.9811

FERNBANK CATHOLIC HIGH SCHOOL

5431 FERNBANK ROAD
OTTAWA, ONTARIO
K2S 0T7

PROJECT NORTH

seal

W N E S

:\Signatures Stamps\N45_OAA_Ramp.jpg

drawing title SITE PLAN	
scale AS NOTED	drawn by X.X.
date NOV. 2025	checked by V.P.
project number 24-835	drawing number A001
CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES.	
DO NOT SCALE DRAWINGS	

APPENDIX C

Traffic Data

Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

Start Time: 07:00

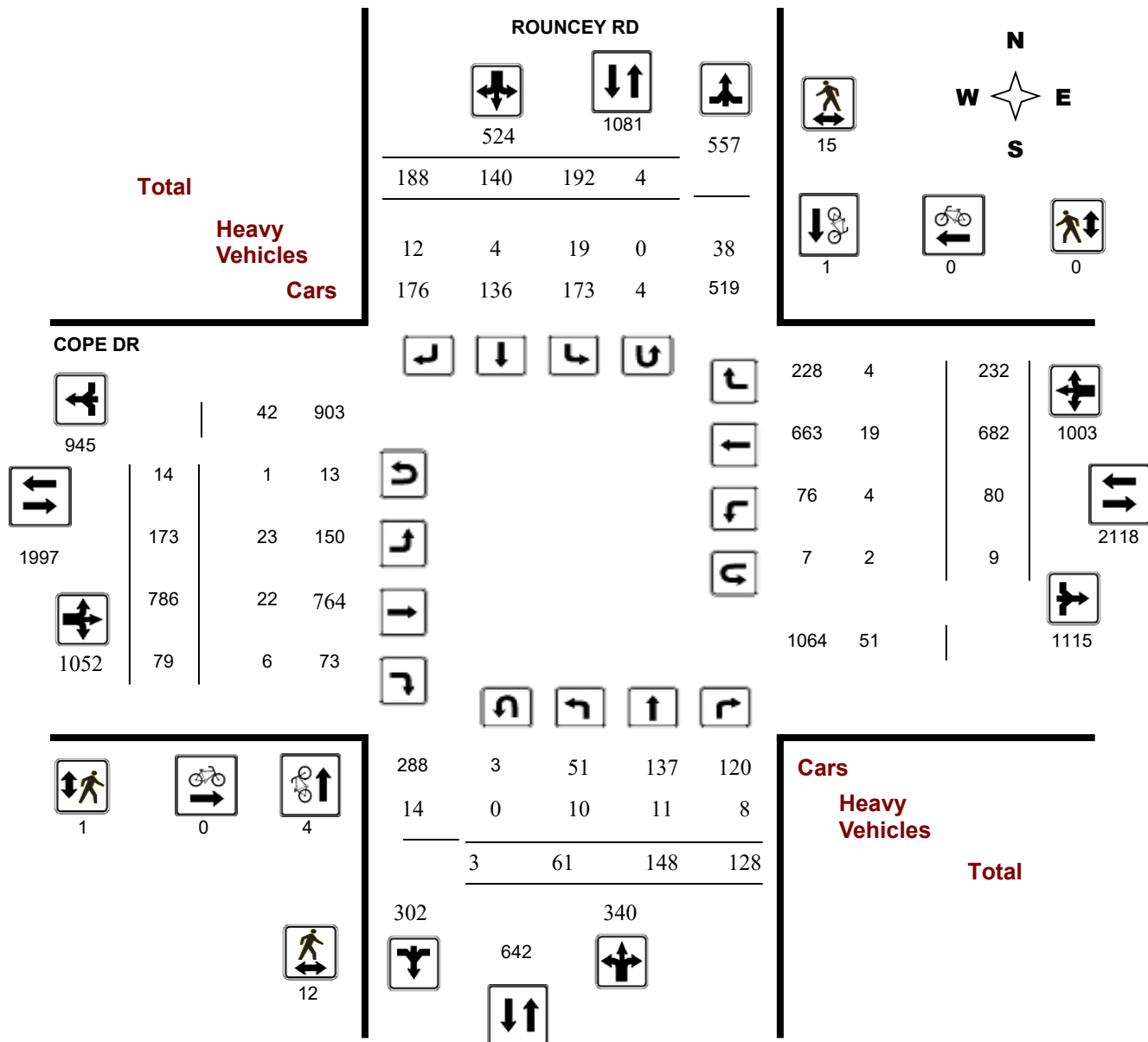
WO No:

40751

Device:

Miovision

Full Study Diagram



Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

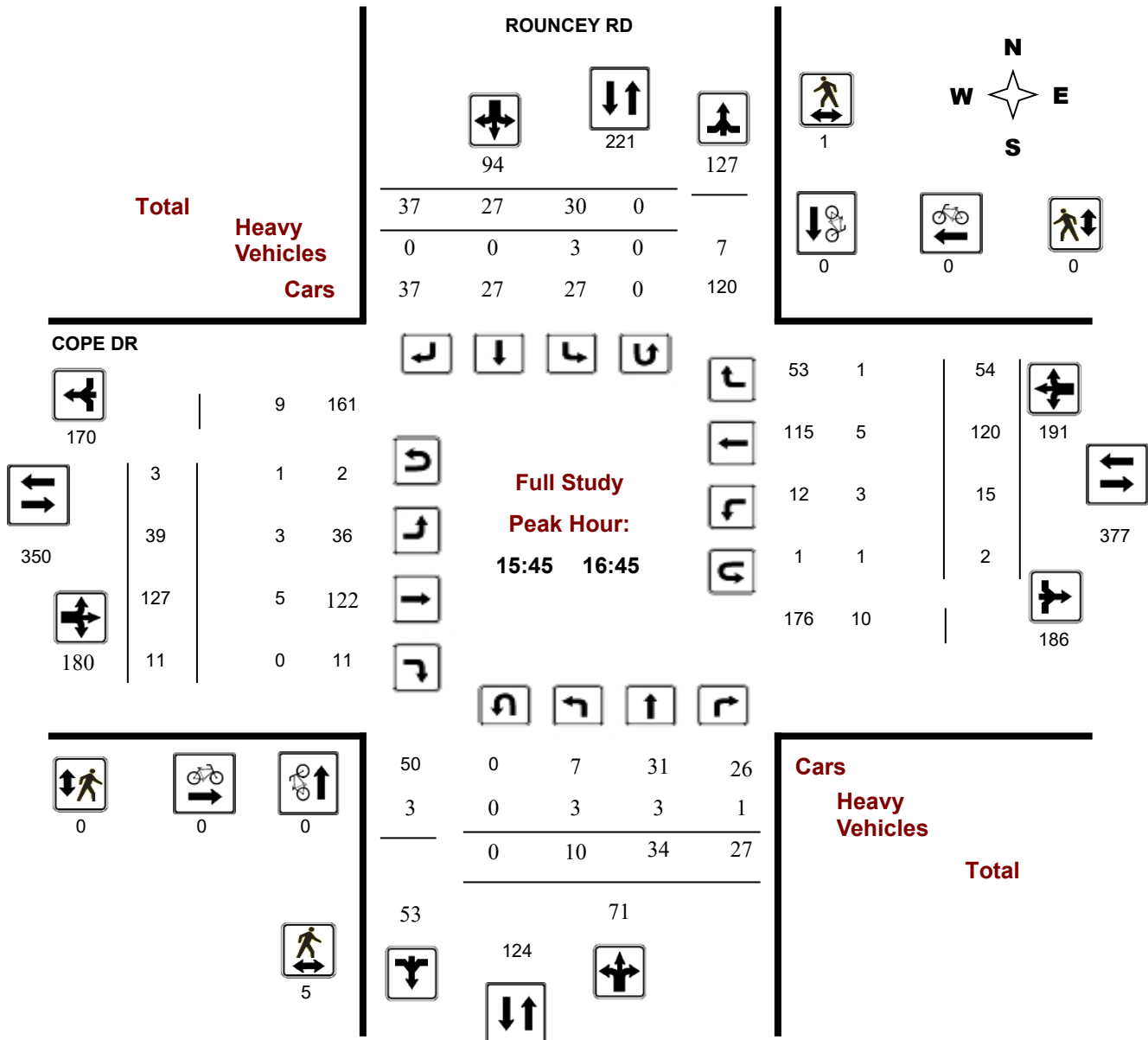
Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

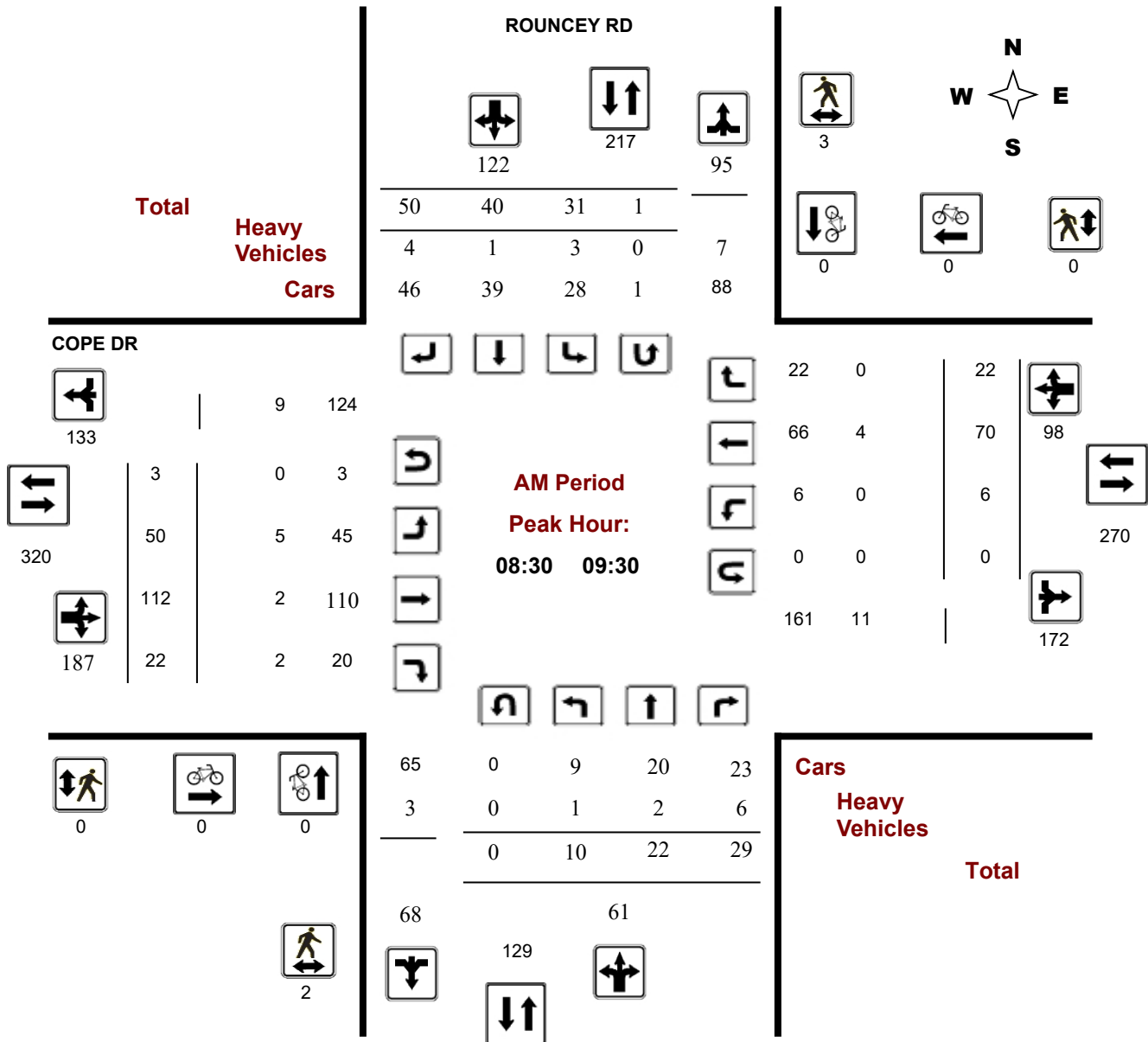
Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

Start Time: 07:00

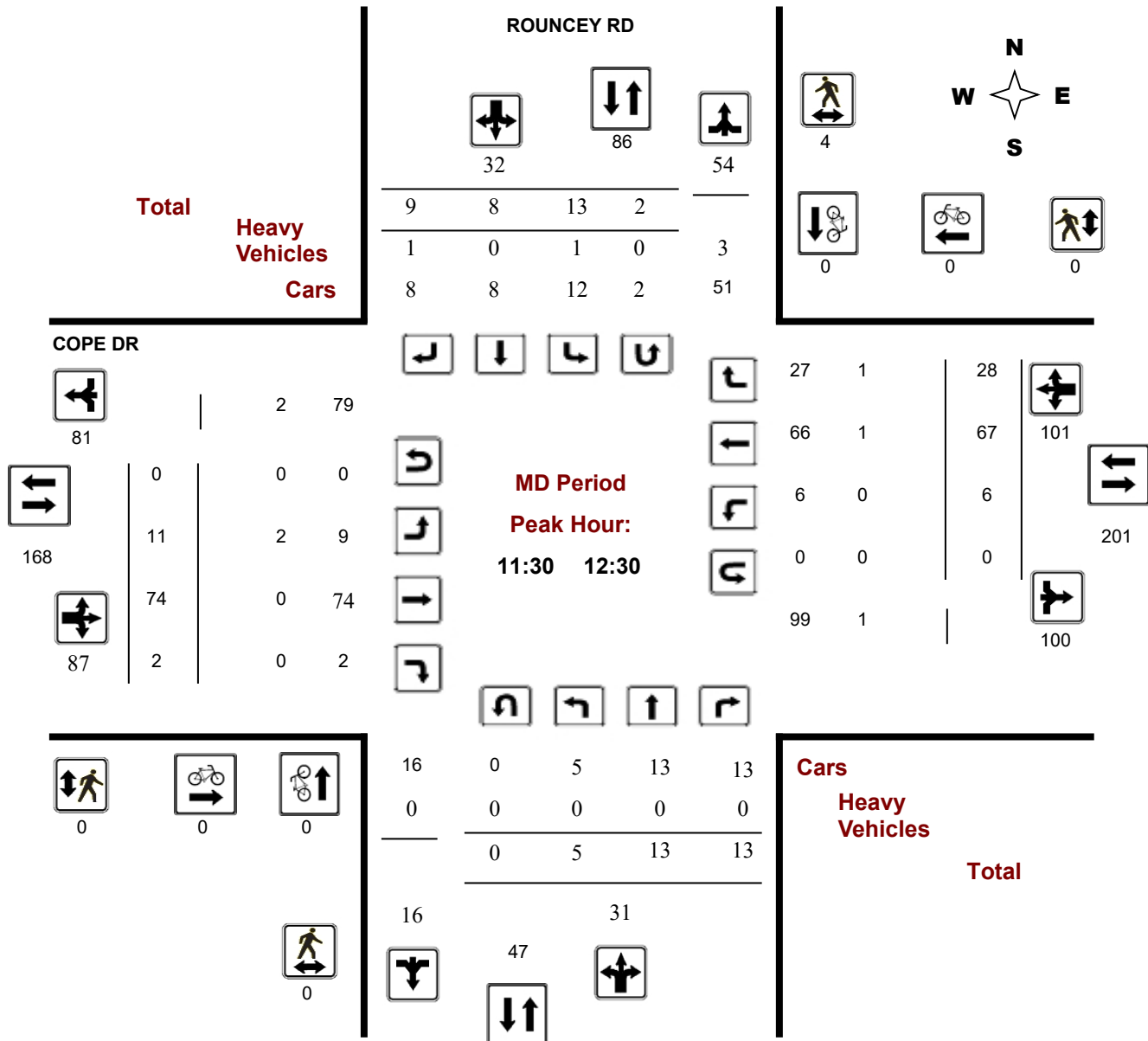
WO No:

40751

Device:

Miovision

MD Period Peak Hour Diagram



Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

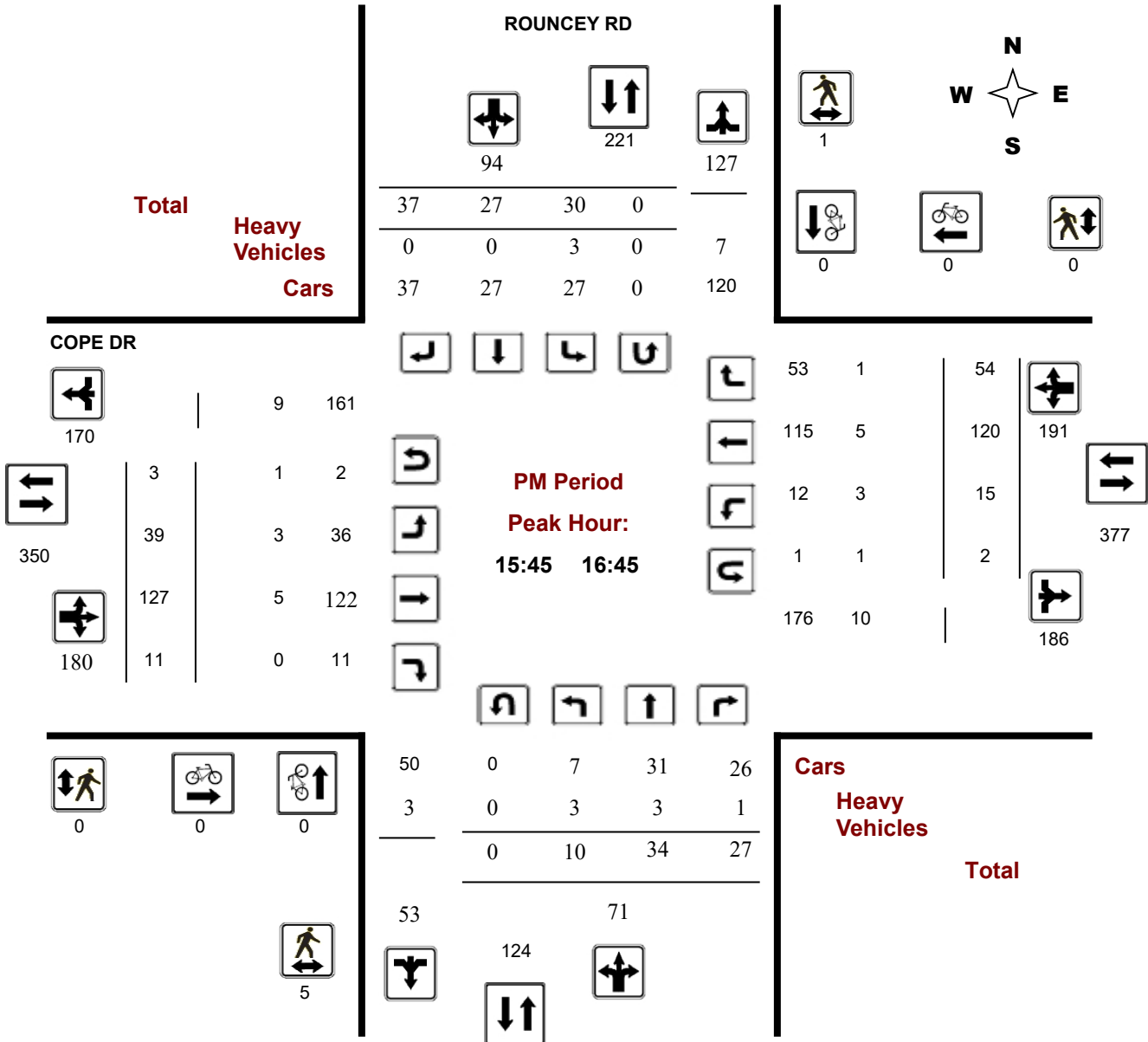
Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, January 17, 2023

Total Observed U-Turns

Northbound: 3 Southbound: 4
Eastbound: 14 Westbound: 9

AADT Factor

1.10

ROUNCEY RD

COPE DR

Period	Northbound					Southbound					Eastbound					Westbound					Grand Total
	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	4	16	10	30		22	12	12	46	76	13	84	12	109		2	51	8	61	170	246
08:00 09:00	4	16	22	42		30	20	31	81	123	23	111	7	141		6	72	18	96	237	360
09:00 10:00	10	26	22	58		23	31	37	91	149	44	103	23	170		8	64	23	95	265	414
11:30 12:30	5	13	13	31		13	8	9	30	61	11	74	2	87		6	67	28	101	188	249
12:30 13:30	11	15	6	32		17	5	10	32	64	9	62	5	76		9	57	23	89	165	229
15:00 16:00	9	16	12	37		27	33	53	113	150	25	87	12	124		26	108	31	165	289	439
16:00 17:00	9	30	27	66		33	18	20	71	137	31	134	11	176		12	134	52	198	374	511
17:00 18:00	9	16	16	41		27	13	16	56	97	17	131	7	155		11	129	49	189	344	441
Sub Total	61	148	128	337		192	140	188	520	857	173	786	79	1038		80	682	232	994	2032	2889
U Turns				3					4	7				14					9	23	30
Total	61	148	128	340		192	140	188	524	864	173	786	79	1052		80	682	232	1003	2055	2919
EQ 12Hr	85	206	178	473		267	195	261	728	1201	240	1093	110	1462		111	948	322	1394	2856	4057

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

1.39

AVG 12Hr	94	227	196	520		294	280	377	801	1321	264	1202	121	1608		122	1043	354	1533	3142	4463
-----------------	----	-----	-----	-----	--	-----	-----	-----	-----	------	-----	------	-----	------	--	-----	------	-----	------	------	------

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

1.10

AVG 24Hr	123	297	257	681		385	367	494	1049	1731	346	1575	159	2106		160	1366	464	2008	4116	5847
-----------------	-----	-----	-----	-----	--	-----	-----	-----	------	------	-----	------	-----	------	--	-----	------	-----	------	------	------

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

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

ROUNCEY RD

COPE DR

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	4	2	7	5	2	2	9	16	2	13	1	16	1	7	0	8	24	40
07:15 07:30	1	4	0	5	2	2	3	7	12	4	28	3	36	1	8	0	10	46	58
07:30 07:45	2	2	5	9	7	4	2	13	22	3	22	6	32	0	14	4	19	51	73
07:45 08:00	1	6	3	11	8	4	5	17	28	4	21	2	27	0	22	4	26	53	81
08:00 08:15	1	4	4	9	7	4	8	19	28	6	28	4	39	1	12	3	16	55	83
08:15 08:30	0	5	5	10	7	4	5	16	26	3	37	1	42	3	22	3	29	71	97
08:30 08:45	1	3	8	12	7	4	6	17	29	8	24	1	34	1	15	6	22	56	85
08:45 09:00	2	4	5	11	9	8	12	29	40	6	22	1	30	1	23	6	30	60	100
09:00 09:15	5	8	5	18	8	23	17	49	67	9	25	12	46	3	18	2	23	69	136
09:15 09:30	2	7	11	20	7	5	15	27	47	27	41	8	77	1	14	8	23	100	147
09:30 09:45	3	6	3	12	4	1	3	8	20	5	23	3	31	4	18	9	31	62	82
09:45 10:00	0	5	3	8	4	2	2	8	16	3	14	0	18	0	14	4	18	36	52
11:45 12:00	2	5	2	9	6	2	4	12	21	2	18	0	20	2	11	10	23	43	64
17:45 18:00	2	3	1	6	6	2	5	13	19	3	34	1	38	4	26	6	37	75	94
17:00 17:15	3	5	3	12	7	5	3	15	27	5	39	2	48	0	30	14	44	92	119
11:30 11:45	1	5	3	9	1	3	2	7	16	3	16	1	20	1	20	6	27	47	63
12:00 12:15	0	1	4	5	2	2	1	6	11	1	21	0	22	3	14	8	25	47	58
12:15 12:30	2	2	4	8	4	1	2	7	15	5	19	1	25	0	22	4	26	51	66
12:30 12:45	1	7	1	9	1	2	4	8	17	1	17	2	20	4	12	7	23	43	60
12:45 13:00	5	4	2	11	3	2	3	8	19	4	12	1	17	1	20	5	26	43	62
13:00 13:15	3	2	2	7	7	1	1	9	16	2	17	1	20	1	15	6	22	42	58
13:15 13:30	2	2	1	5	6	0	2	8	13	2	16	1	19	3	10	5	18	37	50
15:00 15:15	2	3	4	9	6	4	6	16	25	6	15	2	23	1	17	4	23	46	71
15:15 15:30	1	3	3	7	10	8	8	26	33	3	28	2	33	9	29	8	46	79	112
15:30 15:45	3	2	1	6	4	9	21	34	40	5	22	5	32	10	29	7	46	78	118
15:45 16:00	3	8	4	15	7	12	18	37	52	11	22	3	37	6	33	12	51	88	140
16:00 16:15	5	14	10	29	8	5	4	17	46	13	41	5	60	3	24	11	39	99	145
16:15 16:30	2	5	6	13	5	5	10	20	33	10	29	0	39	4	32	16	53	92	125
16:30 16:45	0	7	7	14	10	5	5	20	34	5	35	3	44	2	31	15	48	92	126
16:45 17:00	2	4	4	10	10	3	1	14	24	3	29	3	35	3	47	10	62	97	121
17:15 17:30	3	4	2	9	2	2	6	10	19	1	27	3	32	6	39	11	56	88	107
17:30 17:45	1	4	10	15	12	4	2	18	33	8	31	1	40	1	34	18	53	93	126
Total:	61	148	128	340	192	140	188	524	864	173	786	79	1052	80	682	232	1003	2055	2,919

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

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

		ROUNCEY RD			COPE DR			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
07:00	07:15	4	0	4	0	0	0	4
07:15	07:30	0	1	1	0	0	0	1
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
11:45	12:00	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
11:30	11:45	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
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
Total		4	1	5	0	0	0	5



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

ROUNCEY RD

COPE DR

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	1	1	0	0	0	1
07:30 07:45	0	1	1	0	0	0	1
07:45 08:00	1	0	1	0	0	0	1
08:00 08:15	0	0	0	0	0	0	0
08:15 08:30	1	1	2	1	0	1	3
08:30 08:45	2	0	2	0	0	0	2
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	2	2	0	0	0	2
09:15 09:30	0	1	1	0	0	0	1
09:30 09:45	0	0	0	0	0	0	0
09:45 10:00	0	0	0	0	0	0	0
11:45 12:00	0	1	1	0	0	0	1
17:45 18:00	0	0	0	0	0	0	0
17:00 17:15	0	0	0	0	0	0	0
11:30 11:45	0	3	3	0	0	0	3
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	2	0	2	0	0	0	2
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	1	1	2	0	0	0	2
15:45 16:00	4	0	4	0	0	0	4
16:00 16:15	0	0	0	0	0	0	0
16:15 16:30	1	1	2	0	0	0	2
16:30 16:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
17:15 17:30	0	2	2	0	0	0	2
17:30 17:45	0	1	1	0	0	0	1
Total	12	15	27	1	0	1	28



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

ROUNCEY RD

COPE DR

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	1	0	1	3	0	1	4	5	1	0	0	1	0	0	0	0	1	6
07:15	07:30	0	0	0	0	1	0	0	1	1	2	2	1	5	0	1	0	1	6	7
07:30	07:45	1	0	0	1	0	0	1	1	2	0	2	1	3	0	0	0	1	4	6
07:45	08:00	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2	2
08:00	08:15	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1
08:15	08:30	0	1	1	2	1	0	0	1	3	1	2	0	3	0	3	0	3	6	9
08:30	08:45	0	1	2	3	1	0	2	3	6	3	1	0	4	0	1	0	1	5	11
08:45	09:00	1	1	0	2	1	0	2	3	5	1	0	0	1	0	2	0	2	3	8
09:00	09:15	0	0	1	1	1	0	0	1	2	0	1	1	2	0	0	0	0	2	4
09:15	09:30	0	0	3	3	0	1	0	1	4	1	0	1	2	0	1	0	1	3	7
09:30	09:45	1	1	0	2	0	0	0	0	2	0	2	0	2	0	0	1	1	3	5
09:45	10:00	0	2	0	2	0	0	0	0	2	1	0	0	1	0	0	0	0	1	3
11:45	12:00	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	2
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	1	0	1	0	0	0	0	1	0	2	0	2	0	1	0	1	3	4
11:30	11:45	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	1
12:00	12:15	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1
12:15	12:30	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2	2
12:30	12:45	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2	2
12:45	13:00	2	0	0	2	0	0	2	2	4	0	1	0	1	0	0	1	1	2	6
13:00	13:15	2	0	0	2	1	1	0	2	4	0	0	0	0	0	0	0	0	0	4
13:15	13:30	0	0	0	0	1	0	1	2	2	1	0	0	1	0	1	0	1	2	4
15:00	15:15	0	0	0	0	0	1	1	2	2	2	2	0	4	0	0	0	0	4	6
15:15	15:30	0	0	0	0	2	0	0	2	2	3	1	0	4	1	1	0	2	6	8
15:30	15:45	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	1	2
15:45	16:00	1	0	0	1	0	0	0	0	1	0	2	0	2	3	1	0	4	6	7
16:00	16:15	2	2	0	4	1	0	0	1	5	0	1	0	1	0	3	0	4	5	10
16:15	16:30	0	1	1	2	1	0	0	1	3	3	1	0	4	0	1	0	1	5	8
16:30	16:45	0	0	0	0	1	0	0	1	1	0	1	0	2	0	0	1	1	3	4
16:45	17:00	0	0	0	0	1	0	0	1	1	0	0	1	1	0	0	0	0	1	2
17:15	17:30	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1
17:30	17:45	0	0	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	1	2
Total:	None	10	11	8	29	19	4	12	35	64	23	22	6	52	4	19	4	29	81	145

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ ROUNCEY RD

Survey Date: Tuesday, January 17, 2023

WO No: 40751

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

ROUNCEY RD

COPE DR

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	1	0	0	0	1
07:15	07:30	0	0	1	1	2
07:30	07:45	0	0	1	1	2
07:45	08:00	1	0	0	0	1
08:00	08:15	0	0	1	0	1
08:15	08:30	0	0	1	1	2
08:30	08:45	0	0	1	0	1
08:45	09:00	0	0	1	0	1
09:00	09:15	0	1	0	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	1	0	1
11:45	12:00	0	0	0	0	0
17:45	18:00	0	0	0	1	1
17:00	17:15	1	0	2	0	3
11:30	11:45	0	1	0	0	1
12:00	12:15	0	1	0	0	1
12:15	12:30	0	0	0	0	0
12:30	12:45	0	1	0	0	1
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	1	1
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	1	0	1
16:00	16:15	0	0	1	1	2
16:15	16:30	0	0	0	1	1
16:30	16:45	0	0	1	0	1
16:45	17:00	0	0	0	2	2
17:15	17:30	0	0	1	0	1
17:30	17:45	0	0	0	0	0
Total		3	4	14	9	30

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

Start Time: 07:00

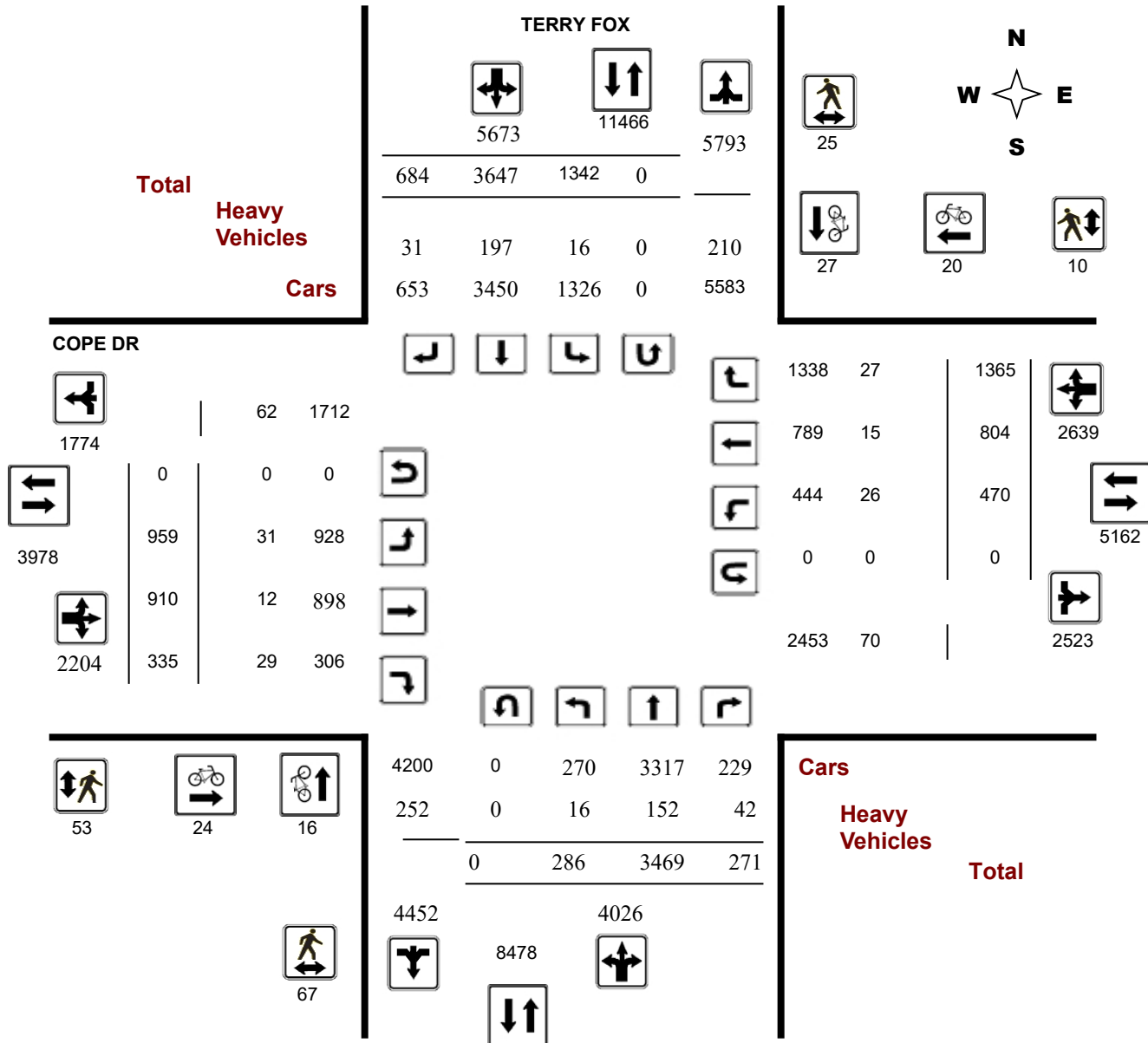
WO No:

40919

Device:

Miovision

Full Study Diagram



Turning Movement Count - Study Results

COPE DR @ TERRY FOX

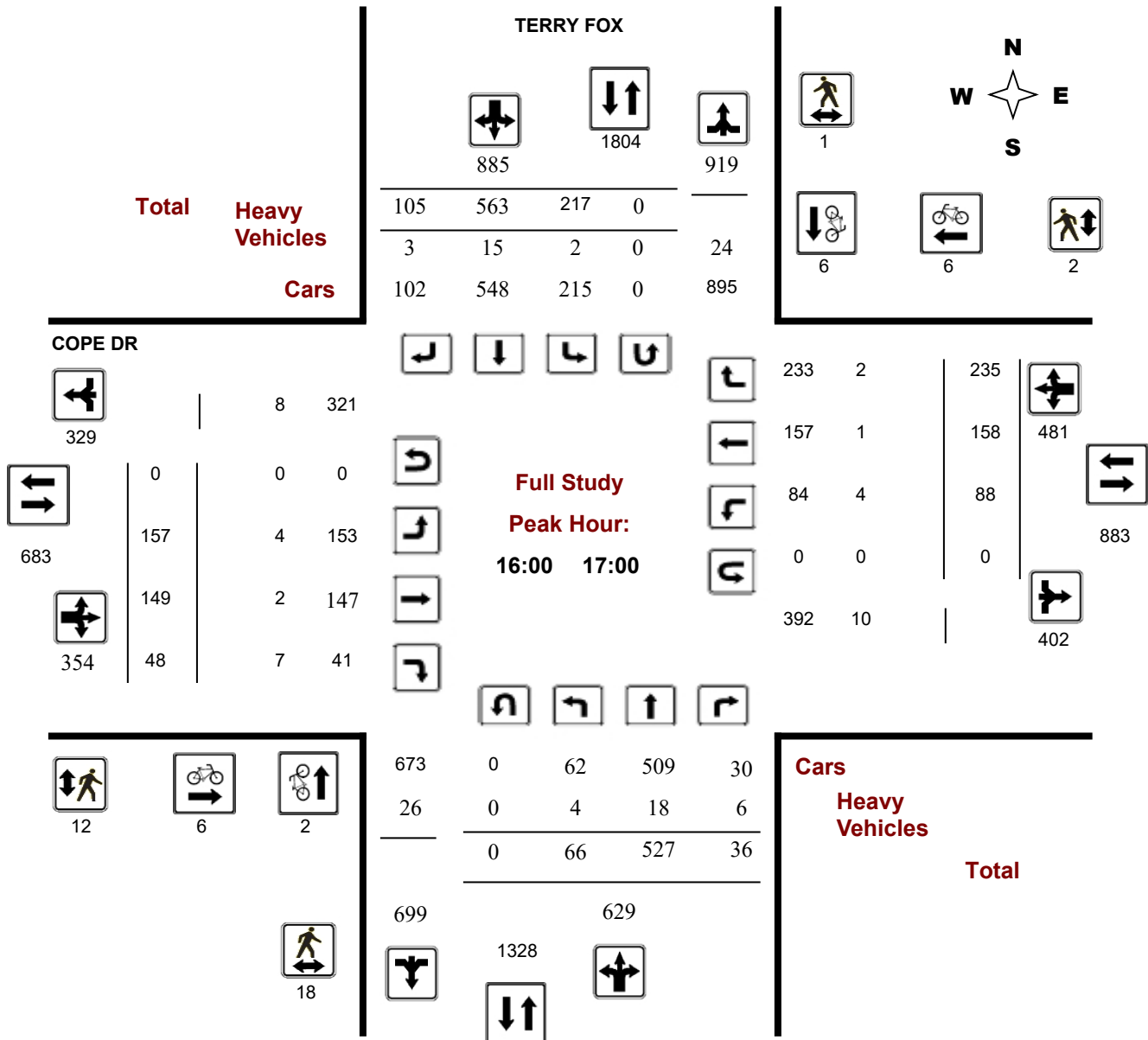
Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, September 07, 2022

Total Observed U-Turns

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

AADT Factor

1.00

TERRY FOX

COPE DR

Period		Northbound				Southbound				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	26	402	34	462	107	388	44	539	1001	73	66	38	177	37	36	108	181	358	1359
08:00	09:00	24	468	43	535	194	415	58	667	1202	86	112	34	232	45	65	179	289	521	1723
09:00	10:00	25	409	31	465	104	340	85	529	994	85	87	40	212	47	91	155	293	505	1499
11:30	12:30	23	357	21	401	141	404	98	643	1044	129	91	38	258	59	84	173	316	574	1618
12:30	13:30	28	336	22	386	165	398	89	652	1038	145	109	38	292	46	90	135	271	563	1601
15:00	16:00	46	432	44	522	194	582	95	871	1393	144	144	53	341	76	118	180	374	715	2108
16:00	17:00	66	527	36	629	217	563	105	885	1514	157	149	48	354	88	158	235	481	835	2349
17:00	18:00	48	538	40	626	220	557	110	887	1513	140	152	46	338	72	162	200	434	772	2285
Sub Total		286	3469	271	4026	1342	3647	684	5673	9699	959	910	335	2204	470	804	1365	2639	4843	14542
U Turns					0				0	0				0				0	0	0
Total		286	3469	271	4026	1342	3647	684	5673	9699	959	910	335	2204	470	804	1365	2639	4843	14542
EQ 12Hr		398	4822	377	5596	1865	5069	951	7885	13482	1333	1265	466	3064	653	1118	1897	3668	6732	20213
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														1.39						
AVG 12Hr		398	4822	377	5596	1865	6641	1245	7885	13482	1333	1265	466	3064	653	1118	1897	3668	6732	20213
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														1.00						
AVG 24Hr		521	6317	494	7331	2443	8700	1631	10329	17661	1746	1657	610	4014	855	1465	2485	4805	8819	26479

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

1.39

AVG 12Hr	398	4822	377	5596	1865	6641	1245	7885	13482	1333	1265	466	3064	653	1118	1897	3668	6732	20213
-----------------	-----	------	-----	------	------	------	------	------	-------	------	------	-----	------	-----	------	------	------	------	-------

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

1.00

AVG 24Hr	521	6317	494	7331	2443	8700	1631	10329	17661	1746	1657	610	4014	855	1465	2485	4805	8819	26479
-----------------	-----	------	-----	------	------	------	------	-------	-------	------	------	-----	------	-----	------	------	------	------	-------

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

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

TERRY FOX

COPE DR

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	7	60	7	74	20	87	7	114	380	12	4	5	21	9	8	19	36	380	245
07:15	07:30	8	110	3	121	18	98	9	125	519	21	12	8	41	7	11	29	47	519	334
07:30	07:45	6	111	11	128	26	101	13	140	554	24	28	14	66	5	5	31	41	554	375
08:00	08:15	3	108	7	118	27	104	13	144	540	19	25	11	55	6	8	30	44	540	361
08:30	08:45	8	115	14	137	59	105	15	179	633	23	32	10	65	15	15	49	79	633	460
08:45	09:00	9	123	11	143	59	113	19	191	673	25	25	7	57	15	21	56	92	673	483
09:00	09:15	4	99	10	113	33	100	14	147	569	21	24	19	64	16	26	54	96	569	420
09:15	09:30	2	117	13	132	29	85	17	131	533	16	23	7	46	11	24	34	69	533	378
09:30	09:45	11	86	4	101	19	76	25	120	474	26	20	9	55	14	25	42	81	474	357
11:30	11:45	3	82	8	93	33	80	28	141	487	30	20	10	60	14	23	37	74	487	368
11:45	12:00	8	95	5	108	34	104	26	164	577	47	25	13	85	11	19	35	65	577	422
17:45	18:00	13	129	5	147	55	116	35	206	718	38	38	15	91	15	40	52	107	718	551
16:30	16:45	17	137	9	163	54	135	31	220	780	32	32	6	70	26	42	61	129	780	582
07:45	08:00	5	121	13	139	43	102	15	160	594	16	22	11	49	16	12	29	57	594	405
09:45	10:00	8	107	4	119	23	79	29	131	494	22	20	5	47	6	16	25	47	494	344
08:15	08:30	4	122	11	137	49	93	11	153	583	19	30	6	55	9	21	44	74	583	419
12:00	12:15	1	88	2	91	35	117	21	173	563	22	22	8	52	16	16	48	80	563	396
12:15	12:30	11	92	6	109	39	103	23	165	577	30	24	7	61	18	26	53	97	577	432
12:30	12:45	8	89	2	99	45	115	27	187	589	41	33	9	83	15	28	34	77	589	446
12:45	13:00	8	91	10	109	39	112	19	170	583	41	31	15	87	5	27	40	72	583	438
13:00	13:15	6	70	9	85	43	82	23	148	464	31	27	4	62	16	26	28	70	464	365
13:15	13:30	6	86	1	93	38	89	20	147	500	32	18	10	60	10	9	33	52	500	352
15:00	15:15	10	103	8	121	37	139	21	197	657	29	27	9	65	22	27	37	86	657	469
15:15	15:30	12	115	9	136	45	144	27	216	748	46	41	12	99	19	23	60	102	748	553
16:00	16:15	7	127	13	147	58	140	28	226	782	50	34	12	96	19	39	61	119	782	588
16:15	16:30	20	149	11	180	52	152	25	229	837	39	38	13	90	21	43	54	118	837	617
16:45	17:00	22	114	3	139	53	136	21	210	733	36	45	17	98	22	34	59	115	733	562
17:00	17:15	12	121	13	146	60	145	26	231	771	42	34	14	90	18	48	54	120	771	587
17:15	17:30	10	150	13	173	52	163	26	241	849	32	50	10	92	21	27	59	107	849	613
17:30	17:45	13	138	9	160	53	133	23	209	728	28	30	7	65	18	47	35	100	728	534
15:45	16:00	13	110	15	138	63	146	23	232	742	35	43	12	90	25	33	44	102	742	562
15:30	15:45	11	104	12	127	49	153	24	226	713	34	33	20	87	10	35	39	84	713	524
Total:		286	3469	271	4026	1342	3647	684	5673	19944	959	910	335	2204	470	804	1365	2639	19944	14,542

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

		TERRY FOX			COPE DR			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
07:00	07:15	0	1	1	0	0	0	1
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	2	1	3	1	0	1	4
08:00	08:15	1	0	1	0	0	0	1
08:30	08:45	0	1	1	0	0	0	1
08:45	09:00	1	0	1	1	0	1	2
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	1	1	0	0	0	1
09:30	09:45	2	2	4	2	0	2	6
11:30	11:45	0	1	1	1	0	1	2
11:45	12:00	1	3	4	0	1	1	5
17:45	18:00	3	1	4	2	1	3	7
16:30	16:45	0	2	2	1	1	2	4
07:45	08:00	0	0	0	0	0	0	0
09:45	10:00	0	0	0	1	1	2	2
08:15	08:30	0	0	0	0	1	1	1
12:00	12:15	0	0	0	0	1	1	1
12:15	12:30	0	2	2	1	1	2	4
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	1	1	1	2	3	4
13:15	13:30	0	0	0	1	0	1	1
15:00	15:15	0	1	1	1	1	2	3
15:15	15:30	0	2	2	0	1	1	3
16:00	16:15	1	1	2	1	1	2	4
16:15	16:30	1	1	2	2	3	5	7
16:45	17:00	0	2	2	2	1	3	5
17:00	17:15	2	1	3	1	2	3	6
17:15	17:30	0	1	1	0	1	1	2
17:30	17:45	0	1	1	0	0	0	1
15:45	16:00	1	0	1	1	0	1	2
15:30	15:45	0	1	1	3	1	4	5
Total		16	27	43	24	20	44	87



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

TERRY FOX

COPE DR

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	1	0	1	1
07:15 07:30	2	1	3	0	1	1	4
07:30 07:45	0	2	2	3	0	3	5
08:00 08:15	0	1	1	3	0	3	4
08:30 08:45	0	1	1	0	1	1	2
08:45 09:00	1	1	2	2	0	2	4
09:00 09:15	2	0	2	1	0	1	3
09:15 09:30	2	0	2	2	0	2	4
09:30 09:45	2	1	3	2	0	2	5
11:30 11:45	1	2	3	1	0	1	4
11:45 12:00	1	1	2	2	0	2	4
17:45 18:00	0	0	0	2	0	2	2
16:30 16:45	7	0	7	0	2	2	9
07:45 08:00	1	1	2	1	0	1	3
09:45 10:00	2	2	4	0	0	0	4
08:15 08:30	1	0	1	1	0	1	2
12:00 12:15	0	2	2	2	1	3	5
12:15 12:30	2	0	2	0	1	1	3
12:30 12:45	7	1	8	2	0	2	10
12:45 13:00	3	0	3	0	0	0	3
13:00 13:15	1	0	1	0	0	0	1
13:15 13:30	5	0	5	0	2	2	7
15:00 15:15	1	1	2	0	0	0	2
15:15 15:30	1	1	2	2	0	2	4
16:00 16:15	5	1	6	5	0	5	11
16:15 16:30	4	0	4	2	0	2	6
16:45 17:00	2	0	2	5	0	5	7
17:00 17:15	0	0	0	2	1	3	3
17:15 17:30	8	0	8	1	1	2	10
17:30 17:45	1	4	5	3	0	3	8
15:45 16:00	4	1	5	4	0	4	9
15:30 15:45	1	1	2	4	0	4	6
Total	67	25	92	53	10	63	155



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

TERRY FOX

COPE DR

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	1	3	2	18	2	10	1	17	35	1	0	1	4	1	0	0	5	9	22
07:15	07:30	0	5	0	13	0	6	3	19	32	2	0	2	8	0	1	3	4	12	22
07:30	07:45	2	9	3	23	0	8	1	19	42	1	1	0	5	1	0	0	5	10	26
08:00	08:15	0	6	0	17	0	10	0	17	34	1	0	0	1	1	0	0	1	2	18
08:30	08:45	0	7	2	15	1	5	1	18	33	1	0	0	3	1	1	3	8	11	22
08:45	09:00	0	4	4	16	0	7	1	14	30	2	0	0	9	1	6	0	11	20	25
09:00	09:15	0	5	1	16	0	8	2	20	36	2	1	1	6	1	0	3	6	12	24
09:15	09:30	0	4	2	15	0	6	0	11	26	0	0	2	2	1	0	1	4	6	16
09:30	09:45	0	3	1	13	0	7	2	14	27	2	0	1	5	1	0	0	2	7	17
11:30	11:45	0	5	1	10	0	4	2	13	23	0	0	0	2	0	0	2	3	5	14
11:45	12:00	1	5	0	16	1	9	0	15	31	0	0	1	2	0	0	0	1	3	17
17:45	18:00	0	2	0	7	0	4	0	6	13	0	0	0	0	1	0	0	1	1	7
16:30	16:45	3	8	3	20	1	4	1	18	38	3	0	1	8	1	0	1	6	14	26
07:45	08:00	0	6	4	18	2	8	2	20	38	1	0	0	3	0	0	1	7	10	24
09:45	10:00	0	7	1	17	0	9	2	20	37	1	1	0	4	0	0	1	3	7	22
08:15	08:30	0	9	1	17	0	7	1	20	37	1	1	0	3	0	0	2	4	7	22
12:00	12:15	0	4	0	9	1	3	2	11	20	1	1	1	5	1	0	0	3	8	14
12:15	12:30	0	5	2	18	1	9	1	20	38	2	0	2	5	0	0	2	5	10	24
12:30	12:45	0	6	0	14	0	8	0	15	29	0	1	0	3	0	2	1	4	7	18
12:45	13:00	2	3	0	14	0	7	0	11	25	0	1	2	5	0	0	1	2	7	16
13:00	13:15	1	4	2	16	1	7	0	14	30	2	1	0	4	2	0	0	6	10	20
13:15	13:30	1	3	0	11	0	4	2	10	21	1	0	2	6	1	0	0	1	7	14
15:00	15:15	3	8	1	20	1	8	0	20	40	3	0	0	7	0	1	0	3	10	25
15:15	15:30	0	7	1	19	0	8	3	19	38	1	0	3	8	0	1	0	2	10	24
16:00	16:15	1	4	1	11	1	2	0	8	19	0	0	2	4	1	1	1	5	9	14
16:15	16:30	0	3	2	13	0	5	2	10	23	0	1	2	5	1	0	0	4	9	16
16:45	17:00	0	3	0	10	0	4	0	8	18	1	1	2	4	1	0	0	2	6	12
17:00	17:15	0	2	2	12	0	6	0	8	20	0	1	1	2	1	0	0	4	6	13
17:15	17:30	0	1	1	3	0	0	0	2	5	0	0	1	1	0	0	1	2	3	4
17:30	17:45	0	2	2	5	0	0	0	3	8	1	0	0	1	1	0	0	3	4	6
15:45	16:00	0	3	1	16	0	6	0	13	29	1	1	1	3	5	0	3	10	13	21
15:30	15:45	1	6	2	20	4	8	2	21	41	0	0	1	6	2	2	1	11	17	29
Total:	None	16	152	42	462	16	197	31	454	916	31	12	29	134	26	15	27	138	272	594

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total TERRY FOX COPE DR

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
08:00	08:15	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
11:30	11:45	0	0	0	0	0
11:45	12:00	0	0	0	0	0
17:45	18:00	0	0	0	0	0
16:30	16:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
09:45	10:00	0	0	0	0	0
08:15	08:30	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
16:00	16:15	0	0	0	0	0
16:15	16:30	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
15:45	16:00	0	0	0	0	0
15:30	15:45	0	0	0	0	0
Total		0	0	0	0	0

MD Period Diagram

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

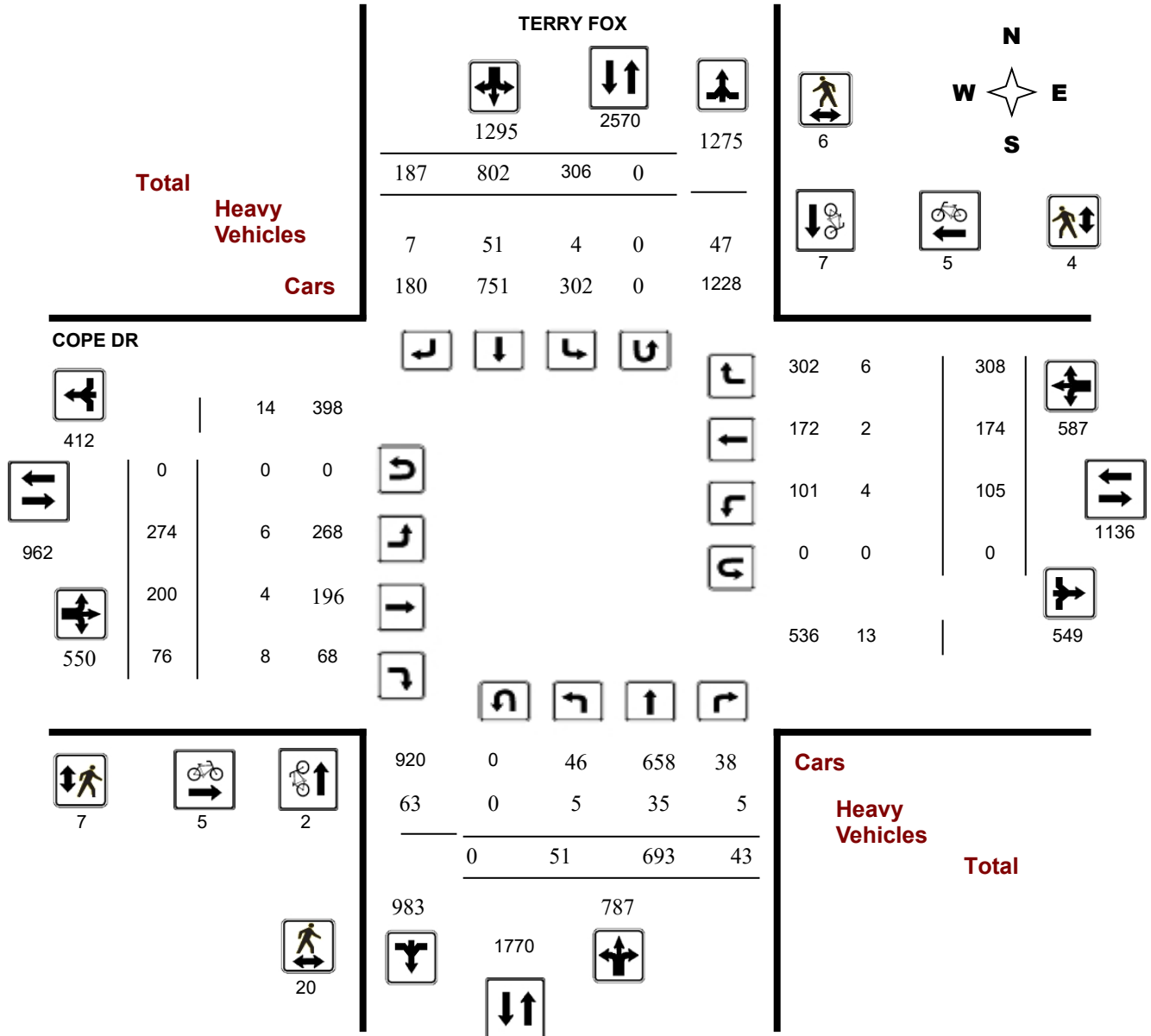
Start Time: 07:00

WO No:

40919

Device:

Miovision



Turning Movement Count - Study Results

COPE DR @ TERRY FOX

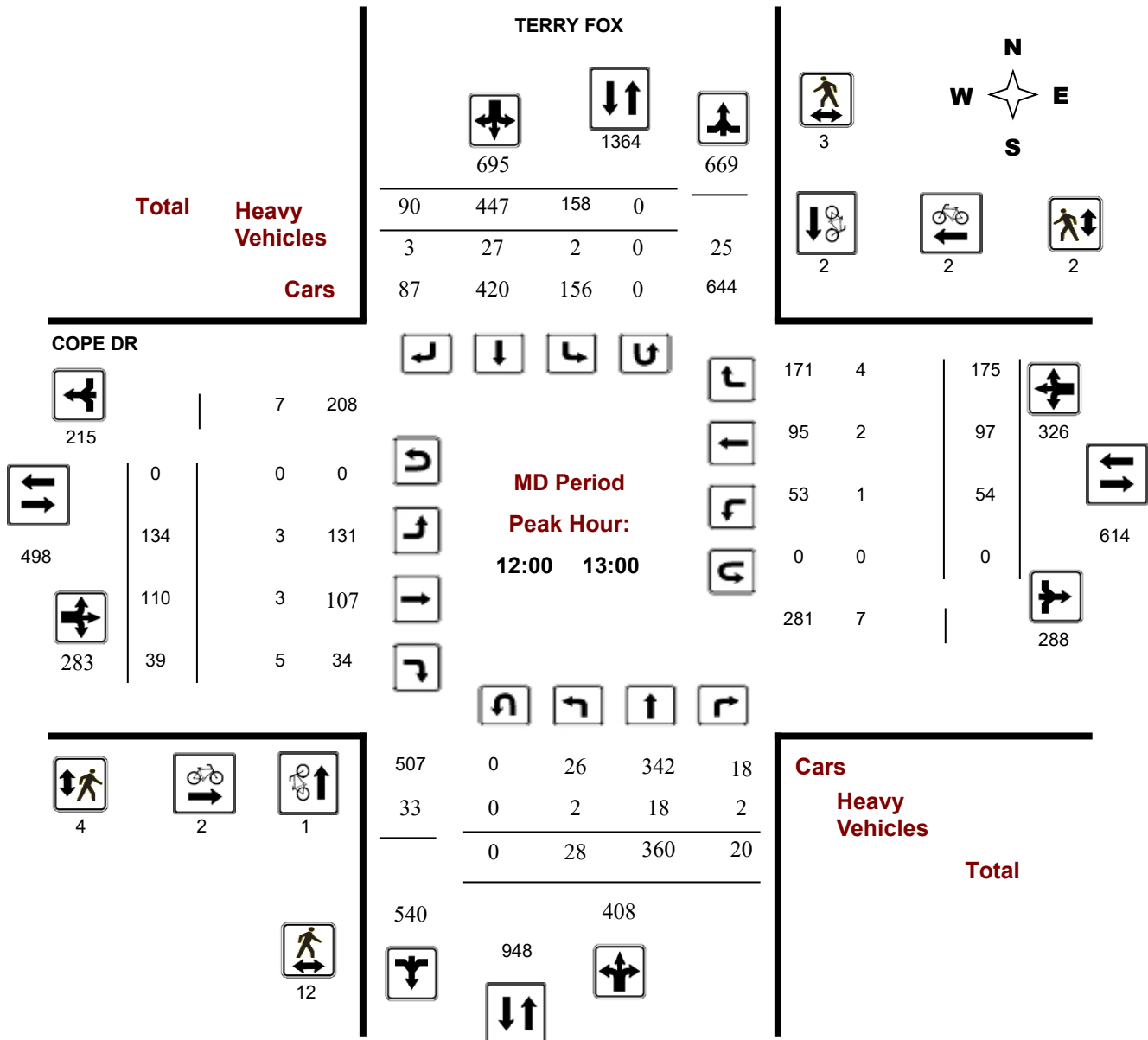
Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

MD Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

MD Period Summary (8 HR Standard)

Survey Date: Wednesday, September 07, 2022

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

1.00

TERRY FOX

COPE DR

Period		Northbound				Southbound				Eastbound				Westbound				STR TOT	Grand Total		
		LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT			WB TOT	
11:30	12:30	23	357	21	401	141	404	98	643	1044	129	91	38	258	59	84	173	316	574	1618	
12:30	13:30	28	336	22	386	165	398	89	652	1038	145	109	38	292	46	90	135	271	563	1601	
Sub Total		51	693	43	787	306	802	187	1295	2082	274	200	76	550	105	174	308	587	1137	3219	
U Turns		0				0				0	0				0				0	0	0
Total		51	693	43	787	306	802	187	1295	2082	274	200	76	550	105	174	308	587	1137	3219	
EQ 12Hr		71	963	60	1094	425	1115	260	1800	2894	381	278	106	764	146	242	428	816	1580	4474	
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														1.39							
AVG 12Hr		71	963	60	1094	425	1460	341	1800	2894	381	278	106	764	146	242	428	816	1580	4474	
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														1.00							
AVG 24Hr		93	1262	79	1433	557	1913	447	2358	3791	499	364	139	1001	191	317	561	1069	2070	5861	

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

1.39

AVG 12Hr 71 963 60 1094 425 1460 341 1800 2894 381 278 106 764 146 242 428 816 1580 4474

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

1.00

AVG 24Hr 93 1262 79 1433 557 1913 447 2358 3791 499 364 139 1001 191 317 561 1069 2070 5861

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

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

MD Period 15 Minute Increments

TERRY FOX

COPE DR

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	
11:30	11:45	3	82	8	93	33	80	28	141	487	30	20	10	60	14	23	37	74	487	368
11:45	12:00	8	95	5	108	34	104	26	164	577	47	25	13	85	11	19	35	65	577	422
12:00	12:15	1	88	2	91	35	117	21	173	563	22	22	8	52	16	16	48	80	563	396
13:15	13:30	6	86	1	93	38	89	20	147	500	32	18	10	60	10	9	33	52	500	352
12:15	12:30	11	92	6	109	39	103	23	165	577	30	24	7	61	18	26	53	97	577	432
12:30	12:45	8	89	2	99	45	115	27	187	589	41	33	9	83	15	28	34	77	589	446
13:00	13:15	6	70	9	85	43	82	23	148	464	31	27	4	62	16	26	28	70	464	365
12:45	13:00	8	91	10	109	39	112	19	170	583	41	31	15	87	5	27	40	72	583	438
Total:		51	693	43	787	306	802	187	1295	4340	274	200	76	550	105	174	308	587	4340	3,219

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

MD Period Cyclist Volume

		TERRY FOX			COPE DR			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
11:30	11:45	0	1	1	1	0	1	2
11:45	12:00	1	3	4	0	1	1	5
12:00	12:15	0	0	0	0	1	1	1
13:15	13:30	0	0	0	1	0	1	1
12:15	12:30	0	2	2	1	1	2	4
12:30	12:45	1	0	1	1	0	1	2
13:00	13:15	0	1	1	1	2	3	4
12:45	13:00	0	0	0	0	0	0	0
Total		2	7	9	5	5	10	19

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

MD Period Pedestrian Volume

TERRY FOX

COPE DR

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
11:30 11:45	1	2	3	1	0	1	4
11:45 12:00	1	1	2	2	0	2	4
12:00 12:15	0	2	2	2	1	3	5
13:15 13:30	5	0	5	0	2	2	7
12:15 12:30	2	0	2	0	1	1	3
12:30 12:45	7	1	8	2	0	2	10
13:00 13:15	1	0	1	0	0	0	1
12:45 13:00	3	0	3	0	0	0	3
Total	20	6	26	7	4	11	37



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

MD Period Heavy Vehicles

TERRY FOX

COPE DR

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			
11:30	11:45	0	5	1	10	0	4	2	13	23	0	0	0	2	0	0	2	3	5	14
11:45	12:00	1	5	0	16	1	9	0	15	31	0	0	1	2	0	0	0	1	3	17
12:00	12:15	0	4	0	9	1	3	2	11	20	1	1	1	5	1	0	0	3	8	14
13:15	13:30	1	3	0	11	0	4	2	10	21	1	0	2	6	1	0	0	1	7	14
12:15	12:30	0	5	2	18	1	9	1	20	38	2	0	2	5	0	0	2	5	10	24
12:30	12:45	0	6	0	14	0	8	0	15	29	0	1	0	3	0	2	1	4	7	18
13:00	13:15	1	4	2	16	1	7	0	14	30	2	1	0	4	2	0	0	6	10	20
12:45	13:00	2	3	0	14	0	7	0	11	25	0	1	2	5	0	0	1	2	7	16
Total:	None	5	35	5	108	4	51	7	109	217	6	4	8	32	4	2	6	25	57	137

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

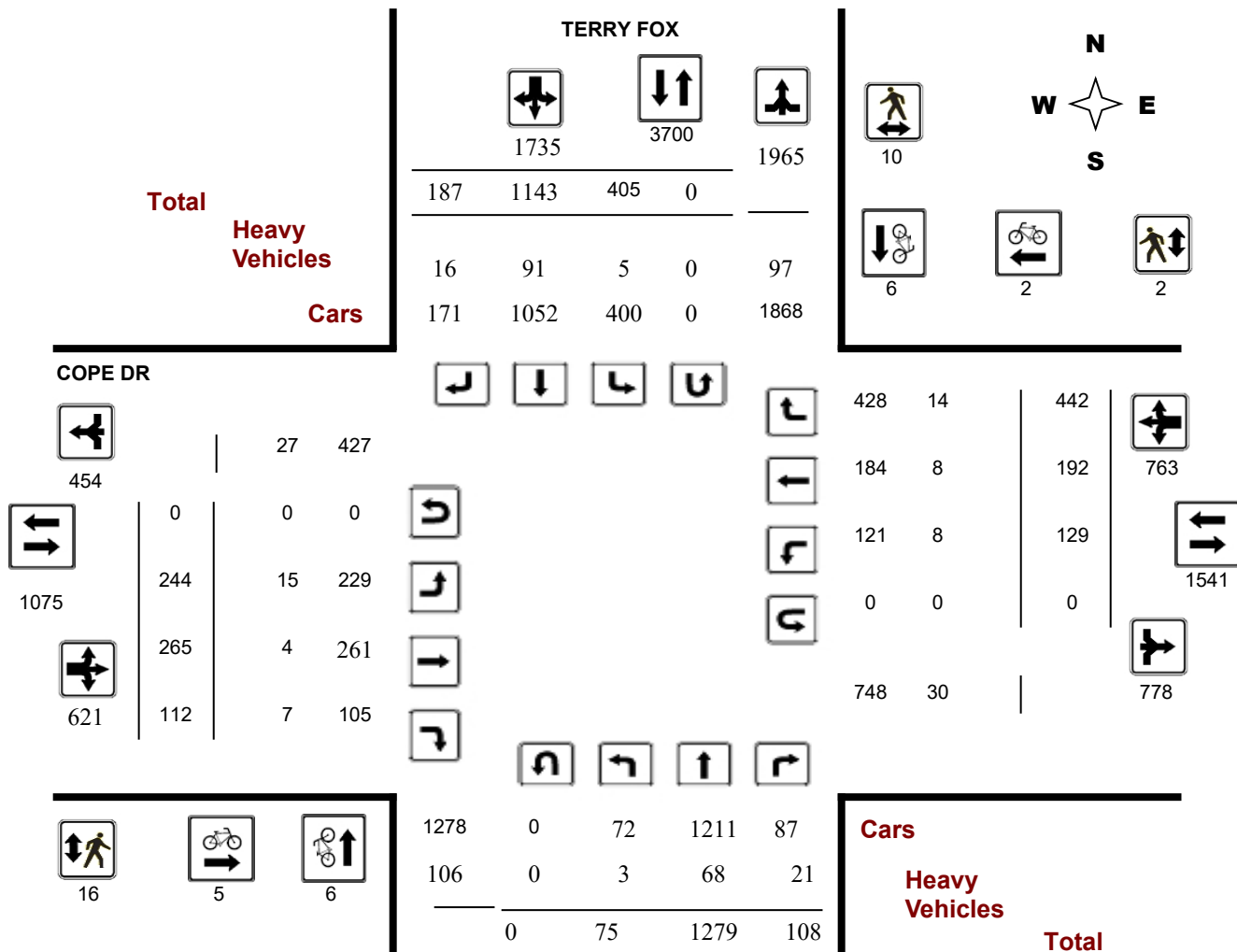
MD Period 15 Minute U-Turn Total

TERRY FOX

COPE DR

Time Period	Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
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
13:15 13:30	0	0	0	0	0
12:15 12:30	0	0	0	0	0
12:30 12:45	0	0	0	0	0
13:00 13:15	0	0	0	0	0
12:45 13:00	0	0	0	0	0
Total	0	0	0	0	0

AM Period Diagram



Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

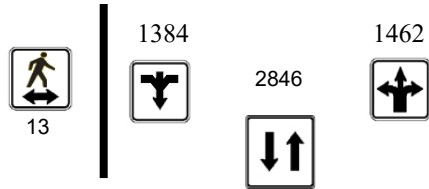
Start Time: 07:00

WO No:

40919

Device:

Miovision



Turning Movement Count - Study Results

COPE DR @ TERRY FOX

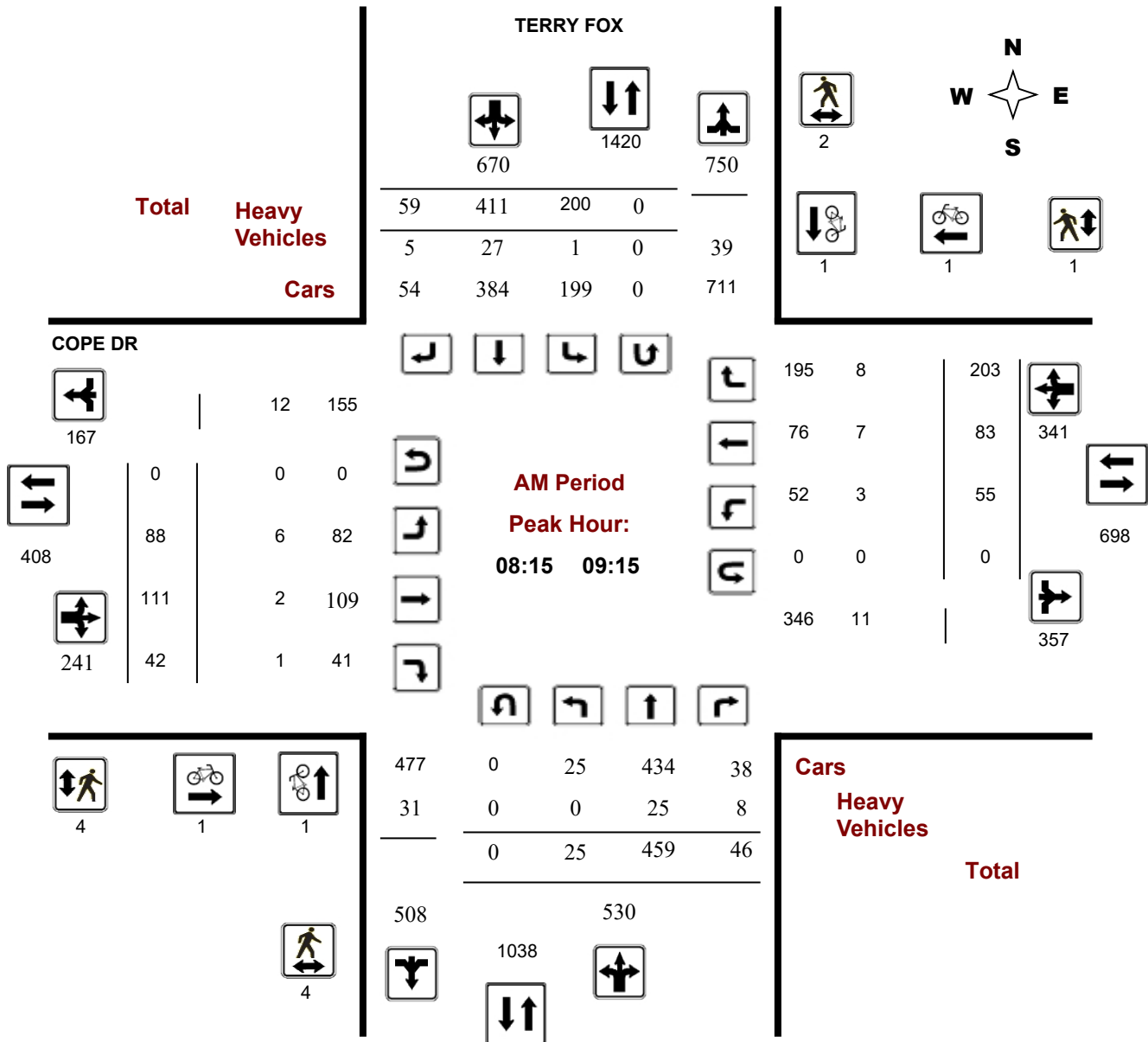
Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

AM Period Summary (8 HR Standard)

Survey Date: Wednesday, September 07, 2022

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

1.00

TERRY FOX

COPE DR

Period	Northbound					Southbound					Eastbound					Westbound					Grand Total
	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	26	402	34	462		107	388	44	539	1001	73	66	38	177		37	36	108	181	358	1359
08:00 09:00	24	468	43	535		194	415	58	667	1202	86	112	34	232		45	65	179	289	521	1723
09:00 10:00	25	409	31	465		104	340	85	529	994	85	87	40	212		47	91	155	293	505	1499
Sub Total	75	1279	108	1462		405	1143	187	1735	3197	244	265	112	621		129	192	442	763	1384	4581
U Turns				0					0	0				0					0	0	0
Total	75	1279	108	1462		405	1143	187	1735	3197	244	265	112	621		129	192	442	763	1384	4581
EQ 12Hr	104	1778	150	2032		563	1589	260	2412	4444	339	368	156	863		179	267	614	1061	1924	6368
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																				1.39	
AVG 12Hr	104	1778	150	2032		563	2081	341	2412	4444	339	368	156	863		179	267	614	1061	1924	6368
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																				1.00	
AVG 24Hr	136	2329	196	2662		738	2726	447	3160	5822	444	482	204	1131		234	350	804	1390	2520	8342
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

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

AM Period 15 Minute Increments

TERRY FOX

COPE DR

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	7	60	7	74	20	87	7	114	380	12	4	5	21	9	8	19	36	380	245
07:15	07:30	8	110	3	121	18	98	9	125	519	21	12	8	41	7	11	29	47	519	334
07:30	07:45	6	111	11	128	26	101	13	140	554	24	28	14	66	5	5	31	41	554	375
09:45	10:00	8	107	4	119	23	79	29	131	494	22	20	5	47	6	16	25	47	494	344
07:45	08:00	5	121	13	139	43	102	15	160	594	16	22	11	49	16	12	29	57	594	405
08:00	08:15	3	108	7	118	27	104	13	144	540	19	25	11	55	6	8	30	44	540	361
08:15	08:30	4	122	11	137	49	93	11	153	583	19	30	6	55	9	21	44	74	583	419
08:30	08:45	8	115	14	137	59	105	15	179	633	23	32	10	65	15	15	49	79	633	460
08:45	09:00	9	123	11	143	59	113	19	191	673	25	25	7	57	15	21	56	92	673	483
09:00	09:15	4	99	10	113	33	100	14	147	569	21	24	19	64	16	26	54	96	569	420
09:15	09:30	2	117	13	132	29	85	17	131	533	16	23	7	46	11	24	34	69	533	378
09:30	09:45	11	86	4	101	19	76	25	120	474	26	20	9	55	14	25	42	81	474	357
Total:		75	1279	108	1462	405	1143	187	1735	6546	244	265	112	621	129	192	442	763	6546	4,581

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

AM Period Cyclist Volume

		TERRY FOX			COPE DR			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
07:00	07:15	0	1	1	0	0	0	1
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	2	1	3	1	0	1	4
09:45	10:00	0	0	0	1	1	2	2
07:45	08:00	0	0	0	0	0	0	0
08:00	08:15	1	0	1	0	0	0	1
08:15	08:30	0	0	0	0	1	1	1
08:30	08:45	0	1	1	0	0	0	1
08:45	09:00	1	0	1	1	0	1	2
09:00	09:15	0	0	0	0	0	0	0
09:15	09:30	0	1	1	0	0	0	1
09:30	09:45	2	2	4	2	0	2	6
Total		6	6	12	5	2	7	19

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

AM Period Pedestrian Volume

TERRY FOX

COPE DR

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	1	0	1	1
07:15 07:30	2	1	3	0	1	1	4
07:30 07:45	0	2	2	3	0	3	5
09:45 10:00	2	2	4	0	0	0	4
07:45 08:00	1	1	2	1	0	1	3
08:00 08:15	0	1	1	3	0	3	4
08:15 08:30	1	0	1	1	0	1	2
08:30 08:45	0	1	1	0	1	1	2
08:45 09:00	1	1	2	2	0	2	4
09:00 09:15	2	0	2	1	0	1	3
09:15 09:30	2	0	2	2	0	2	4
09:30 09:45	2	1	3	2	0	2	5
Total	13	10	23	16	2	18	41



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

AM Period Heavy Vehicles

TERRY FOX

COPE DR

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	1	3	2	18	2	10	1	17	35	1	0	1	4	1	0	0	5	9	22
07:15	07:30	0	5	0	13	0	6	3	19	32	2	0	2	8	0	1	3	4	12	22
07:30	07:45	2	9	3	23	0	8	1	19	42	1	1	0	5	1	0	0	5	10	26
09:45	10:00	0	7	1	17	0	9	2	20	37	1	1	0	4	0	0	1	3	7	22
07:45	08:00	0	6	4	18	2	8	2	20	38	1	0	0	3	0	0	1	7	10	24
08:00	08:15	0	6	0	17	0	10	0	17	34	1	0	0	1	1	0	0	1	2	18
08:15	08:30	0	9	1	17	0	7	1	20	37	1	1	0	3	0	0	2	4	7	22
08:30	08:45	0	7	2	15	1	5	1	18	33	1	0	0	3	1	1	3	8	11	22
08:45	09:00	0	4	4	16	0	7	1	14	30	2	0	0	9	1	6	0	11	20	25
09:00	09:15	0	5	1	16	0	8	2	20	36	2	1	1	6	1	0	3	6	12	24
09:15	09:30	0	4	2	15	0	6	0	11	26	0	0	2	2	1	0	1	4	6	16
09:30	09:45	0	3	1	13	0	7	2	14	27	2	0	1	5	1	0	0	2	7	17
Total:	None	3	68	21	198	5	91	16	209	407	15	4	7	53	8	8	14	60	113	260

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

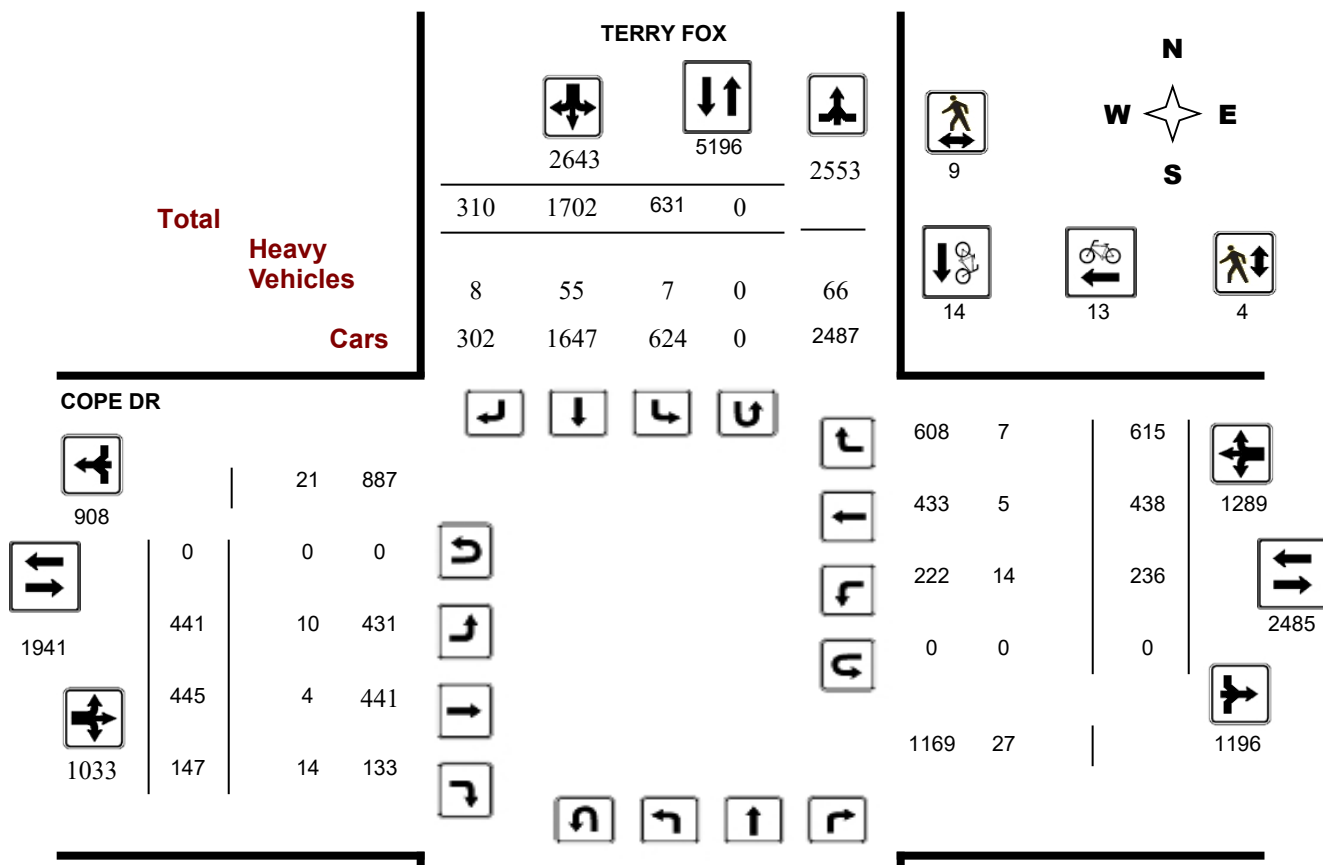
AM Period 15 Minute U-Turn Total

TERRY FOX

COPE DR

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
09:45 10:00	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
Total	0	0	0	0	0

PM Period Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision



2002	0	152	1448	104
83	0	8	49	16
	0	160	1497	120

2085 1777



Cars

**Heavy
Vehicles**

Total

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

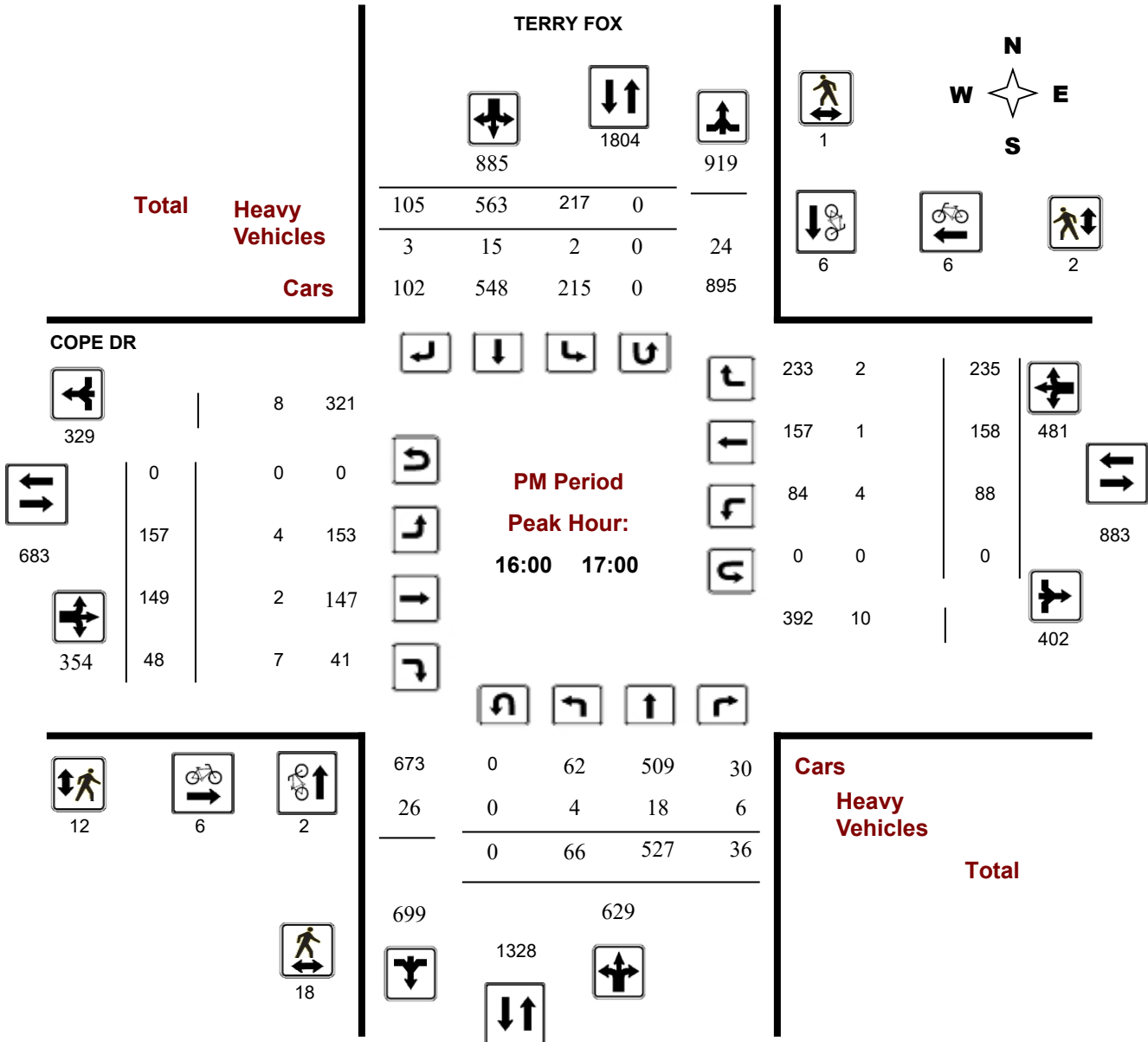
Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period Summary (8 HR Standard)

Survey Date: Wednesday, September 07, 2022

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0

Eastbound: 0 Westbound: 0

1.00

TERRY FOX

COPE DR

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		
15:00 16:00	46	432	44	522	194	582	95	871	1393	144	144	53	341	76	118	180	374	715	2108
16:00 17:00	66	527	36	629	217	563	105	885	1514	157	149	48	354	88	158	235	481	835	2349
17:00 18:00	48	538	40	626	220	557	110	887	1513	140	152	46	338	72	162	200	434	772	2285
Sub Total	160	1497	120	1777	631	1702	310	2643	4420	441	445	147	1033	236	438	615	1289	2322	6742
U Turns				0				0	0				0				0	0	0
Total	160	1497	120	1777	631	1702	310	2643	4420	441	445	147	1033	236	438	615	1289	2322	6742
EQ 12Hr	222	2081	167	2470	877	2366	431	3674	6144	613	619	204	1436	328	609	855	1792	3228	9371
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																			1.39
AVG 12Hr	222	2081	167	2470	877	3099	564	3674	6144	613	619	204	1436	328	609	855	1792	3228	9371
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																			1.00
AVG 24Hr	291	2726	219	3236	1149	4060	739	4813	8049	803	811	267	1881	430	798	1120	2348	4229	12276
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

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period 15 Minute Increments

TERRY FOX

COPE DR

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	
15:00	15:15	10	103	8	121	37	139	21	197	657	29	27	9	65	22	27	37	86	657	469
15:15	15:30	12	115	9	136	45	144	27	216	748	46	41	12	99	19	23	60	102	748	553
15:30	15:45	11	104	12	127	49	153	24	226	713	34	33	20	87	10	35	39	84	713	524
17:45	18:00	13	129	5	147	55	116	35	206	718	38	38	15	91	15	40	52	107	718	551
15:45	16:00	13	110	15	138	63	146	23	232	742	35	43	12	90	25	33	44	102	742	562
16:00	16:15	7	127	13	147	58	140	28	226	782	50	34	12	96	19	39	61	119	782	588
16:15	16:30	20	149	11	180	52	152	25	229	837	39	38	13	90	21	43	54	118	837	617
16:30	16:45	17	137	9	163	54	135	31	220	780	32	32	6	70	26	42	61	129	780	582
16:45	17:00	22	114	3	139	53	136	21	210	733	36	45	17	98	22	34	59	115	733	562
17:00	17:15	12	121	13	146	60	145	26	231	771	42	34	14	90	18	48	54	120	771	587
17:15	17:30	10	150	13	173	52	163	26	241	849	32	50	10	92	21	27	59	107	849	613
17:30	17:45	13	138	9	160	53	133	23	209	728	28	30	7	65	18	47	35	100	728	534
Total:		160	1497	120	1777	631	1702	310	2643	9058	441	445	147	1033	236	438	615	1289	9058	6,742

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period Cyclist Volume

		TERRY FOX			COPE DR			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
15:00	15:15	0	1	1	1	1	2	3
15:15	15:30	0	2	2	0	1	1	3
15:30	15:45	0	1	1	3	1	4	5
17:45	18:00	3	1	4	2	1	3	7
15:45	16:00	1	0	1	1	0	1	2
16:00	16:15	1	1	2	1	1	2	4
16:15	16:30	1	1	2	2	3	5	7
16:30	16:45	0	2	2	1	1	2	4
16:45	17:00	0	2	2	2	1	3	5
17:00	17:15	2	1	3	1	2	3	6
17:15	17:30	0	1	1	0	1	1	2
17:30	17:45	0	1	1	0	0	0	1
Total		8	14	22	14	13	27	49

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period Pedestrian Volume

TERRY FOX

COPE DR

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
15:00 15:15	1	1	2	0	0	0	2
15:15 15:30	1	1	2	2	0	2	4
15:30 15:45	1	1	2	4	0	4	6
17:45 18:00	0	0	0	2	0	2	2
15:45 16:00	4	1	5	4	0	4	9
16:00 16:15	5	1	6	5	0	5	11
16:15 16:30	4	0	4	2	0	2	6
16:30 16:45	7	0	7	0	2	2	9
16:45 17:00	2	0	2	5	0	5	7
17:00 17:15	0	0	0	2	1	3	3
17:15 17:30	8	0	8	1	1	2	10
17:30 17:45	1	4	5	3	0	3	8
Total	34	9	43	30	4	34	77



Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period Heavy Vehicles

TERRY FOX

COPE DR

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
15:00	15:15	3	8	1	20	1	8	0	20	40	3	0	0	7	0	1	0	3	10	25
15:15	15:30	0	7	1	19	0	8	3	19	38	1	0	3	8	0	1	0	2	10	24
15:30	15:45	1	6	2	20	4	8	2	21	41	0	0	1	6	2	2	1	11	17	29
17:45	18:00	0	2	0	7	0	4	0	6	13	0	0	0	0	1	0	0	1	1	7
15:45	16:00	0	3	1	16	0	6	0	13	29	1	1	1	3	5	0	3	10	13	21
16:00	16:15	1	4	1	11	1	2	0	8	19	0	0	2	4	1	1	1	5	9	14
16:15	16:30	0	3	2	13	0	5	2	10	23	0	1	2	5	1	0	0	4	9	16
16:30	16:45	3	8	3	20	1	4	1	18	38	3	0	1	8	1	0	1	6	14	26
16:45	17:00	0	3	0	10	0	4	0	8	18	1	1	2	4	1	0	0	2	6	12
17:00	17:15	0	2	2	12	0	6	0	8	20	0	1	1	2	1	0	0	4	6	13
17:15	17:30	0	1	1	3	0	0	0	2	5	0	0	1	1	0	0	1	2	3	4
17:30	17:45	0	2	2	5	0	0	0	3	8	1	0	0	1	1	0	0	3	4	6
Total:	None	8	49	16	156	7	55	8	136	292	10	4	14	49	14	5	7	53	102	197

Transportation Services - Traffic Services

Turning Movement Count - Study Results

COPE DR @ TERRY FOX

Survey Date: Wednesday, September 07, 2022

WO No: 40919

Start Time: 07:00

Device: Miovision

PM Period 15 Minute U-Turn Total

TERRY FOX

COPE DR

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
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
17:45	18:00	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
Total		0	0	0	0	0

Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

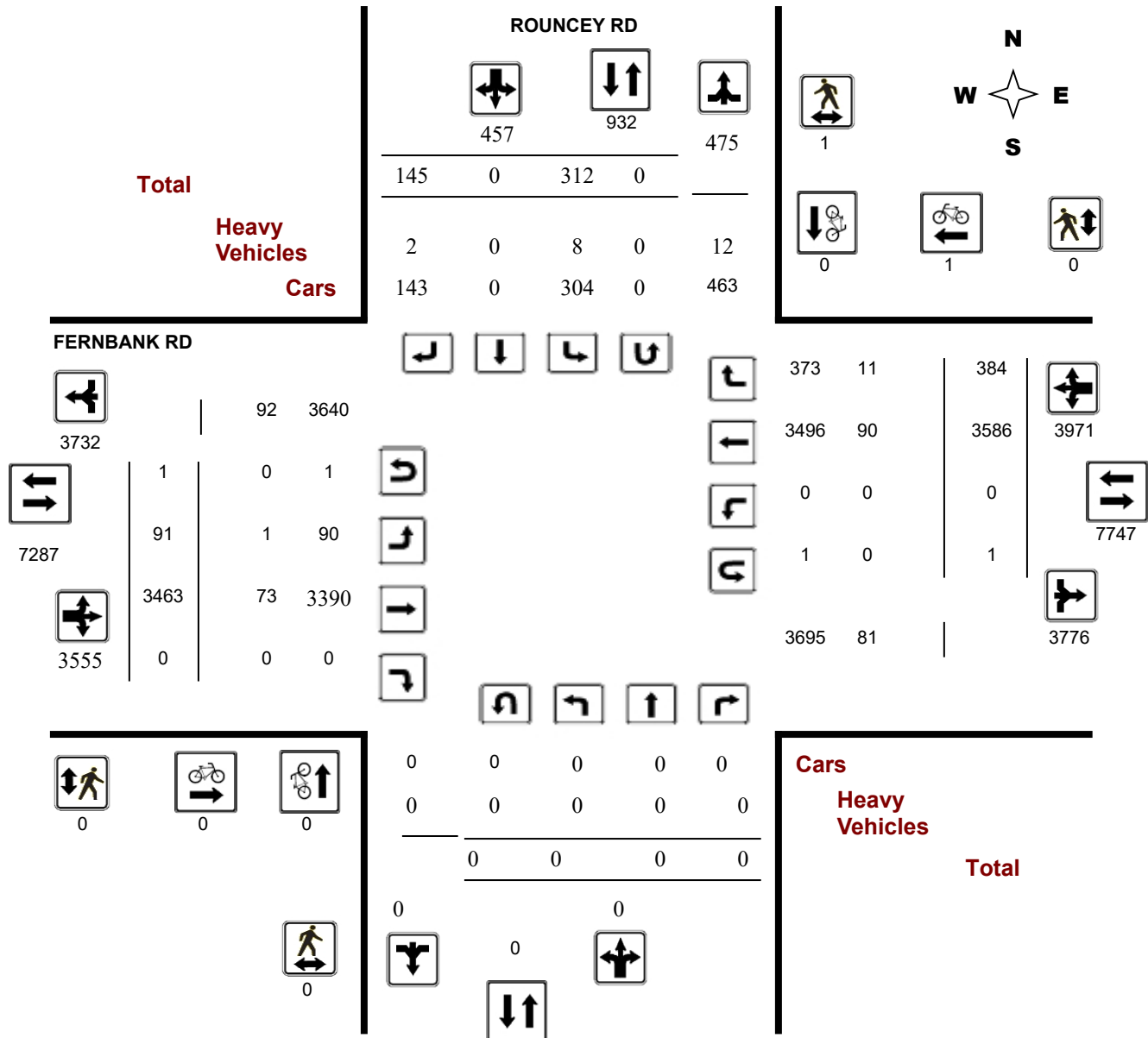
Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

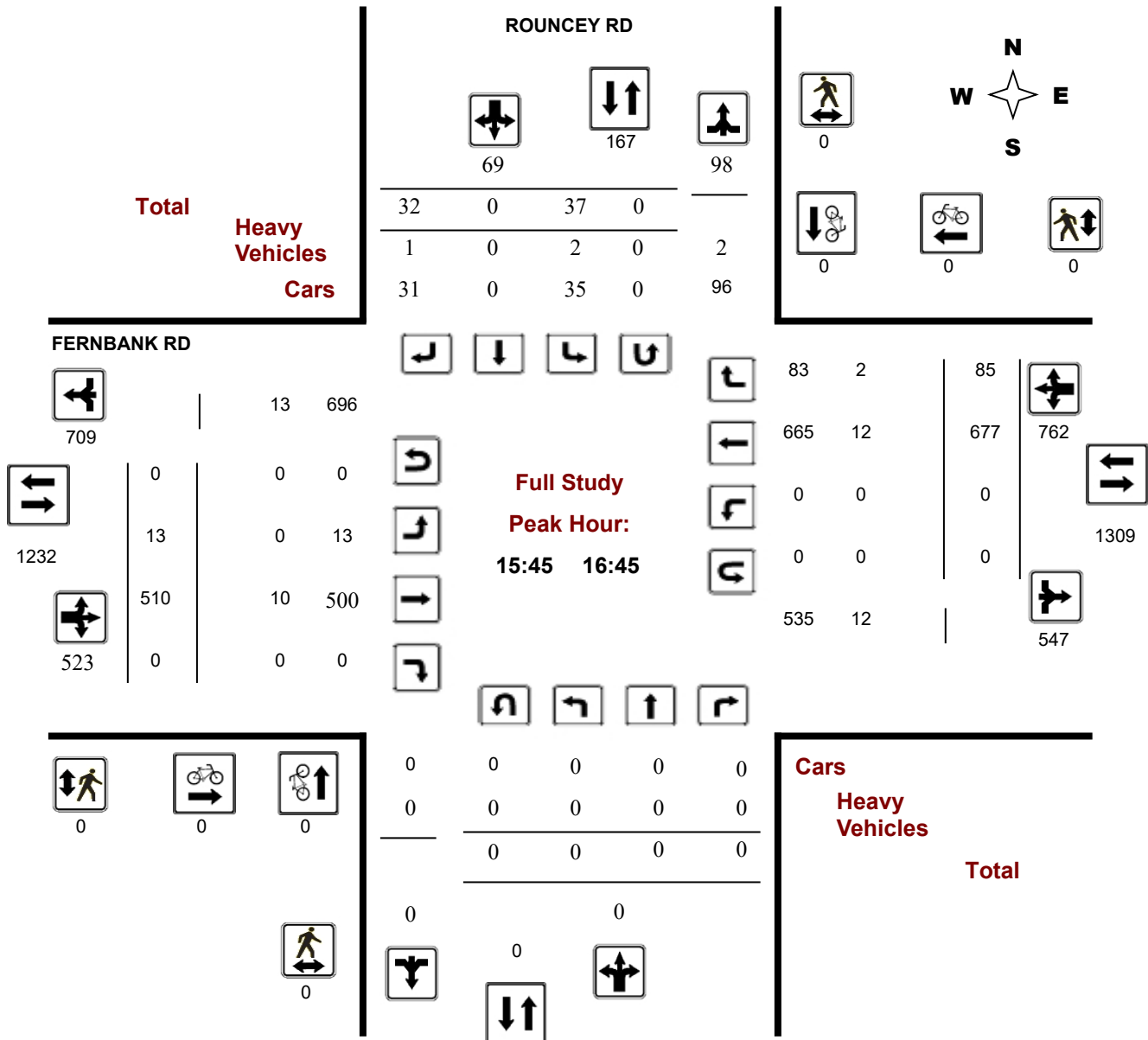
Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

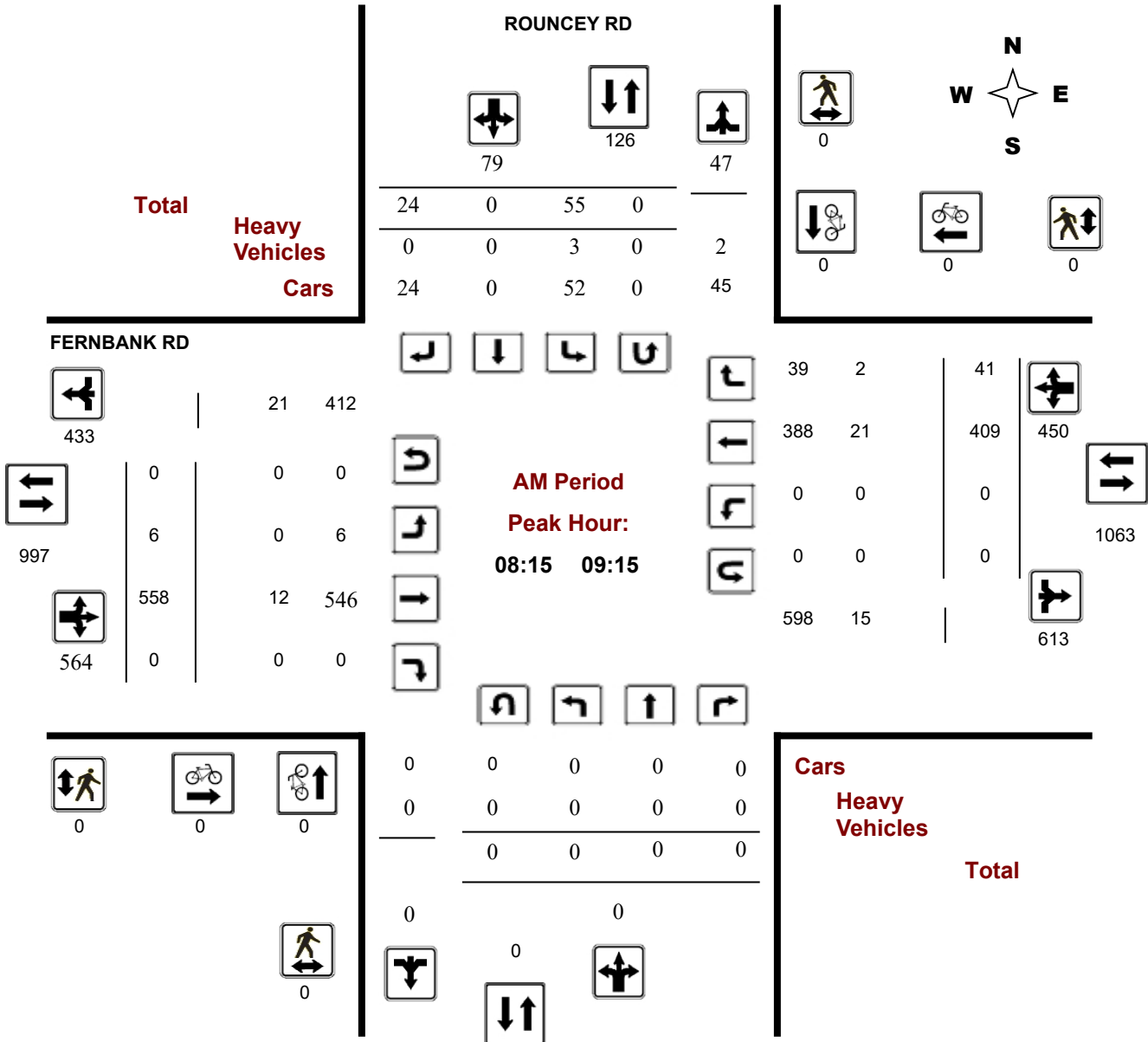
Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

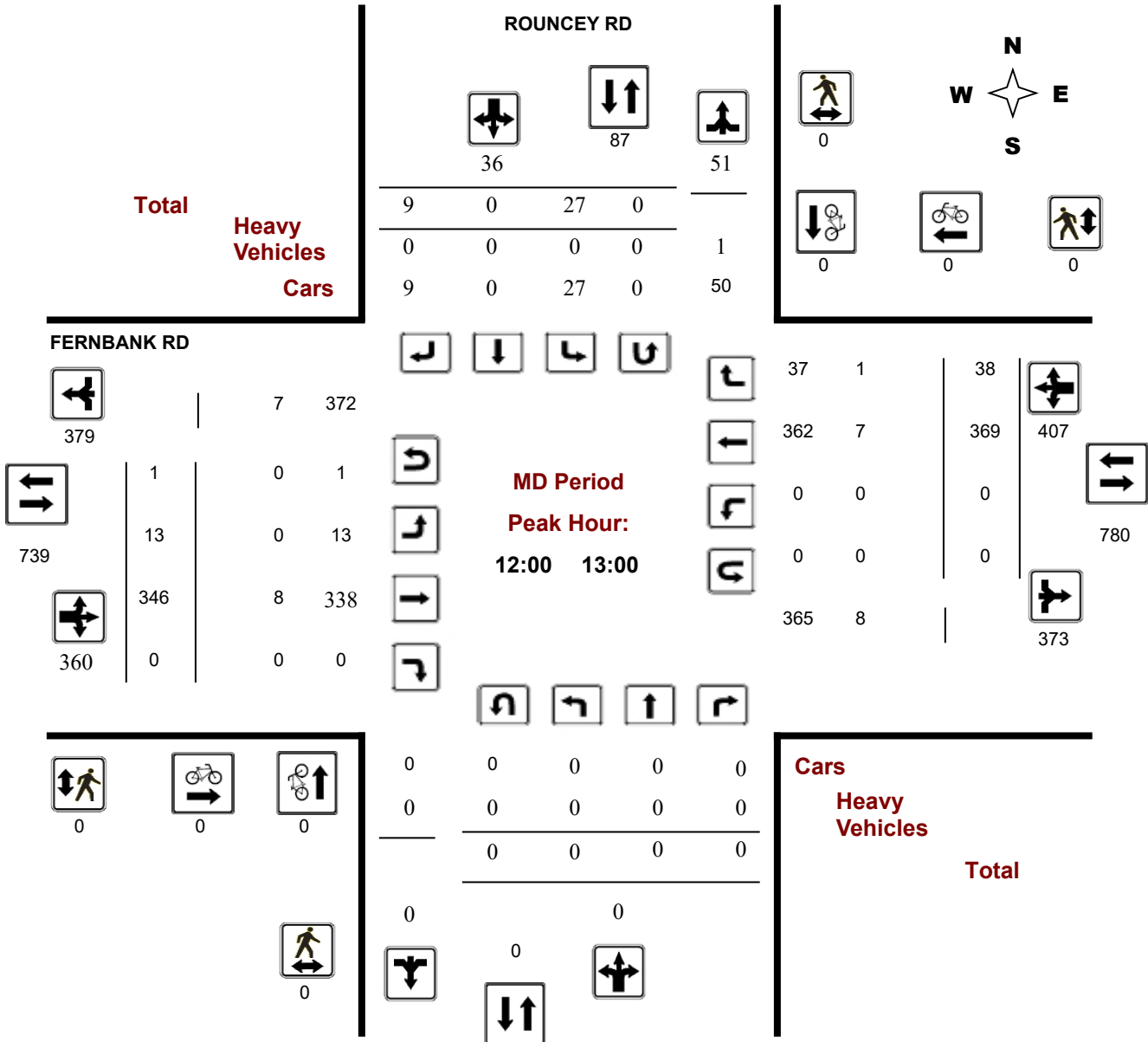
Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

MD Period Peak Hour Diagram



Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

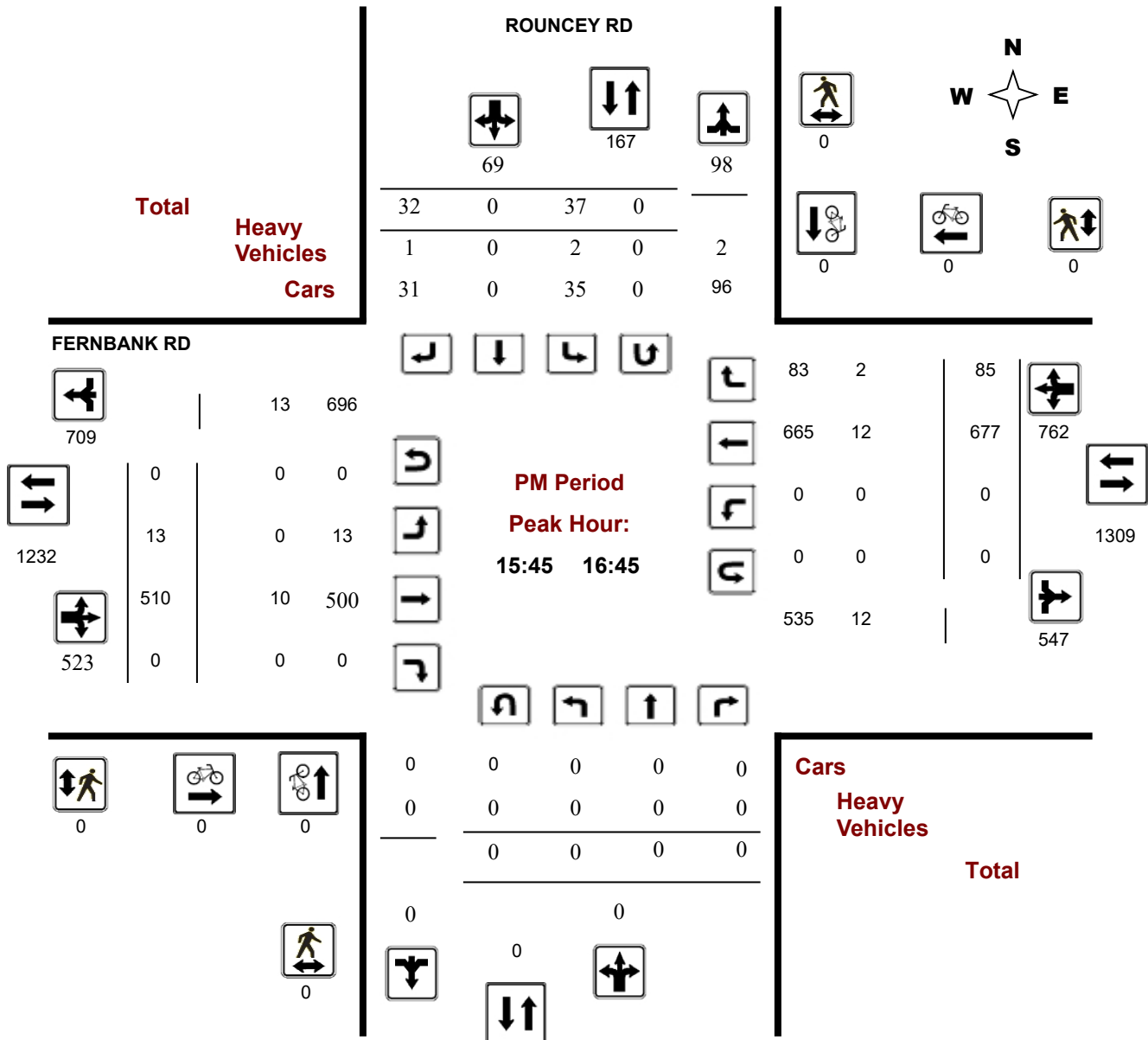
Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Tuesday, March 07, 2023

Total Observed U-Turns

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

AADT Factor

1.00

ROUNCEY RD

FERNBANK RD

Period	Northbound					Southbound					Eastbound					Westbound					Grand Total
	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	0	0	0	0		65	0	16	81	81	14	470	0	484		0	290	16	306	790	871
08:00 09:00	0	0	0	0		54	0	26	80	80	9	552	0	561		0	378	34	412	973	1053
09:00 10:00	0	0	0	0		46	0	19	65	65	15	435	0	450		0	321	33	354	804	869
11:30 12:30	0	0	0	0		26	0	7	33	33	7	368	0	375		0	333	28	361	736	769
12:30 13:30	0	0	0	0		20	0	10	30	30	15	310	0	325		0	342	37	379	704	734
15:00 16:00	0	0	0	0		23	0	15	38	38	9	435	0	444		0	546	60	606	1050	1088
16:00 17:00	0	0	0	0		36	0	27	63	63	13	479	0	492		0	687	89	776	1268	1331
17:00 18:00	0	0	0	0		42	0	25	67	67	9	414	0	423		0	689	87	776	1199	1266
Sub Total	0	0	0	0		312	0	145	457	457	91	3463	0	3554		0	3586	384	3970	7524	7981
U Turns				0					0	0				1					1	2	2
Total	0	0	0	0		312	0	145	457	457	91	3463	0	3555		0	3586	384	3971	7526	7983
EQ 12Hr	0	0	0	0		434	0	202	635	635	126	4814	0	4941		0	4985	534	5520	10461	11096

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

1.39

AVG 12Hr 0 0 0 0 434 0 264 635 635 126 4814 0 4941 0 4985 534 5520 10461 11096

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

1.00

AVG 24Hr 0 0 0 0 569 0 346 832 832 165 6306 0 6473 0 6530 700 7231 13704 14536

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

FERNBANK RD @ ROUNCEY RD

Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

ROUNCEY RD

FERNBANK RD

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	0	0	15	0	1	16	16	4	116	0	120	0	42	6	48	168	184
07:15 07:30	0	0	0	0	18	0	2	20	20	1	93	0	94	0	61	3	64	158	178
07:30 07:45	0	0	0	0	19	0	8	27	27	4	115	0	119	0	87	2	89	208	235
07:45 08:00	0	0	0	0	13	0	5	18	18	5	146	0	151	0	100	5	105	256	274
08:00 08:15	0	0	0	0	15	0	5	20	20	5	144	0	149	0	72	5	77	226	246
08:15 08:30	0	0	0	0	14	0	8	22	22	2	140	0	142	0	91	7	98	240	262
08:30 08:45	0	0	0	0	17	0	4	21	21	2	140	0	142	0	96	14	110	252	273
08:45 09:00	0	0	0	0	8	0	9	17	17	0	128	0	128	0	119	8	127	255	272
09:00 09:15	0	0	0	0	16	0	3	19	19	2	150	0	152	0	103	12	115	267	286
09:15 09:30	0	0	0	0	17	0	6	23	23	6	121	0	127	0	71	10	81	208	231
09:30 09:45	0	0	0	0	7	0	7	14	14	4	92	0	96	0	72	2	74	170	184
09:45 10:00	0	0	0	0	6	0	3	9	9	3	72	0	75	0	75	9	84	159	168
11:30 11:45	0	0	0	0	6	0	2	8	8	2	105	0	107	0	61	5	67	174	182
11:45 12:00	0	0	0	0	4	0	2	6	6	2	77	0	79	0	92	6	98	177	183
12:00 12:15	0	0	0	0	8	0	1	9	9	3	90	0	93	0	85	6	91	184	193
12:30 12:45	0	0	0	0	7	0	2	9	9	4	83	0	87	0	90	13	103	190	199
12:45 13:00	0	0	0	0	4	0	4	8	8	6	77	0	83	0	99	8	107	190	198
13:00 13:15	0	0	0	0	5	0	3	8	8	3	62	0	65	0	74	11	85	150	158
13:15 13:30	0	0	0	0	4	0	1	5	5	2	88	0	90	0	79	5	84	174	179
15:00 15:15	0	0	0	0	7	0	2	9	9	1	83	0	84	0	101	12	113	197	206
15:15 15:30	0	0	0	0	3	0	2	5	5	1	95	0	96	0	137	13	150	246	251
15:30 15:45	0	0	0	0	5	0	3	8	8	2	120	0	122	0	149	17	166	288	296
15:45 16:00	0	0	0	0	8	0	8	16	16	5	137	0	142	0	159	18	177	319	335
16:00 16:15	0	0	0	0	10	0	11	21	21	6	129	0	135	0	175	20	195	330	351
16:15 16:30	0	0	0	0	9	0	6	15	15	1	123	0	124	0	164	25	189	313	328
17:30 17:45	0	0	0	0	8	0	7	15	15	3	101	0	104	0	154	24	178	282	297
17:45 18:00	0	0	0	0	13	0	4	17	17	2	104	0	106	0	171	18	189	295	312
12:15 12:30	0	0	0	0	8	0	2	10	10	0	96	0	97	0	95	11	106	203	213
16:30 16:45	0	0	0	0	10	0	7	17	17	1	121	0	122	0	179	22	201	323	340
16:45 17:00	0	0	0	0	7	0	3	10	10	5	106	0	111	0	169	22	191	302	312
17:00 17:15	0	0	0	0	13	0	6	19	19	1	104	0	105	0	206	22	228	333	352
17:15 17:30	0	0	0	0	8	0	8	16	16	3	105	0	108	0	158	23	181	289	305
Total:	0	0	0	0	312	0	145	457	457	91	3463	0	3555	0	3586	384	3971	7526	7,983

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

FERNBANK RD @ ROUNCEY RD

Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

		ROUNCEY RD			FERNBANK RD			Grand Total
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street 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	1	1	1
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
12:30	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
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
12:15	12:30	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
Total		0	0	0	0	1	1	1



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

ROUNCEY RD

FERNBANK RD

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	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
12:30 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	1	1	0	0	0	1
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
17:30 17:45	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
12:15 12:30	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
Total	0	1	1	0	0	0	1



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

ROUNCEY RD

FERNBANK RD

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	0	0	0	0	0	0	0	0	5	0	5	0	3	1	4	9	9
07:15 07:30	0	0	0	0	1	0	0	1	1	0	2	0	2	0	4	1	5	7	8
07:30 07:45	0	0	0	0	1	0	0	1	1	0	3	0	3	0	2	0	2	5	6
07:45 08:00	0	0	0	0	0	0	0	0	0	0	6	0	6	0	3	1	4	10	10
08:00 08:15	0	0	0	0	0	0	0	0	0	1	5	0	6	0	3	0	3	9	9
08:15 08:30	0	0	0	0	1	0	0	1	1	0	1	0	1	0	7	0	7	8	9
08:30 08:45	0	0	0	0	1	0	0	1	1	0	1	0	1	0	3	1	4	5	6
08:45 09:00	0	0	0	0	0	0	0	0	0	0	3	0	3	0	6	1	7	10	10
09:00 09:15	0	0	0	0	1	0	0	1	1	0	7	0	7	0	5	0	5	12	13
09:15 09:30	0	0	0	0	1	0	0	1	1	0	2	0	2	0	2	0	2	4	5
09:30 09:45	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	2
09:45 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3	3
11:30 11:45	0	0	0	0	0	0	1	1	1	0	3	0	3	0	2	0	2	5	6
11:45 12:00	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3	3
12:00 12:15	0	0	0	0	0	0	0	0	0	0	4	0	4	0	3	0	3	7	7
12:30 12:45	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1
12:45 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2
13:00 13:15	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3	3
13:15 13:30	0	0	0	0	0	0	0	0	0	0	3	0	3	0	5	0	5	8	8
15:00 15:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	5	1	6	7	7
15:15 15:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	1	5	6	6
15:30 15:45	0	0	0	0	0	0	0	0	0	0	2	0	2	0	3	1	4	6	6
15:45 16:00	0	0	0	0	0	0	1	1	1	0	4	0	4	0	2	1	3	7	8
16:00 16:15	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4	1	5	7	7
16:15 16:30	0	0	0	0	2	0	0	2	2	0	2	0	2	0	4	0	4	6	8
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	1	0	1	0	2	0	2	3	3
12:15 12:30	0	0	0	0	0	0	0	0	0	0	3	0	3	0	3	0	3	6	6
16:30 16:45	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4	4
16:45 17:00	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4	4
17:00 17:15	0	0	0	0	0	0	0	0	0	0	3	0	3	0	2	0	2	5	5
17:15 17:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1
Total: None	0	0	0	0	8	0	2	10	10	1	73	0	74	0	90	11	101	175	185

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ ROUNCEY RD

Survey Date: Tuesday, March 07, 2023

WO No: 40871

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

ROUNCEY RD

FERNBANK RD

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	1	1
11:45	12:00	0	0	0	0	0
12:00	12:15	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
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
12:15	12:30	0	0	1	0	1
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
Total		0	0	1	1	2

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

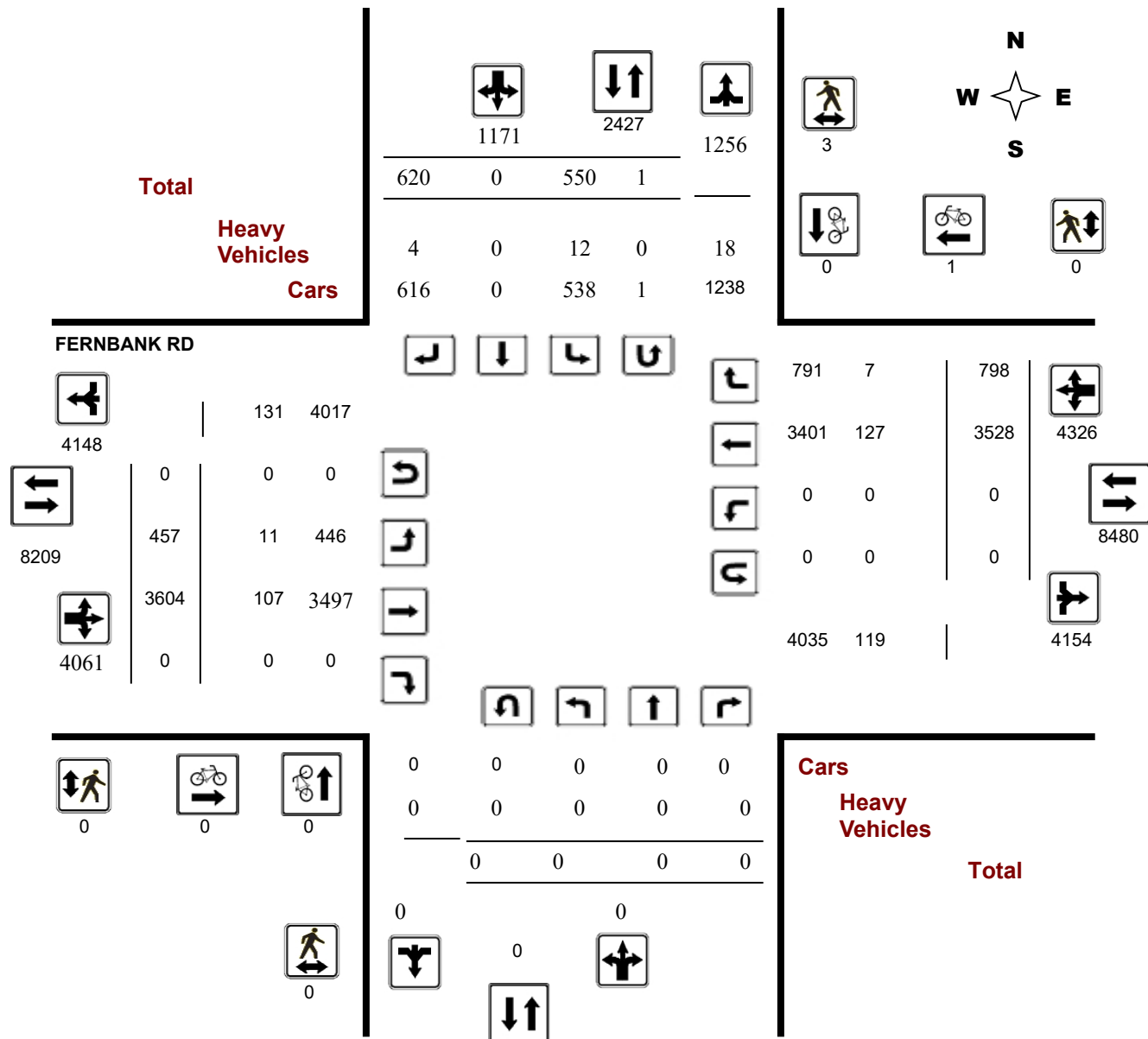
Survey Date: Wednesday, January 31, 2024

Start Time: 07:00

WO No: 41666

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

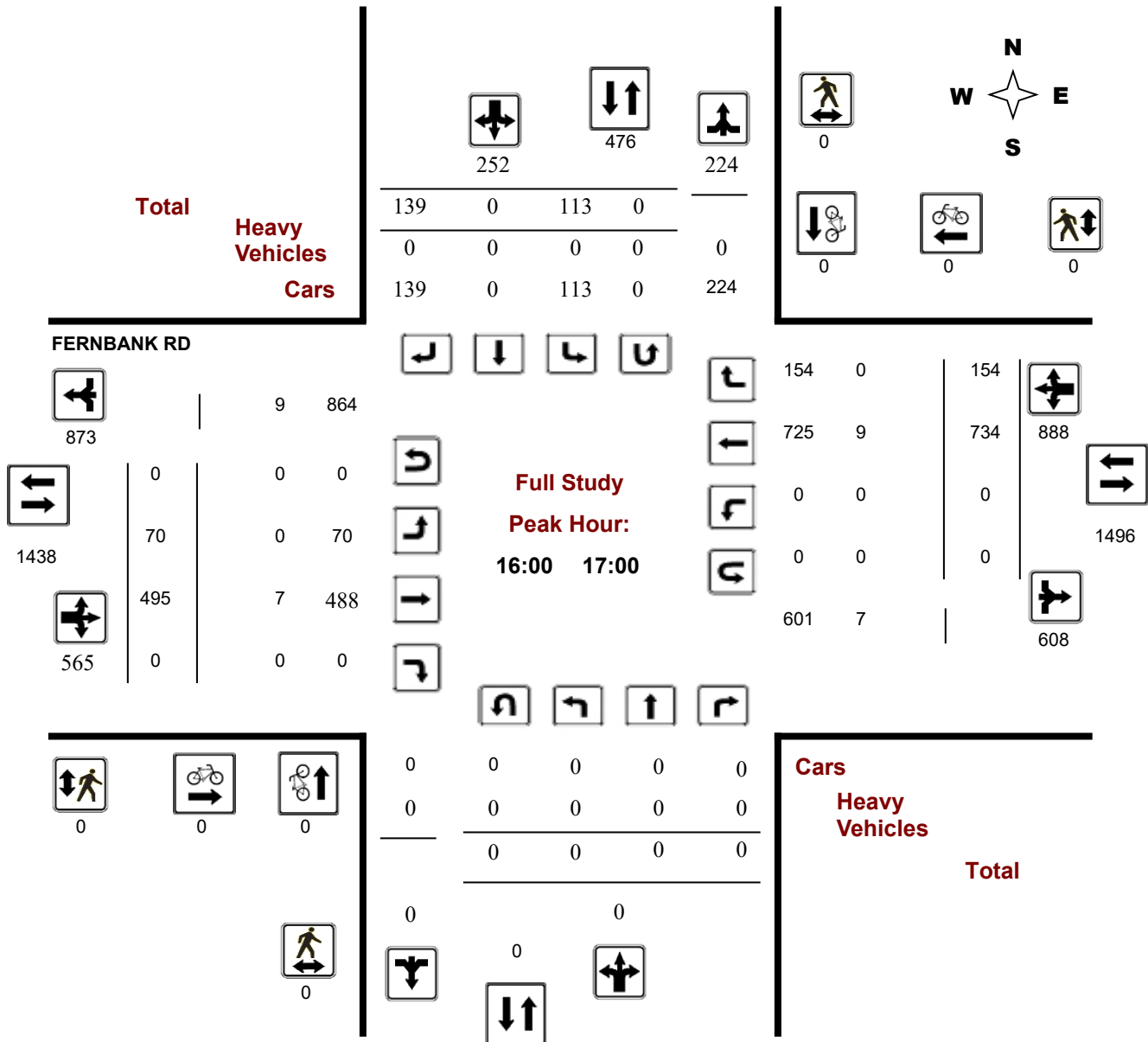
Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

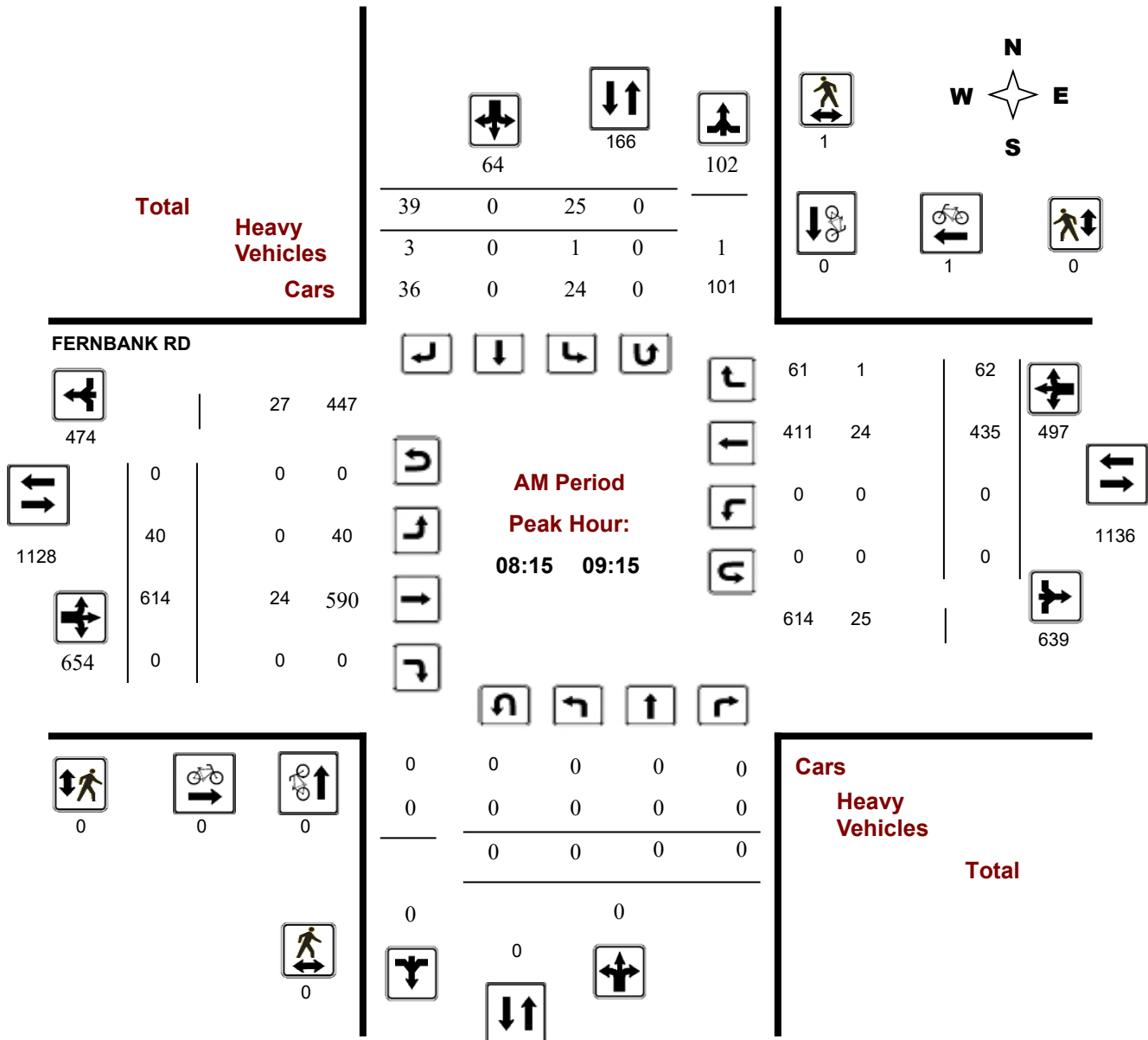
Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

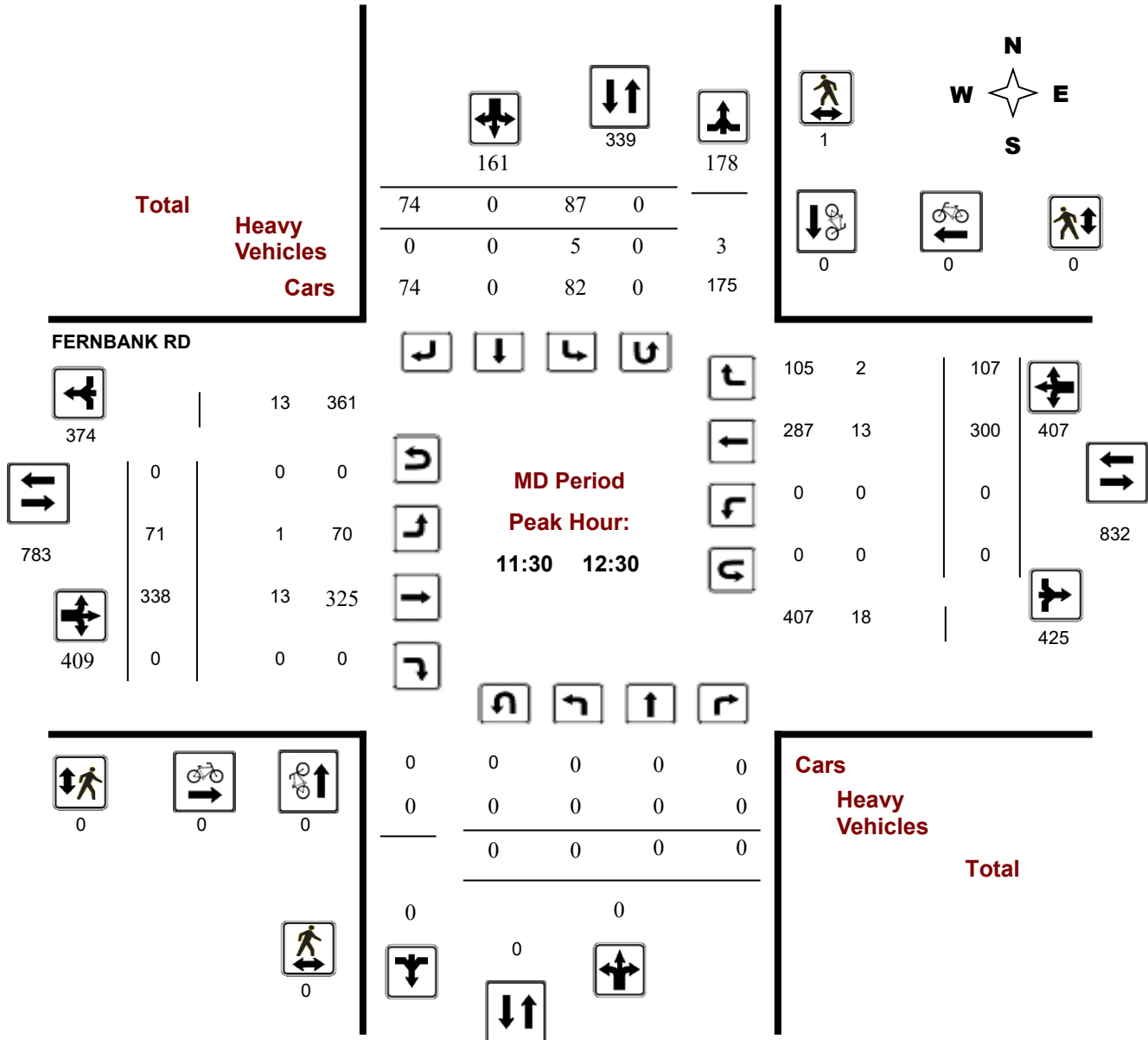
Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

MD Period Peak Hour Diagram



Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

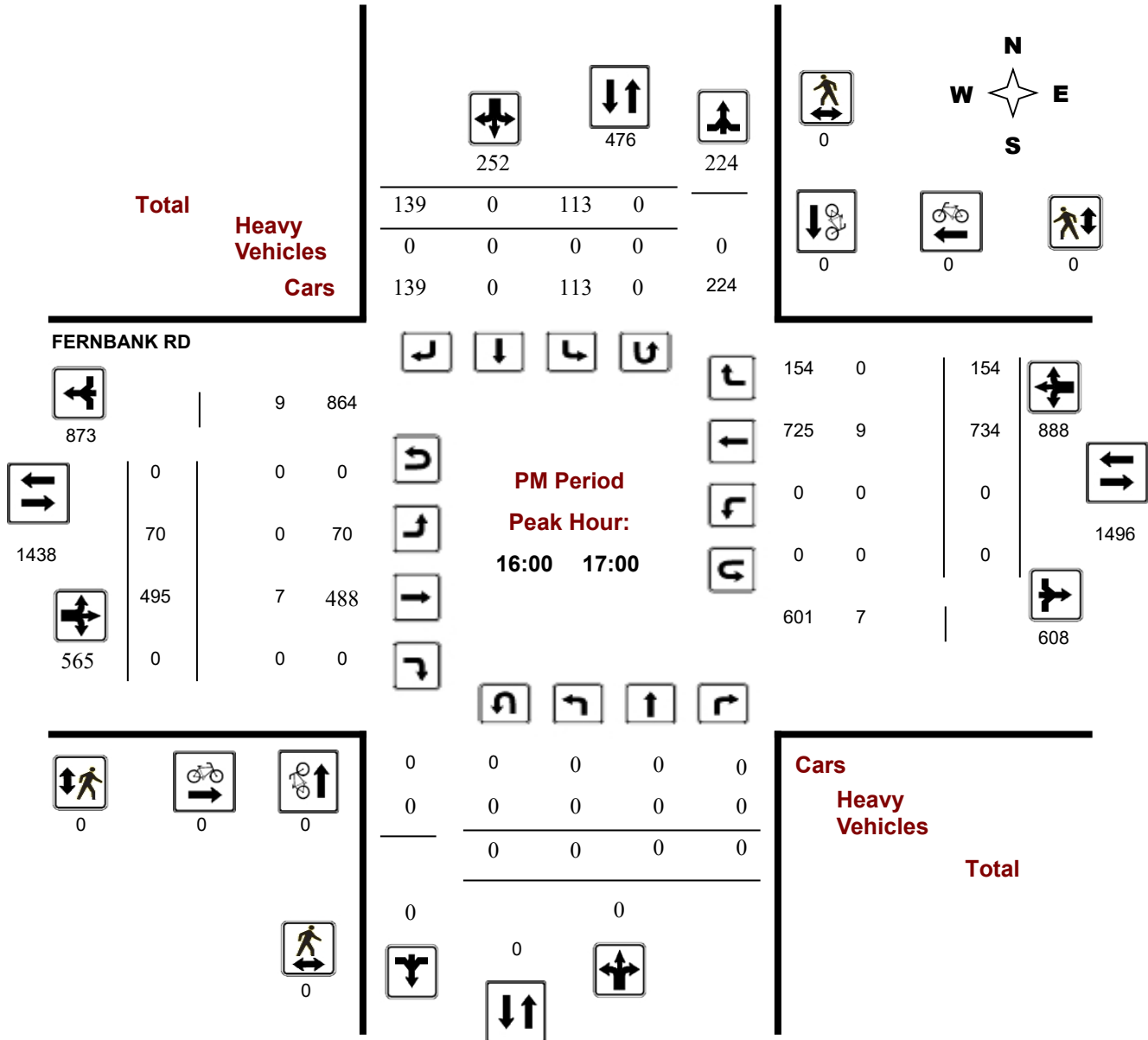
Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, January 31, 2024

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 1

1.00

Eastbound: 0 Westbound: 0

FERNBANK RD

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	0	0	14	0	14	28	28	21	545	0	566	0	295	30	325	891	919
08:00 09:00	0	0	0	0	18	0	38	56	56	29	592	0	621	0	403	60	463	1084	1140
09:00 10:00	0	0	0	0	47	0	48	95	95	53	472	0	525	0	322	76	398	923	1018
11:30 12:30	0	0	0	0	87	0	74	161	161	71	338	0	409	0	300	107	407	816	977
12:30 13:30	0	0	0	0	71	0	92	163	163	68	296	0	364	0	327	95	422	786	949
15:00 16:00	0	0	0	0	82	0	109	191	191	75	430	0	505	0	558	132	690	1195	1386
16:00 17:00	0	0	0	0	113	0	139	252	252	70	495	0	565	0	734	154	888	1453	1705
17:00 18:00	0	0	0	0	118	0	106	224	224	70	436	0	506	0	589	144	733	1239	1463
Sub Total	0	0	0	0	550	0	620	1170	1170	457	3604	0	4061	0	3528	798	4326	8387	9557
U Turns				0				1	1				0				0	0	1
Total	0	0	0	0	550	0	620	1171	1171	457	3604	0	4061	0	3528	798	4326	8387	9558
EQ 12Hr	0	0	0	0	764	0	862	1628	1628	635	5010	0	5645	0	4904	1109	6013	11658	13286
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.																			1.39
AVG 12Hr	0	0	0	0	764	0	1129	1628	1628	635	5010	0	5645	0	4904	1109	6013	11658	13286
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.																			1.00
AVG 24Hr	0	0	0	0	1001	0	1479	2133	2133	832	6563	0	7395	0	6424	1453	7877	15272	17405
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

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

FERNBANK RD

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	0	0	3	0	2	5	5	6	118	0	124	0	56	4	60	184	189
07:15 07:30	0	0	0	0	2	0	3	5	5	5	121	0	126	0	52	5	57	183	188
07:30 07:45	0	0	0	0	5	0	3	8	8	6	155	0	161	0	95	8	103	264	272
07:45 08:00	0	0	0	0	4	0	6	10	10	4	151	0	155	0	92	13	105	260	270
08:00 08:15	0	0	0	0	3	0	9	12	12	4	142	0	146	0	79	16	95	241	253
08:30 08:45	0	0	0	0	6	0	10	16	16	10	135	0	145	0	94	12	106	251	267
08:45 09:00	0	0	0	0	1	0	11	12	12	6	163	0	169	0	124	23	147	316	328
09:00 09:15	0	0	0	0	10	0	10	20	20	15	164	0	179	0	111	18	129	308	328
09:15 09:30	0	0	0	0	17	0	13	30	30	15	138	0	153	0	74	24	98	251	281
09:30 09:45	0	0	0	0	6	0	15	21	21	13	87	0	100	0	70	18	88	188	209
09:45 10:00	0	0	0	0	14	0	10	24	24	10	83	0	93	0	67	16	83	176	200
11:30 11:45	0	0	0	0	22	0	16	38	38	18	84	0	102	0	62	35	97	199	237
12:00 12:15	0	0	0	0	27	0	20	47	47	20	81	0	101	0	84	21	105	206	253
12:15 12:30	0	0	0	0	17	0	18	35	35	20	81	0	101	0	62	32	94	195	230
12:30 12:45	0	0	0	0	16	0	24	40	40	12	72	0	84	0	85	24	109	193	233
12:45 13:00	0	0	0	0	16	0	27	43	43	27	80	0	107	0	78	31	109	216	259
13:00 13:15	0	0	0	0	19	0	24	43	43	13	65	0	78	0	81	21	102	180	223
13:15 13:30	0	0	0	0	20	0	17	38	38	16	79	0	95	0	83	19	102	197	235
15:00 15:15	0	0	0	0	19	0	23	42	42	15	96	0	111	0	97	23	120	231	273
15:15 15:30	0	0	0	0	20	0	26	46	46	12	95	0	107	0	132	33	165	272	318
15:30 15:45	0	0	0	0	22	0	29	51	51	23	116	0	139	0	168	37	205	344	395
08:15 08:30	0	0	0	0	8	0	8	16	16	9	152	0	161	0	106	9	115	276	292
11:45 12:00	0	0	0	0	21	0	20	41	41	13	92	0	105	0	92	19	111	216	257
17:45 18:00	0	0	0	0	26	0	23	49	49	15	101	0	116	0	132	40	172	288	337
17:15 17:30	0	0	0	0	24	0	24	48	48	16	129	0	145	0	141	35	176	321	369
15:45 16:00	0	0	0	0	21	0	31	52	52	25	123	0	148	0	161	39	200	348	400
16:00 16:15	0	0	0	0	29	0	39	68	68	20	148	0	168	0	189	40	229	397	465
16:15 16:30	0	0	0	0	26	0	35	61	61	19	123	0	142	0	172	37	209	351	412
16:30 16:45	0	0	0	0	27	0	28	55	55	18	123	0	141	0	175	41	216	357	412
17:00 17:15	0	0	0	0	35	0	32	67	67	13	111	0	124	0	187	27	214	338	405
17:30 17:45	0	0	0	0	33	0	27	60	60	26	95	0	121	0	129	42	171	292	352
16:45 17:00	0	0	0	0	31	0	37	68	68	13	101	0	114	0	198	36	234	348	416
Total:	0	0	0	0	550	0	620	1171	1171	457	3604	0	4061	0	3528	798	4326	8387	9,558

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

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

FERNBANK RD

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
08:30	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	1	1	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
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
08:15	08:30	0	0	0	0	0	0	0
11:45	12:00	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
17:15	17:30	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
17:00	17:15	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
Total		0	0	0	0	1	1	1



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

FERNBANK RD

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	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
08:30 08:45	0	1	1	0	0	0	1
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
12:00 12:15	0	0	0	0	0	0	0
12:15 12:30	0	1	1	0	0	0	1
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	1	1	0	0	0	1
15:30 15:45	0	0	0	0	0	0	0
08:15 08:30	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0
17:45 18:00	0	0	0	0	0	0	0
17:15 17:30	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
17:00 17:15	0	0	0	0	0	0	0
17:30 17:45	0	0	0	0	0	0	0
16:45 17:00	0	0	0	0	0	0	0
Total	0	3	3	0	0	0	3



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

FERNBANK RD

		Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
Time Period		LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00	07:15	0	0	0	0	1	0	0	1	1	1	4	0	5	0	5	0	5	10	11
07:15	07:30	0	0	0	0	0	0	0	0	0	1	4	0	5	0	6	0	6	11	11
07:30	07:45	0	0	0	0	2	0	0	2	2	0	6	0	6	0	3	1	4	10	12
07:45	08:00	0	0	0	0	0	0	0	0	0	0	6	0	6	0	8	0	8	14	14
08:00	08:15	0	0	0	0	0	0	0	0	0	0	3	0	3	0	1	1	2	5	5
08:30	08:45	0	0	0	0	0	0	1	1	1	0	1	0	1	0	5	0	5	6	7
08:45	09:00	0	0	0	0	0	0	0	0	0	0	9	0	9	0	9	1	10	19	19
09:00	09:15	0	0	0	0	0	0	0	0	0	0	11	0	11	0	3	0	3	14	14
09:15	09:30	0	0	0	0	0	0	0	0	0	1	3	0	4	0	5	0	5	9	9
09:30	09:45	0	0	0	0	1	0	0	1	1	3	3	0	6	0	3	0	3	9	10
09:45	10:00	0	0	0	0	1	0	0	1	1	0	3	0	3	0	5	0	5	8	9
11:30	11:45	0	0	0	0	1	0	0	1	1	0	1	0	1	0	2	1	3	4	5
12:00	12:15	0	0	0	0	2	0	0	2	2	1	4	0	5	0	4	0	4	9	11
12:15	12:30	0	0	0	0	1	0	0	1	1	0	4	0	4	0	2	0	2	6	7
12:30	12:45	0	0	0	0	0	0	0	0	0	0	5	0	5	0	5	1	6	11	11
12:45	13:00	0	0	0	0	0	0	0	0	0	1	2	0	3	0	3	0	3	6	6
13:00	13:15	0	0	0	0	1	0	0	1	1	2	3	0	5	0	8	0	8	13	14
13:15	13:30	0	0	0	0	0	0	0	0	0	1	4	0	5	0	3	1	4	9	9
15:00	15:15	0	0	0	0	0	0	1	1	1	0	3	0	3	0	9	0	9	12	13
15:15	15:30	0	0	0	0	0	0	0	0	0	0	2	0	2	0	5	0	5	7	7
15:30	15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5	5
08:15	08:30	0	0	0	0	1	0	2	3	3	0	3	0	3	0	7	0	7	10	13
11:45	12:00	0	0	0	0	1	0	0	1	1	0	4	0	4	0	5	1	6	10	11
17:45	18:00	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	1	3	3
17:15	17:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3	3
15:45	16:00	0	0	0	0	0	0	0	0	0	0	6	0	6	0	4	0	4	10	10
16:00	16:15	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4	0	4	6	6
16:15	16:30	0	0	0	0	0	0	0	0	0	0	4	0	4	0	2	0	2	6	6
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
17:00	17:15	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3	3
17:30	17:45	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	1	0	1	0	2	0	2	3	3
Total:	None	0	0	0	0	12	0	4	16	16	11	107	0	118	0	127	7	134	252	268

Transportation Services - Traffic Services

Turning Movement Count - Study Results

FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Survey Date: Wednesday, January 31, 2024

WO No: 41666

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

FERNBANK RD

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
08:30	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
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	1	0	0	1
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
08:15	08:30	0	0	0	0	0
11:45	12:00	0	0	0	0	0
17:45	18:00	0	0	0	0	0
17:15	17:30	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
17:00	17:15	0	0	0	0	0
17:30	17:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
Total		0	1	0	0	1

Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

Start Time: 07:00

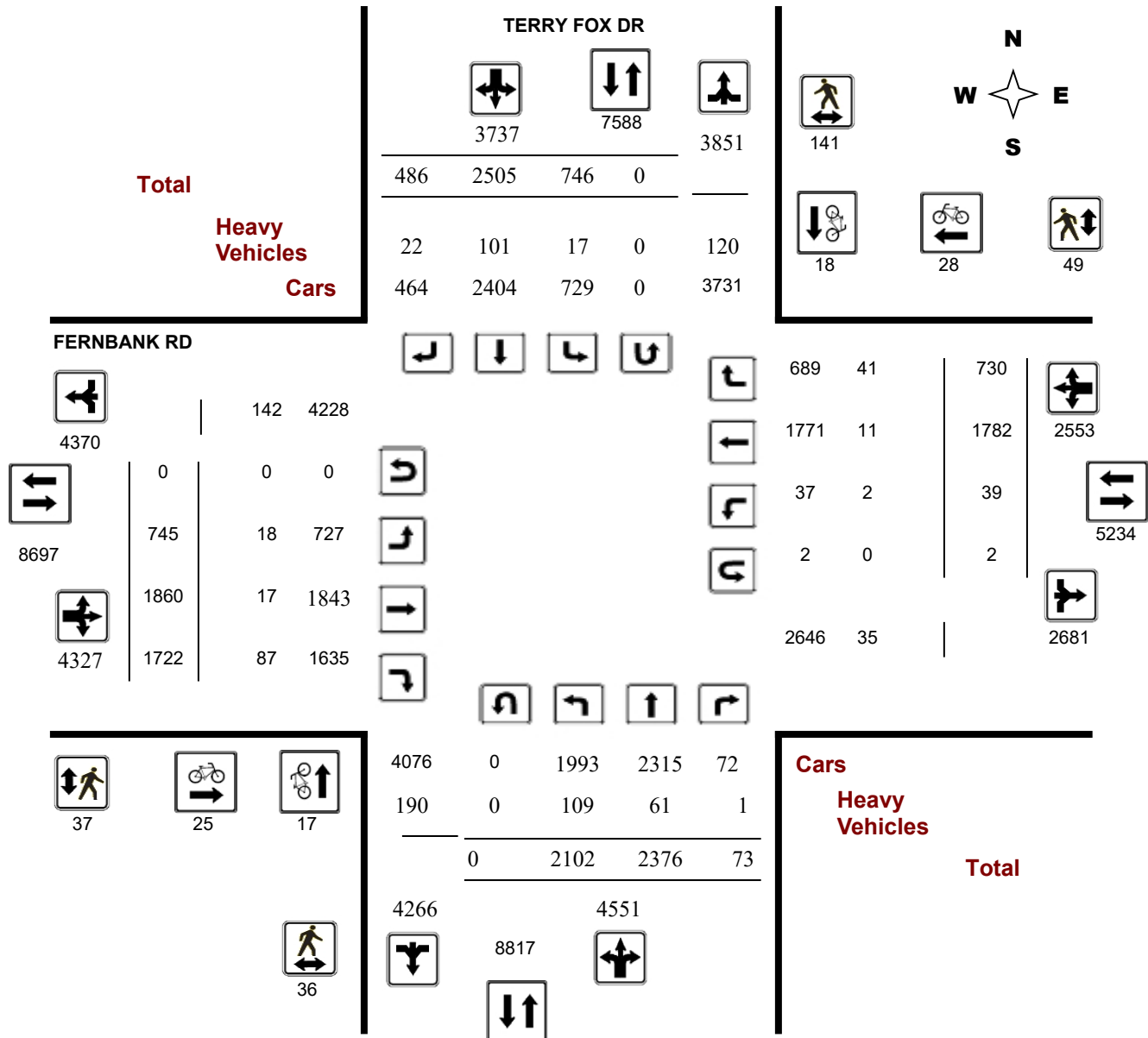
WO No:

42149

Device:

Miovision

Full Study Diagram



Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

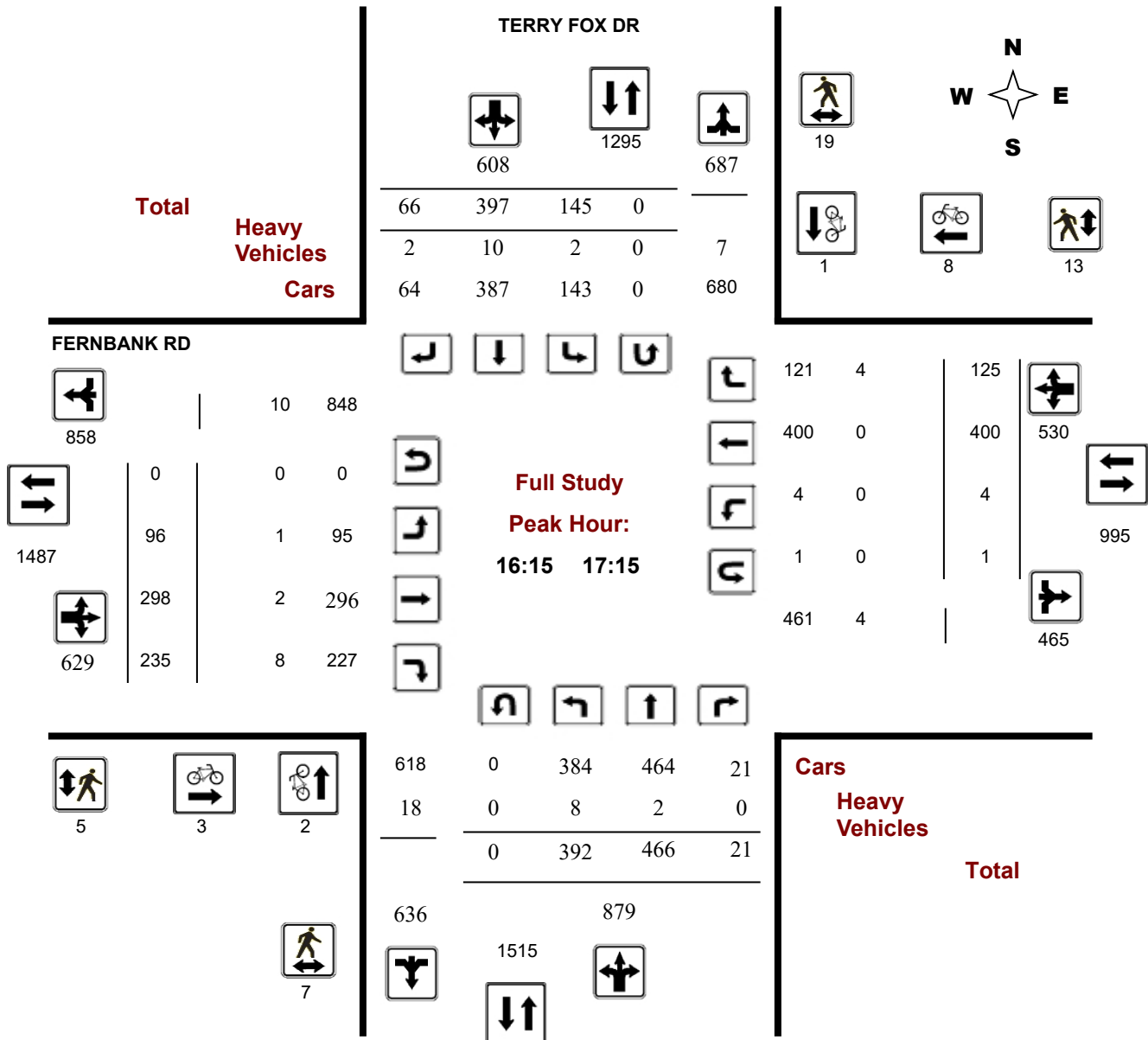
Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram



Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

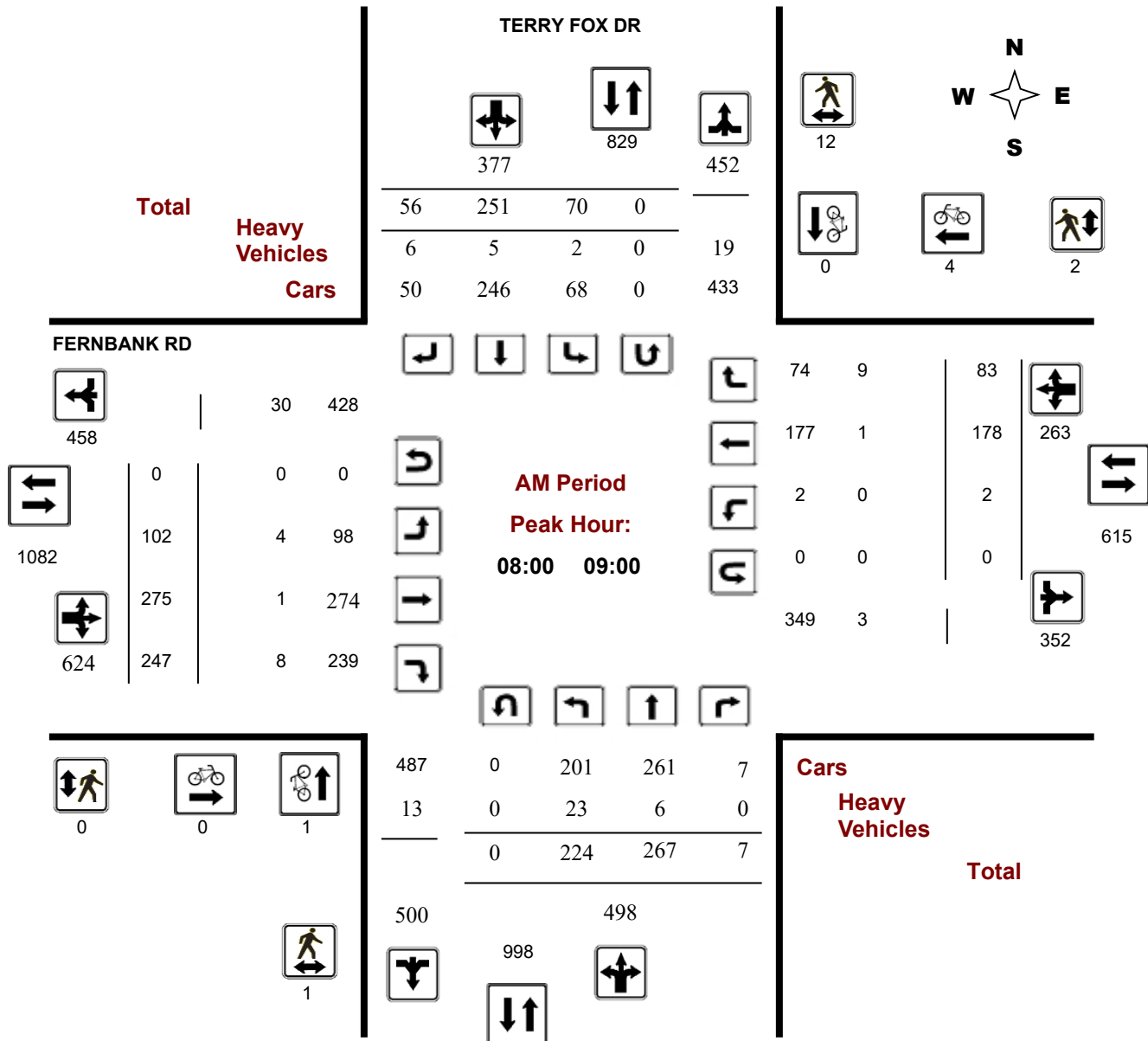
Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

AM Period Peak Hour Diagram



Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

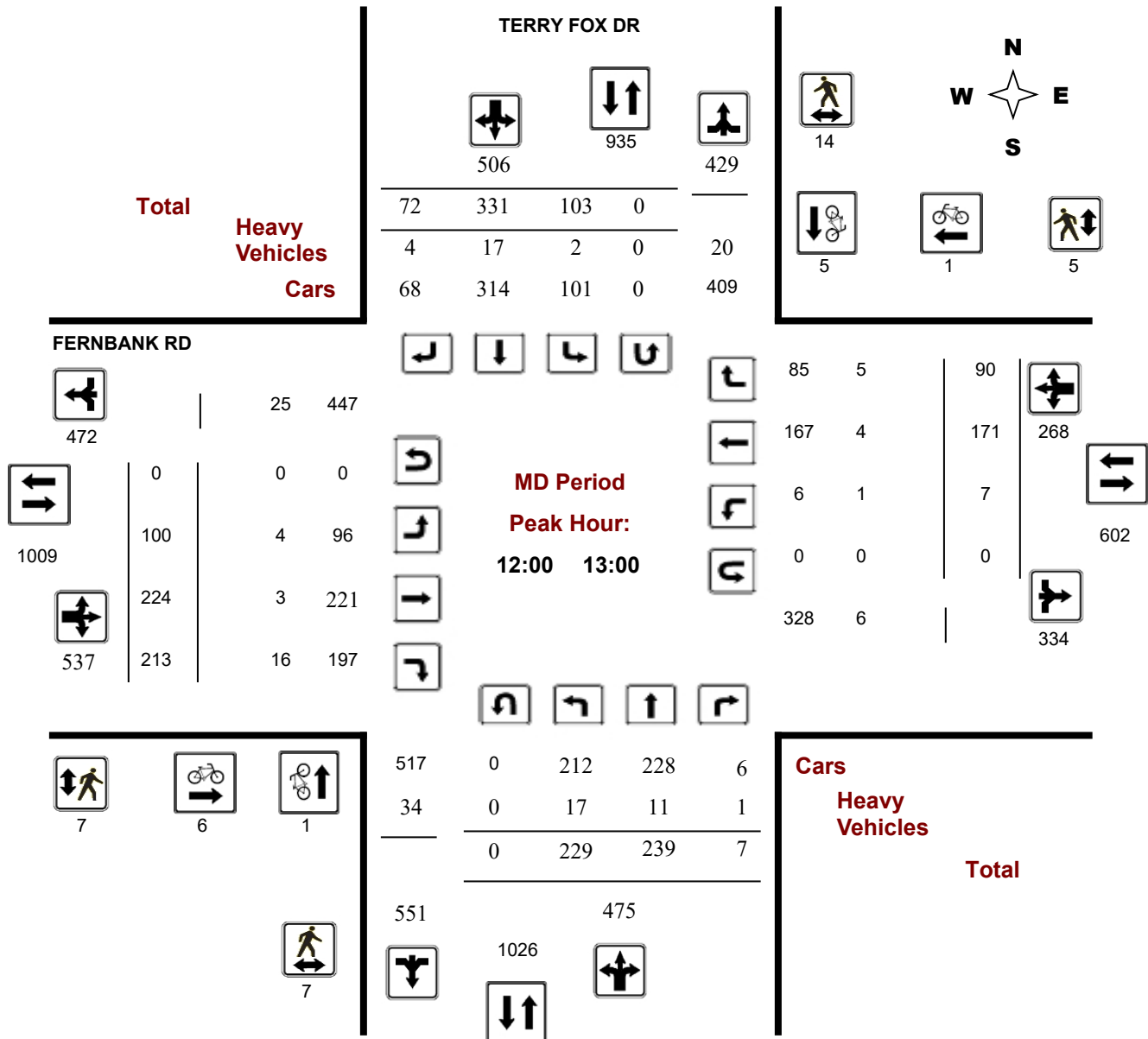
Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

MD Period Peak Hour Diagram



Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

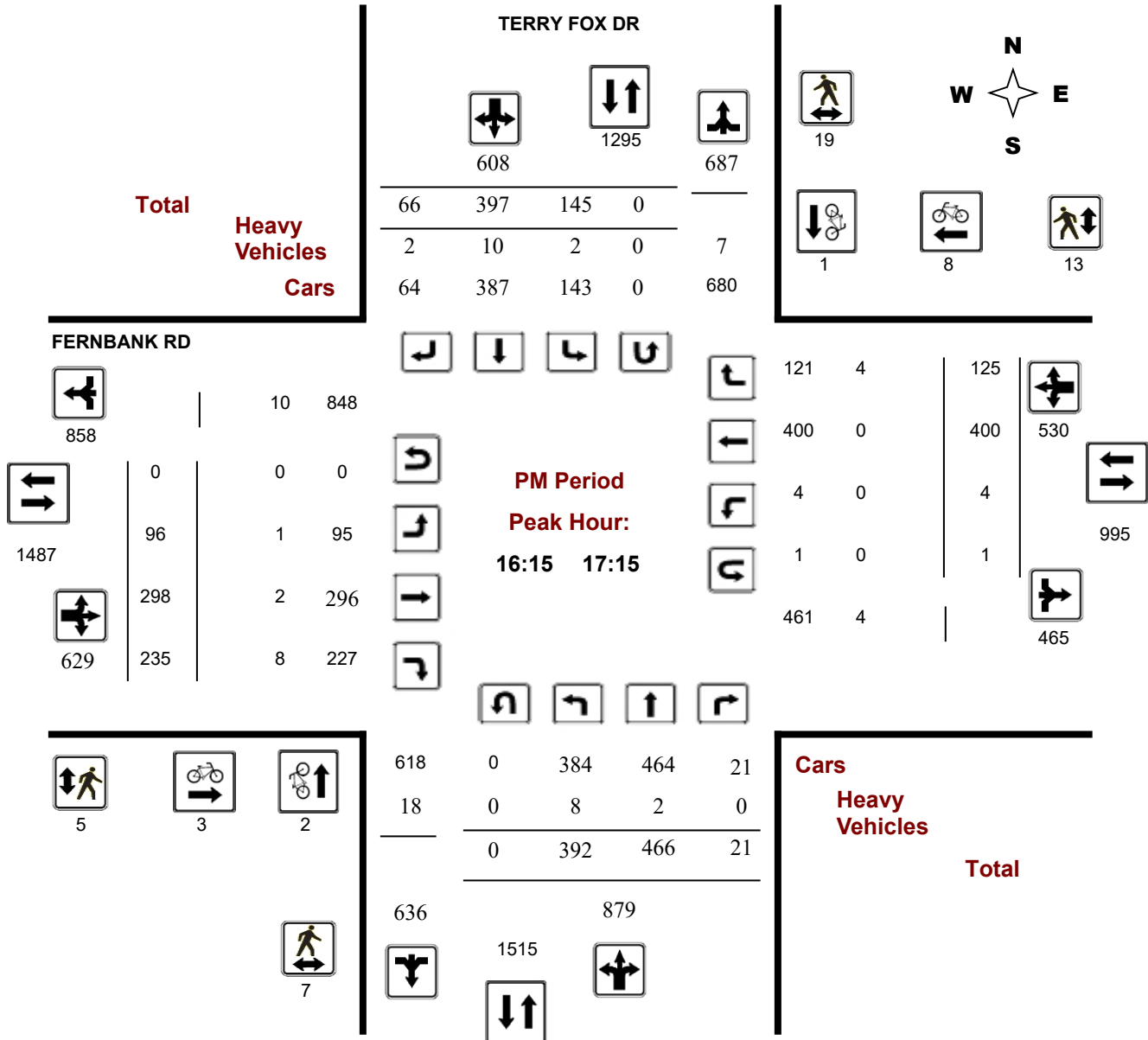
Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, August 14, 2024

Total Observed U-Turns

AADT Factor

Northbound: 0 Southbound: 0

.90

Eastbound: 0 Westbound: 2

TERRY FOX DR

FERNBANK RD

Period	Northbound					Southbound					Eastbound					Westbound					Grand Total
	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	151	206	2	359		28	238	30	296	655	61	197	204	462		6	108	70	184	646	1301
08:00 09:00	224	267	7	498		70	251	56	377	875	102	275	247	624		2	178	83	263	887	1762
09:00 10:00	207	246	7	460		62	236	47	345	805	93	208	189	490		5	175	82	262	752	1557
11:30 12:30	226	230	7	463		94	282	68	444	907	103	202	202	507		3	170	94	267	774	1681
12:30 13:30	226	252	5	483		98	332	65	495	978	89	196	180	465		8	175	77	260	725	1703
15:00 16:00	293	291	11	595		107	356	84	547	1142	104	235	257	596		4	258	80	342	938	2080
16:00 17:00	396	447	18	861		141	404	80	625	1486	87	305	246	638		1	382	126	509	1147	2633
17:00 18:00	379	437	16	832		146	406	56	608	1440	106	242	197	545		10	336	118	464	1009	2449
Sub Total	2102	2376	73	4551		746	2505	486	3737	8288	745	1860	1722	4327		39	1782	730	2551	6878	15166
U Turns				0					0	0				0					2	2	2
Total	2102	2376	73	4551		746	2505	486	3737	8288	745	1860	1722	4327		39	1782	730	2553	6880	15168
EQ 12Hr	2922	3303	101	6326		1037	3482	676	5194	11520	1036	2585	2394	6015		54	2477	1015	3549	9563	21084

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

1.39

AVG 12Hr	2630	2973	91	5693		933	4105	796	4675	10368	932	2326	2155	5414		49	2229	914	3194	8607	18976
-----------------	------	------	----	------	--	-----	------	-----	------	-------	-----	------	------	------	--	----	------	-----	------	------	-------

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

.90

AVG 24Hr	3445	3895	119	7458		1222	5378	1043	6124	13582	1221	3047	2823	7092		64	2920	1197	4184	11275	24859
-----------------	------	------	-----	------	--	------	------	------	------	-------	------	------	------	------	--	----	------	------	------	-------	-------

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

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

TERRY FOX DR

FERNBANK RD

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	27	52	0	79	6	52	7	65	144	15	37	43	95	1	24	12	37	132	276
07:15	07:30	41	39	0	80	3	63	9	75	155	14	49	51	114	1	20	20	41	155	310
07:30	07:45	37	65	0	102	10	69	7	86	188	12	54	60	126	1	26	19	46	172	360
17:45	18:00	94	104	4	202	30	100	18	148	350	28	63	59	150	2	81	26	109	259	609
07:45	08:00	46	50	2	98	9	54	7	70	168	20	57	50	127	3	38	19	60	187	355
08:00	08:15	52	67	1	120	14	59	17	90	210	16	52	72	140	1	43	16	60	200	410
08:15	08:30	59	52	3	114	20	55	9	84	198	29	85	63	177	0	39	17	56	233	431
08:30	08:45	54	64	1	119	20	58	12	90	209	28	70	66	164	0	46	22	68	232	441
08:45	09:00	59	84	2	145	16	79	18	113	258	29	68	46	143	1	50	28	79	222	480
09:00	09:15	50	50	1	101	16	64	13	93	194	20	64	58	142	0	43	22	65	207	401
09:15	09:30	67	61	2	130	13	47	16	76	206	22	55	38	115	1	43	10	54	169	375
09:30	09:45	43	65	2	110	20	77	10	107	217	25	43	54	122	4	41	22	67	189	406
09:45	10:00	47	70	2	119	13	48	8	69	188	26	46	39	111	0	48	28	76	187	375
11:30	11:45	51	57	3	111	13	60	13	86	197	27	39	45	111	1	42	24	67	178	375
11:45	12:00	54	69	1	124	25	78	16	119	243	27	46	44	117	1	38	20	59	176	419
12:00	12:15	61	52	1	114	26	64	22	112	226	27	55	58	140	1	44	16	61	201	427
12:15	12:30	60	52	2	114	30	80	17	127	241	22	62	55	139	0	46	34	80	219	460
12:30	12:45	58	68	3	129	18	90	13	121	250	22	48	58	128	4	51	23	78	206	456
12:45	13:00	50	67	1	118	29	97	20	146	264	29	59	42	130	2	30	17	49	179	443
13:15	13:30	61	56	1	118	22	87	18	127	245	27	44	37	108	2	47	23	72	180	425
15:00	15:15	52	65	2	119	23	100	21	144	263	21	44	71	136	1	55	13	70	206	469
15:15	15:30	79	68	5	152	25	88	20	133	285	26	64	54	144	1	66	24	91	235	520
15:30	15:45	80	77	2	159	26	95	20	141	300	31	61	62	154	2	65	25	92	246	546
15:45	16:00	82	81	2	165	33	73	23	129	294	26	66	70	162	0	72	18	90	252	546
16:00	16:15	91	105	2	198	33	110	17	160	358	26	75	57	158	0	81	32	113	271	629
16:15	16:30	99	119	5	223	32	114	18	164	387	20	72	58	150	0	97	31	128	278	665
16:45	17:00	104	117	7	228	35	85	21	141	369	24	79	56	159	1	110	29	141	300	669
17:00	17:15	87	124	5	216	37	103	3	143	359	35	68	46	149	3	99	31	133	282	641
17:15	17:30	111	111	5	227	34	115	22	171	398	21	56	46	123	2	81	26	109	232	630
17:30	17:45	87	98	2	187	45	88	13	146	333	22	55	46	123	3	75	35	113	236	569
16:30	16:45	102	106	4	212	41	95	24	160	372	17	79	75	171	0	94	34	128	299	671
13:00	13:15	57	61	0	118	29	58	14	101	219	11	45	43	99	0	47	14	61	160	379
Total:		2102	2376	73	4551	746	2505	486	3737	8288	745	1860	1722	4327	39	1782	730	2553	6880	15,168

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

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

TERRY FOX DR					FERNBANK RD			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	1	0	1	0	1	1	2
07:15	07:30	0	0	0	0	1	1	1
07:30	07:45	0	1	1	0	0	0	1
17:45	18:00	0	3	3	3	1	4	7
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	1	1	2
08:30	08:45	0	0	0	0	2	2	2
08:45	09:00	0	0	0	0	1	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	1	0	1	0	2	2	3
11:45	12:00	2	0	2	1	1	2	4
12:00	12:15	0	1	1	1	0	1	2
12:15	12:30	1	2	3	1	0	1	4
12:30	12:45	0	2	2	4	0	4	6
12:45	13:00	0	0	0	0	1	1	1
13:15	13:30	0	0	0	0	1	1	1
15:00	15:15	0	1	1	1	0	1	2
15:15	15:30	1	2	3	1	0	1	4
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	2	0	2	0	1	1	3
16:15	16:30	1	0	1	2	4	6	7
16:45	17:00	0	1	1	0	1	1	2
17:00	17:15	0	0	0	0	2	2	2
17:15	17:30	2	0	2	4	3	7	9
17:30	17:45	1	5	6	5	0	5	11
16:30	16:45	1	0	1	1	1	2	3
13:00	13:15	3	0	3	1	3	4	7
Total		17	18	35	25	28	53	88



Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

TERRY FOX DR

FERNBANK RD

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	7	7	0	2	2	9
07:15 07:30	1	3	4	2	0	2	6
07:30 07:45	0	2	2	1	0	1	3
17:45 18:00	0	8	8	3	2	5	13
07:45 08:00	0	3	3	0	1	1	4
08:00 08:15	0	4	4	0	0	0	4
08:15 08:30	1	5	6	0	0	0	6
08:30 08:45	0	3	3	0	2	2	5
08:45 09:00	0	0	0	0	0	0	0
09:00 09:15	0	2	2	0	1	1	3
09:15 09:30	0	2	2	0	0	0	2
09:30 09:45	1	0	1	1	0	1	2
09:45 10:00	0	0	0	0	0	0	0
11:30 11:45	4	3	7	4	0	4	11
11:45 12:00	0	3	3	0	1	1	4
12:00 12:15	1	3	4	1	3	4	8
12:15 12:30	3	4	7	3	1	4	11
12:30 12:45	1	4	5	0	1	1	6
12:45 13:00	2	3	5	3	0	3	8
13:15 13:30	0	8	8	0	1	1	9
15:00 15:15	0	7	7	0	3	3	10
15:15 15:30	7	12	19	5	0	5	24
15:30 15:45	2	8	10	2	2	4	14
15:45 16:00	1	4	5	1	3	4	9
16:00 16:15	0	9	9	0	2	2	11
16:15 16:30	3	2	5	4	6	10	15
16:45 17:00	2	6	8	1	5	6	14
17:00 17:15	2	3	5	0	0	0	5
17:15 17:30	3	3	6	1	1	2	8
17:30 17:45	1	4	5	4	3	7	12
16:30 16:45	0	8	8	0	2	2	10
13:00 13:15	1	8	9	1	7	8	17
Total	36	141	177	37	49	86	263



Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

TERRY FOX DR

FERNBANK RD

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	5	3	0	8	1	1	1	3	11	0	0	1	1	0	1	1	2	3	14
07:15 07:30	6	2	0	8	0	2	1	3	11	0	1	2	3	0	1	2	3	6	17
07:30 07:45	2	1	0	3	1	7	0	8	11	0	0	7	7	0	0	1	1	8	19
17:45 18:00	0	2	0	2	0	1	1	2	4	0	1	0	1	0	0	1	1	2	6
07:45 08:00	3	1	0	4	0	4	1	5	9	0	0	1	1	0	0	1	1	2	11
08:00 08:15	3	1	0	4	1	1	2	4	8	0	0	4	4	0	0	1	1	5	13
08:15 08:30	11	1	0	12	0	1	0	1	13	1	1	1	3	0	0	3	3	6	19
08:30 08:45	1	1	0	2	1	1	1	3	5	1	0	3	4	0	1	2	3	7	12
08:45 09:00	8	3	0	11	0	2	3	5	16	2	0	0	2	0	0	3	3	5	21
09:00 09:15	3	2	0	5	1	8	1	10	15	0	1	4	5	0	0	0	0	5	20
09:15 09:30	3	1	0	4	0	3	1	4	8	1	0	2	3	0	0	1	1	4	12
09:30 09:45	3	3	0	6	1	5	1	7	13	2	0	3	5	0	0	1	1	6	19
09:45 10:00	2	0	0	2	1	1	0	2	4	0	0	2	2	0	1	2	3	5	9
11:30 11:45	1	3	0	4	0	2	0	2	6	2	2	4	8	0	0	1	1	9	15
11:45 12:00	5	5	0	10	0	8	0	8	18	0	0	2	2	0	0	2	2	4	22
12:00 12:15	8	4	0	12	1	2	1	4	16	1	0	2	3	0	1	0	1	4	20
12:15 12:30	5	2	0	7	1	4	1	6	13	1	0	4	5	0	0	4	4	9	22
12:30 12:45	0	3	1	4	0	5	1	6	10	1	2	6	9	1	3	0	4	13	23
12:45 13:00	4	2	0	6	0	6	1	7	13	1	1	4	6	0	0	1	1	7	20
13:15 13:30	5	3	0	8	1	4	1	6	14	0	0	5	5	0	2	2	4	9	23
15:00 15:15	5	5	0	10	0	2	1	3	13	1	1	3	5	0	0	0	0	5	18
15:15 15:30	7	1	0	8	0	7	0	7	15	0	0	5	5	0	0	3	3	8	23
15:30 15:45	1	1	0	2	0	3	0	3	5	0	0	8	8	1	0	0	1	9	14
15:45 16:00	2	3	0	5	0	3	0	3	8	1	1	4	6	0	0	2	2	8	16
16:00 16:15	2	0	0	2	1	3	0	4	6	0	2	1	3	0	0	1	1	4	10
16:15 16:30	2	1	0	3	0	3	1	4	7	0	1	2	3	0	0	1	1	4	11
16:45 17:00	2	0	0	2	0	3	1	4	6	0	0	3	3	0	0	0	0	3	9
17:00 17:15	0	1	0	1	1	2	0	3	4	0	0	0	0	0	0	2	2	2	6
17:15 17:30	1	1	0	2	0	1	1	2	4	2	0	0	2	0	0	1	1	3	7
17:30 17:45	1	1	0	2	1	1	0	2	4	0	1	0	1	0	0	1	1	2	6
16:30 16:45	4	0	0	4	1	2	0	3	7	1	1	3	5	0	0	1	1	6	13
13:00 13:15	4	4	0	8	3	3	0	6	14	0	1	1	2	0	1	0	1	3	17
Total: None	109	61	1	171	17	101	22	140	311	18	17	87	122	2	11	41	54	176	487

Transportation Services - Traffic Services

Turning Movement Count - Study Results

TERRY FOX DR @ FERNBANK RD

Survey Date: Wednesday, August 14, 2024

WO No: 42149

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

TERRY FOX DR

FERNBANK RD

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
17:45	18:00	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
13:15	13:30	0	0	0	0	0
15:00	15:15	0	0	0	1	1
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
16:45	17:00	0	0	0	1	1
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
16:30	16:45	0	0	0	0	0
13:00	13:15	0	0	0	0	0
Total		0	0	0	2	2

APPENDIX D
TRANS Origin-Destination Survey

Kanata - Stittsville

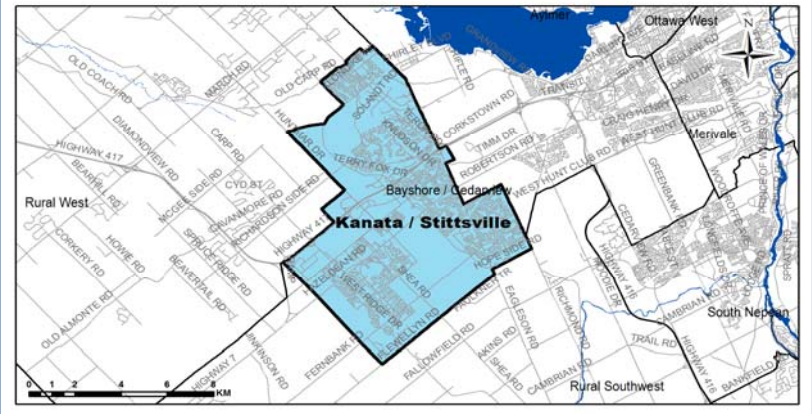
Demographic Characteristics

Population	105,210	Actively Travelled	83,460
Employed Population	49,640	Number of Vehicles	64,540
Households	38,010	Area (km ²)	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
Total:	47,690	50,440	98,120

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 ²)	1270

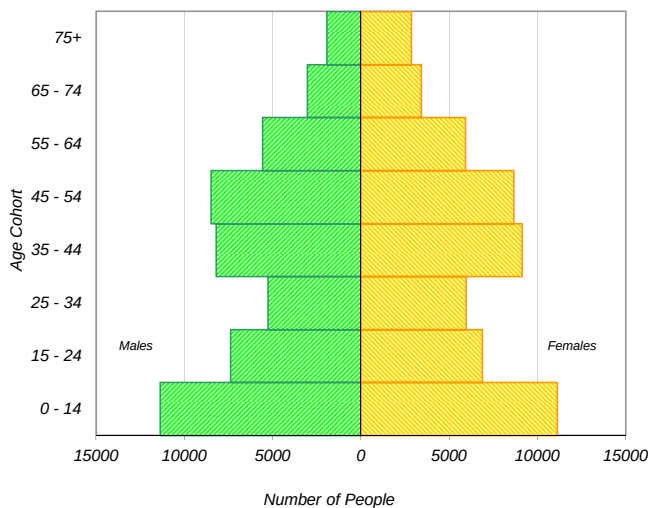


Household Size		
1 person	5,810	15%
2 persons	11,660	31%
3 persons	7,490	20%
4 persons	8,890	23%
5+ persons	4,160	11%
Total:	38,010	100%

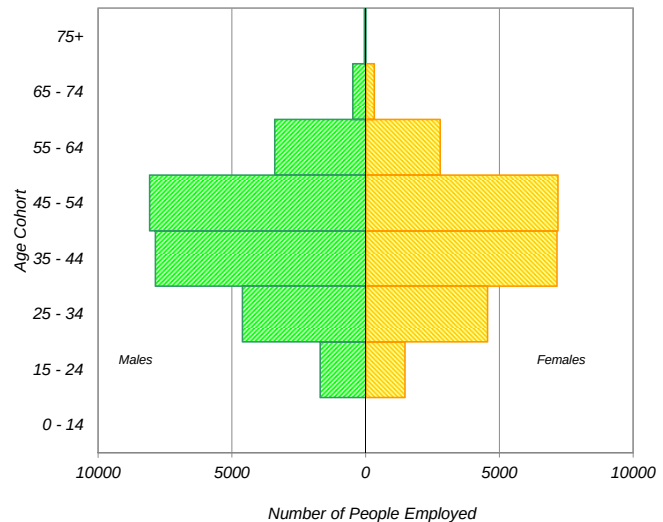
Households by Vehicle Availability		
0 vehicles	1,050	3%
1 vehicle	14,090	37%
2 vehicles	19,110	50%
3 vehicles	3,000	8%
4+ vehicles	770	2%
Total:	38,010	100%

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

Population



Employed Population

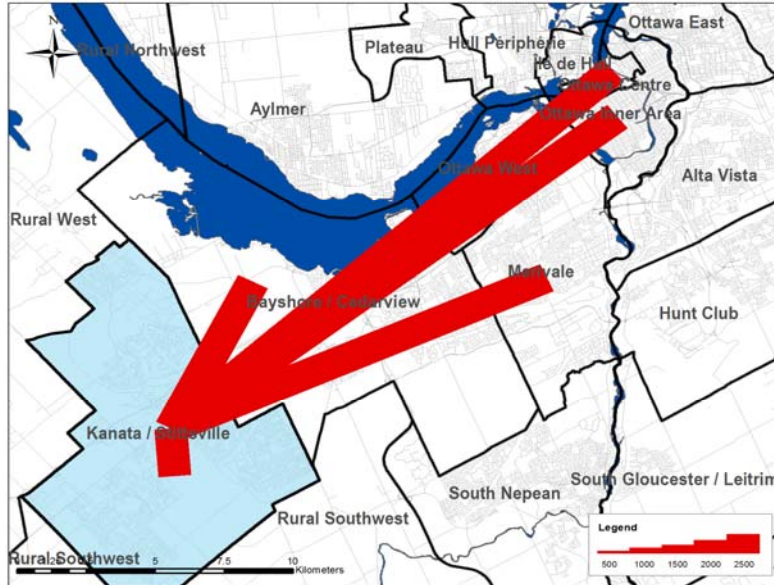


* In 2005 data was only collected for household members aged 11+ therefore these results cannot be compared to the 2011 data.

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%
Ontario Sub-Total:	55,320	98%	45,270	98%
Québec Sub-Total:	1,030	2%	740	2%
Total:	56,350	100%	46,010	100%

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%
Total:	95,030	100%	95,110	100%	161,290	100%

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%
Total:	25,980	100%	15,640	100%	30,360	100%

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%
Total:	18,950	100%	28,910	100%	37,470	100%

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%
Total:	95,020	100%	95,140	100%	161,290	100%

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%
Total:	25,970	100%	15,660	100%	30,350	100%

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%
Total:	18,960	100%	28,920	100%	37,470	100%

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%	

APPENDIX E

Collision Data

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: COPE DR @ TERRY FOX

Traffic Control: Traffic signal

Total Collisions: 24

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Mar-18, Mon,17:45	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	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-19, Fri,09:43	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-24, Mon,08:00	Clear	Other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Debris falling off vehicle	0
					North	Unknown	Unknown	Other	
2019-Jul-12, Fri,13:54	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Ditch	0
2019-Dec-23, Mon,18:57	Clear	Sideswipe	Non-fatal injury	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-14, Fri,07:42	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jul-18, Sat,23:15	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Aug-15, Sat,19:04	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Passenger van	Other motor vehicle	
2020-Dec-07, Mon,09:30	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2020-Dec-12, Sat,18:31	Rain	Turning movement	P.D. only	Wet	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Dec-17, Thu,14:50	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: COPE DR @ TERRY FOX

Traffic Control: Traffic signal

Total Collisions: 24

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Apr-16, Fri,12:36	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Jul-06, Tue,15:07	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Aug-31, Tue,11:43	Clear	SMV other	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Pedestrian	1
2021-Dec-01, Wed,08:57	Snow	Turning movement	P.D. only	Wet	South	Turning left	Delivery van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Dec-04, Sat,10:30	Snow	Turning movement	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jan-24, Mon,08:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2022-Apr-16, Sat,12:28	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-15, Thu,09:30	Clear	Rear end	P.D. only	Wet	West	Stopped	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Feb-03, Sat,17:50	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jun-02, Sun,13:18	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jul-22, Mon,15:32	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Sep-22, Sun,00:07	Clear	Angle	P.D. only	Dry	North	Going ahead	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, 2019 **To:** December 31, 2024

Location: COPE DR @ TERRY FOX

Traffic Control: Traffic signal

Total Collisions: 24

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2024-Dec-30, Mon,17:54	Rain	Turning movement	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: FERNBANK RD @ ROUNCEY RD

Traffic Control: Stop sign

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2024-May-31, Fri,22:47	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: FERNBANK RD @ SMART CENTRE SC/235 W OF TERRY FOX DR

Traffic Control: Traffic signal

Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Feb-02, Sat,19:06	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-26, Sat,10:24	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-17, Tue,10:20	Clear	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Jun-10, Fri,09:08	Clear	SMV other	P.D. only	Dry	South	Turning left	Pick-up truck	Curb	0
2022-Jul-25, Mon,18:48	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Aug-17, Wed,18:02	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Feb-19, Mon,13:45	Clear	Turning movement	P.D. only	Dry	West	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, 2019 **To:** December 31, 2024

Location: TERRY FOX DR @ FERNBANK RD

Traffic Control: Traffic signal

Total Collisions: 48

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jan-19, Sat,23:25	Snow	Rear end	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-22, Tue,15:10	Clear	Rear end	P.D. only	Packed snow	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2019-Mar-07, Thu,13:26	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-10, Mon,17:35	Rain	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jun-12, Wed,18:52	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-18, Tue,13:28	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-03, Thu,20:44	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-11, Fri,14:38	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-Dec-11, Wed,12:43	Clear	Rear end	P.D. only	Dry	West	Stopped	Passenger van	Other motor vehicle	0
					West	Turning right	Municipal transit bus	Other motor vehicle	
2020-Jan-21, Tue,08:07	Clear	Angle	P.D. only	Wet	South	Going ahead	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Feb-07, Fri,08:41	Snow	Turning movement	Non-fatal injury	Packed snow	South	Turning left	Automobile, station wagon	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, 2019 **To:** December 31, 2024

Location: TERRY FOX DR @ FERNBANK RD

Traffic Control: Traffic signal

Total Collisions: 48

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Mar-19, Thu,12:43	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Aug-21, Fri,18:35	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Dec-01, Tue,16:09	Rain	Turning movement	Non-fatal injury	Wet	South	Turning left	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Feb-02, Tue,11:50	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Feb-16, Tue,10:14	Snow	Approaching	P.D. only	Loose snow	North	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Apr-09, Fri,13:42	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2021-Apr-22, Thu,07:21	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-Apr-30, Fri,22:51	Snow	Turning movement	Non-fatal injury	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2021-Jun-24, Thu,12:20	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2021-Jul-02, Fri,17:00	Clear	Angle	P.D. only	Dry	East	Turning right	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Aug-11, Wed,13:35	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2021-Aug-31, Tue,17:00	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: TERRY FOX DR @ FERNBANK RD

Traffic Control: Traffic signal

Total Collisions: 48

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Sep-18, Sat,14:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Sep-26, Sun,14:06	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Nov-16, Tue,19:40	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2022-Feb-18, Fri,10:08	Snow	SMV other	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
2022-Mar-11, Fri,16:45	Snow	Sideswipe	P.D. only	Wet	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2022-Mar-15, Tue,14:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2022-Jun-20, Mon,17:17	Clear	Rear end	Non-fatal injury	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2022-Jun-21, Tue,13:30	Rain	Angle	P.D. only	Wet	East	Turning right	Passenger van	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2022-Aug-01, Mon,17:03	Clear	Angle	Non-fatal injury	Dry	East	Turning right	Passenger van	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2022-Nov-06, Sun,13:15	Clear	Rear end	Non-reportable	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Nov-17, Thu,16:00	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2022-Nov-28, Mon,17:35	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: TERRY FOX DR @ FERNBANK RD

Traffic Control: Traffic signal

Total Collisions: 48

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2022-Dec-17, Sat,20:10	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2023-Dec-21, Thu,08:45	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2024-Jan-30, Tue,21:30	Clear	Approaching	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-May-02, Thu,16:55	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Delivery van	Other motor vehicle	
2024-May-13, Mon,15:00	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	
2024-May-19, Sun,17:50	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2024-May-26, Sun,12:40	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jun-01, Sat,18:45	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jun-20, Thu,11:45	Clear	Turning movement	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					West	Turning left	Passenger van	Other motor vehicle	
2024-Jun-26, Wed,21:10	Rain	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2024-Jul-11, Thu,12:00	Rain	Angle	Non-fatal injury	Wet	South	Going ahead	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, 2019 **To:** December 31, 2024

Location: TERRY FOX DR @ FERNBANK RD

Traffic Control: Traffic signal

Total Collisions: 48

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2024-Aug-09, Fri,13:53	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2024-Aug-19, Mon,21:30	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: COPE DR @ ROUNCEY RD

Traffic Control: Roundabout

Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2021-Sep-30, Thu,07:45	Clear	Angle	P.D. only	Dry	North	Merging	Delivery van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

APPENDIX F

Existing Traffic Analysis

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey Existing AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	13	10.0	13	10.0	0.088	4.4	LOS A	0.3	2.8	0.40	0.25	0.40	52.6
8	T1	All MCs	29	9.0	29	9.0	0.088	4.3	LOS A	0.3	2.8	0.40	0.25	0.40	53.9
18	R2	All MCs	38	21.0	38	21.0	0.088	5.4	LOS A	0.3	2.8	0.40	0.25	0.40	52.8
Approach			79	14.9	79	14.9	0.088	4.8	LOS A	0.3	2.8	0.40	0.25	0.40	53.1
East: Cope															
1	L2	All MCs	8	0.0	8	0.0	0.109	3.7	LOS A	0.5	3.7	0.26	0.12	0.26	54.3
6	T1	All MCs	91	6.0	91	6.0	0.109	4.1	LOS A	0.5	3.7	0.26	0.12	0.26	55.1
16	R2	All MCs	29	0.0	29	0.0	0.109	3.7	LOS A	0.5	3.7	0.26	0.12	0.26	54.9
Approach			128	4.3	128	4.3	0.109	4.0	LOS A	0.5	3.7	0.26	0.12	0.26	55.0
North: Rouncey															
7	L2	All MCs	40	10.0	40	10.0	0.139	4.5	LOS A	0.6	4.9	0.27	0.13	0.27	52.7
4	T1	All MCs	54	3.0	54	3.0	0.139	4.1	LOS A	0.6	4.9	0.27	0.13	0.27	54.2
14	R2	All MCs	65	8.0	65	8.0	0.139	4.4	LOS A	0.6	4.9	0.27	0.13	0.27	53.5
Approach			159	6.8	159	6.8	0.139	4.3	LOS A	0.6	4.9	0.27	0.13	0.27	53.5
West: Cope															
5	L2	All MCs	65	10.0	65	10.0	0.204	5.1	LOS A	1.0	7.8	0.28	0.13	0.28	52.4
2	T1	All MCs	146	2.0	146	2.0	0.204	4.6	LOS A	1.0	7.8	0.28	0.13	0.28	53.8
12	R2	All MCs	29	9.0	29	9.0	0.204	5.1	LOS A	1.0	7.8	0.28	0.13	0.28	53.1
Approach			240	5.0	240	5.0	0.204	4.8	LOS A	1.0	7.8	0.28	0.13	0.28	53.3
All Vehicles			605	6.6	605	6.6	0.204	4.5	LOS A	1.0	7.8	0.29	0.14	0.29	53.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

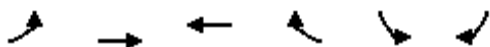
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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	614	435	62	25	39
Future Volume (vph)	40	614	435	62	25	39
Satd. Flow (prot)	1710	1731	1698	1500	1523	0
Flt Permitted	0.495				0.981	
Satd. Flow (perm)	890	1731	1698	1466	1523	0
Satd. Flow (RTOR)				67	42	
Lane Group Flow (vph)	43	660	468	67	69	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	Max	None	
Act Effect Green (s)	49.4	49.4	49.4	49.4	7.0	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.12	
v/c Ratio	0.06	0.47	0.34	0.06	0.33	
Control Delay	3.5	5.3	4.2	1.3	17.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.5	5.3	4.2	1.3	17.5	
LOS	A	A	A	A	B	
Approach Delay		5.2	3.8		17.5	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.2	29.0	17.5	0.0	3.4	
Queue Length 95th (m)	4.4	61.2	37.1	3.1	12.3	
Internal Link Dist (m)		506.8	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	726	1412	1385	1208	611	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.47	0.34	0.06	0.11	
Intersection Summary						
Cycle Length: 69						
Actuated Cycle Length: 60.5						
Natural Cycle: 60						
Control Type: Actuated-Uncoordinated						
Maximum v/c Ratio: 0.47						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Intersection Signal Delay: 5.3

Intersection LOS: A

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	275	247	2	178	83	224	267	7	70	251	56
Future Volume (vph)	102	275	247	2	178	83	224	267	7	70	251	56
Satd. Flow (prot)	1644	1800	1485	1710	1782	1378	1555	1757	0	1660	1765	1378
Flt Permitted	0.950			0.578			0.408			0.578		
Satd. Flow (perm)	1619	1800	1453	1039	1782	1317	668	1757	0	1007	1765	1378
Satd. Flow (RTOR)			268			190		2				114
Lane Group Flow (vph)	111	299	268	2	193	90	243	298	0	76	273	61
Turn Type	Prot	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases			4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.3
Total Split (s)	15.0	48.0	48.0	33.0	33.0	33.0	11.0	42.0		31.0	31.0	15.0
Total Split (%)	16.7%	53.3%	53.3%	36.7%	36.7%	36.7%	12.2%	46.7%		34.4%	34.4%	16.7%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	8.4	31.0	31.0	16.3	16.3	16.3	46.6	46.6		29.0	29.0	43.6
Actuated g/C Ratio	0.09	0.34	0.34	0.18	0.18	0.18	0.52	0.52		0.32	0.32	0.48
v/c Ratio	0.73	0.48	0.40	0.01	0.60	0.23	0.53	0.33		0.23	0.48	0.08
Control Delay	66.9	24.9	4.0	25.5	40.5	1.3	21.5	15.5		27.3	29.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.9	24.9	4.0	25.5	40.5	1.3	21.5	15.5		27.3	29.6	0.7
LOS	E	C	A	C	D	A	C	B		C	C	A
Approach Delay		23.5			28.0			18.2			24.8	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	19.9	43.0	0.0	0.3	33.1	0.0	23.4	28.9		10.6	41.5	0.0
Queue Length 95th (m)	#45.7	53.1	13.0	1.9	46.6	0.0	#63.3	60.7		23.2	68.2	1.4
Internal Link Dist (m)		219.3			255.4			132.6			159.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	158	836	818	309	530	525	458	910		324	568	729
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.70	0.36	0.33	0.01	0.36	0.17	0.53	0.33		0.23	0.48	0.08

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 23.0

Intersection LOS: C

Intersection Capacity Utilization 68.0%

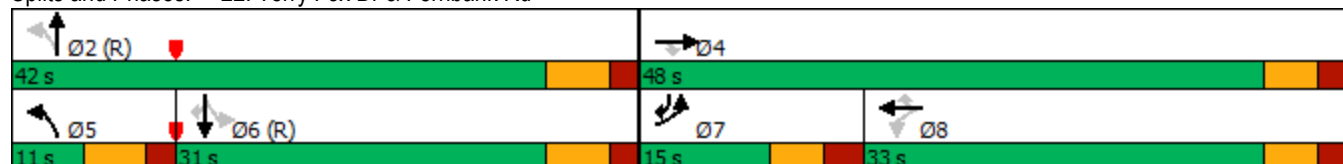
ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	111	42	55	83	203	25	459	46	200	411	59
Future Volume (vph)	88	111	42	55	83	203	25	459	46	200	411	59
Satd. Flow (prot)	1598	1679	0	1629	1501	0	1710	1669	0	1693	1682	1417
Flt Permitted	0.178			0.651			0.504			0.141		
Satd. Flow (perm)	299	1679	0	1109	1501	0	903	1669	0	251	1682	1373
Satd. Flow (RTOR)		22			107			5				90
Lane Group Flow (vph)	96	167	0	60	311	0	27	549	0	217	447	64
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	28.2	28.2
Total Split (s)	21.0	55.0		34.0	34.0		45.0	45.0		10.0	55.0	55.0
Total Split (%)	19.1%	50.0%		30.9%	30.9%		40.9%	40.9%		9.1%	50.0%	50.0%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	38.3	37.8		20.6	20.6		38.8	38.8		59.9	59.7	59.7
Actuated g/C Ratio	0.35	0.34		0.19	0.19		0.35	0.35		0.54	0.54	0.54
v/c Ratio	0.40	0.28		0.29	0.85		0.08	0.93		0.65	0.49	0.08
Control Delay	27.4	21.9		39.7	48.2		24.8	58.1		32.7	20.1	2.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	27.4	21.9		39.7	48.2		24.8	58.1		32.7	20.1	2.0
LOS	C	C		D	D		C	E		C	C	A
Approach Delay		23.9			46.8			56.6			22.3	
Approach LOS		C			D			E			C	
Queue Length 50th (m)	14.7	23.1		11.7	45.6		4.0	117.4		24.9	61.3	0.0
Queue Length 95th (m)	23.0	34.2		22.8	74.5		10.7	#186.8		#90.6	108.9	4.4
Internal Link Dist (m)		381.1			64.2			98.6			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	283	755		279	458		318	591		332	913	786
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	0.34	0.22		0.22	0.68		0.08	0.93		0.65	0.49	0.08

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 22.5 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Lanes, Volumes, Timings 25: Terry Fox Dr & Cope Dr

11-28-2025

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.4

Intersection LOS: D

Intersection Capacity Utilization 83.7%

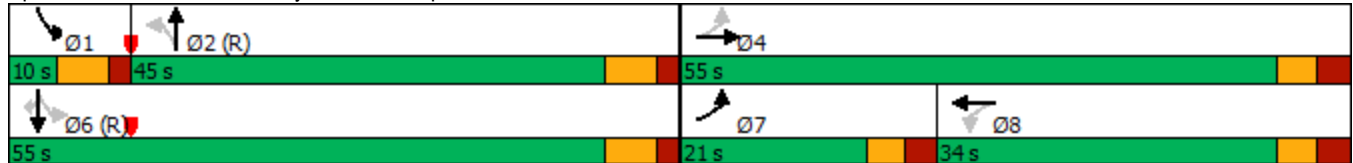
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

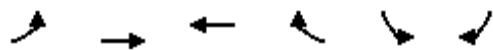
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	581	426	43	57	25
Future Volume (Veh/h)	6	581	426	43	57	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	6	593	435	44	58	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	479				1040	435
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	479				1040	435
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				77	96
cM capacity (veh/h)	1094				250	625
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	6	593	435	44	84	
Volume Left	6	0	0	0	58	
Volume Right	0	0	0	44	26	
cSH	1094	1700	1700	1700	307	
Volume to Capacity	0.01	0.35	0.26	0.03	0.27	
Queue Length 95th (m)	0.1	0.0	0.0	0.0	8.7	
Control Delay (s)	8.3	0.0	0.0	0.0	21.1	
Lane LOS	A				C	
Approach Delay (s)	0.1		0.0		21.1	
Approach LOS					C	
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			43.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↙	
Traffic Volume (veh/h)	275	3	15	162	3	31
Future Volume (Veh/h)	275	3	15	162	3	31
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	302	3	16	178	3	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			305		514	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			305		514	304
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		99	95
cM capacity (veh/h)			1228		518	741
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	305	194	37			
Volume Left	0	16	3			
Volume Right	3	0	34			
cSH	1700	1228	716			
Volume to Capacity	0.18	0.01	0.05			
Queue Length 95th (m)	0.0	0.3	1.3			
Control Delay (s)	0.0	0.8	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			32.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	10	7	55	3	17	67
Future Volume (Veh/h)	10	7	55	3	17	67
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	14	10	80	4	25	97
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	229	82			84	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	229	82			84	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	98	99			98	
cM capacity (veh/h)	751	945			1526	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	84	122			
Volume Left	14	0	25			
Volume Right	10	4	0			
cSH	821	1700	1526			
Volume to Capacity	0.03	0.05	0.02			
Queue Length 95th (m)	0.7	0.0	0.4			
Control Delay (s)	9.5	0.0	1.6			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	1.6			
Approach LOS	A					
Intersection Summary						
Average Delay		1.9				
Intersection Capacity Utilization		21.4%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy

11-28-2025

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	0	0	21	4	2
Future Volume (Veh/h)	13	0	0	21	4	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	0	0	23	4	2
Pedestrians	13					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	41	18	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	41	18	19			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	965	1055	1593			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	14	23	6			
Volume Left	14	0	0			
Volume Right	0	0	2			
cSH	965	1593	1700			
Volume to Capacity	0.01	0.00	0.00			
Queue Length 95th (m)	0.4	0.0	0.0			
Control Delay (s)	8.8	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	8.8	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		2.9				
Intersection Capacity Utilization		16.8%		ICU Level of Service		A
Analysis Period (min)		15				

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey Existing PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	11	30.0	11	30.0	0.081	6.2	LOS A	0.3	2.6	0.37	0.23	0.37	52.1
8	T1	All MCs	38	9.0	38	9.0	0.081	4.3	LOS A	0.3	2.6	0.37	0.23	0.37	54.4
18	R2	All MCs	30	4.0	30	4.0	0.081	3.9	LOS A	0.3	2.6	0.37	0.23	0.37	54.1
Approach			79	10.0	79	10.0	0.081	4.4	LOS A	0.3	2.6	0.37	0.23	0.37	54.0
East: Cope															
1	L2	All MCs	17	20.0	17	20.0	0.181	5.7	LOS A	0.9	6.7	0.27	0.12	0.27	52.6
6	T1	All MCs	136	4.0	136	4.0	0.181	4.5	LOS A	0.9	6.7	0.27	0.12	0.27	54.6
16	R2	All MCs	61	2.0	61	2.0	0.181	4.4	LOS A	0.9	6.7	0.27	0.12	0.27	54.3
Approach			214	4.7	214	4.7	0.181	4.6	LOS A	0.9	6.7	0.27	0.12	0.27	54.4
North: Rouncey															
7	L2	All MCs	34	10.0	34	10.0	0.095	4.5	LOS A	0.4	3.2	0.33	0.18	0.33	52.8
4	T1	All MCs	30	0.0	30	0.0	0.095	3.8	LOS A	0.4	3.2	0.33	0.18	0.33	54.3
14	R2	All MCs	41	0.0	41	0.0	0.095	3.8	LOS A	0.4	3.2	0.33	0.18	0.33	53.9
Approach			105	3.2	105	3.2	0.095	4.0	LOS A	0.4	3.2	0.33	0.18	0.33	53.6
West: Cope															
5	L2	All MCs	45	8.0	45	8.0	0.166	4.6	LOS A	0.8	6.1	0.24	0.10	0.24	52.9
2	T1	All MCs	143	4.0	143	4.0	0.166	4.3	LOS A	0.8	6.1	0.24	0.10	0.24	54.3
12	R2	All MCs	12	0.0	12	0.0	0.166	4.1	LOS A	0.8	6.1	0.24	0.10	0.24	54.0
Approach			200	4.7	200	4.7	0.166	4.3	LOS A	0.8	6.1	0.24	0.10	0.24	53.9
All Vehicles			599	5.1	599	5.1	0.181	4.4	LOS A	0.9	6.7	0.28	0.14	0.28	54.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

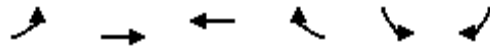
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Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	70	435	734	154	113	139
Future Volume (vph)	70	435	734	154	113	139
Satd. Flow (prot)	1710	1782	1782	1530	1628	0
Flt Permitted	0.247				0.978	
Satd. Flow (perm)	445	1782	1782	1530	1628	0
Satd. Flow (RTOR)				109	90	
Lane Group Flow (vph)	77	478	807	169	277	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	27.5	
Total Split (s)	45.0	45.0	45.0	45.0	29.0	
Total Split (%)	60.8%	60.8%	60.8%	60.8%	39.2%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	4.3	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	Max	None	
Act Effect Green (s)	41.0	41.0	41.0	41.0	12.9	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.20	
v/c Ratio	0.27	0.42	0.71	0.17	0.69	
Control Delay	9.7	8.0	13.5	3.0	24.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	8.0	13.5	3.0	24.7	
LOS	A	A	B	A	C	
Approach Delay		8.2	11.7		24.7	
Approach LOS		A	B		C	
Queue Length 50th (m)	3.4	24.2	54.6	2.3	20.4	
Queue Length 95th (m)	13.7	56.2	#135.4	11.0	42.4	
Internal Link Dist (m)		506.8	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	285	1143	1143	1020	685	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.42	0.71	0.17	0.40	

Intersection Summary

Cycle Length: 74

Actuated Cycle Length: 63.9

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Intersection Signal Delay: 12.6

Intersection LOS: B

Intersection Capacity Utilization 77.8%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

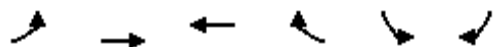
Splits and Phases: 20: Fernbank Rd & Walmart



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	531	704	88	38	33
Future Volume (Veh/h)	14	531	704	88	38	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	15	571	757	95	41	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	852				1358	757
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	852				1358	757
tC, single (s)	4.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.7	3.3
p0 queue free %	98				72	91
cM capacity (veh/h)	795				144	406
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	15	571	757	95	76	
Volume Left	15	0	0	0	41	
Volume Right	0	0	0	95	35	
cSH	795	1700	1700	1700	205	
Volume to Capacity	0.02	0.34	0.45	0.06	0.37	
Queue Length 95th (m)	0.5	0.0	0.0	0.0	12.8	
Control Delay (s)	9.6	0.0	0.0	0.0	32.5	
Lane LOS	A				D	
Approach Delay (s)	0.2		0.0		32.5	
Approach LOS					D	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			50.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↙	
Traffic Volume (veh/h)	265	2	39	311	1	38
Future Volume (Veh/h)	265	2	39	311	1	38
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	276	2	41	324	1	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			278		683	277
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		683	277
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	95
cM capacity (veh/h)			1296		405	767
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	278	365	41			
Volume Left	0	41	1			
Volume Right	2	0	40			
cSH	1700	1296	750			
Volume to Capacity	0.16	0.03	0.05			
Queue Length 95th (m)	0.0	0.8	1.4			
Control Delay (s)	0.0	1.2	10.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.1			
Approach LOS			B			
Intersection Summary						
Average Delay		1.2				
Intersection Capacity Utilization		47.7%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	3	110	10	17	62
Future Volume (Veh/h)	3	3	110	10	17	62
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	4	4	149	14	23	84
Pedestrians	14		5			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	305	170			177	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	170			177	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	100			98	
cM capacity (veh/h)	669	869			1359	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	8	163	107			
Volume Left	4	0	23			
Volume Right	4	14	0			
cSH	756	1700	1359			
Volume to Capacity	0.01	0.10	0.02			
Queue Length 95th (m)	0.3	0.0	0.4			
Control Delay (s)	9.8	0.0	1.8			
Lane LOS	A		A			
Approach Delay (s)	9.8	0.0	1.8			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			21.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy

11-28-2025



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	0	0	28	21	12
Future Volume (Veh/h)	7	0	0	28	21	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	0	0	31	23	13
Pedestrians	16			2	1	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	78	48	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	48	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	917	1012	1546			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	8	31	36			
Volume Left	8	0	0			
Volume Right	0	0	13			
cSH	917	1546	1700			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (m)	0.2	0.0	0.0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			18.1%	ICU Level of Service		A
Analysis Period (min)			15			

APPENDIX G

Future Background Traffic Analysis

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey FBG AM 2028 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	14	10.0	14	10.0	0.095	4.6	LOS A	0.3	3.0	0.41	0.27	0.41	52.5
8	T1	All MCs	30	9.0	30	9.0	0.095	4.5	LOS A	0.3	3.0	0.41	0.27	0.41	53.7
18	R2	All MCs	40	21.0	40	21.0	0.095	5.5	LOS A	0.3	3.0	0.41	0.27	0.41	52.7
Approach			84	14.9	84	14.9	0.095	5.0	LOS A	0.3	3.0	0.41	0.27	0.41	53.0
East: Cope															
1	L2	All MCs	9	0.0	9	0.0	0.116	3.8	LOS A	0.5	4.0	0.27	0.13	0.27	54.2
6	T1	All MCs	96	6.0	96	6.0	0.116	4.2	LOS A	0.5	4.0	0.27	0.13	0.27	55.0
16	R2	All MCs	30	0.0	30	0.0	0.116	3.8	LOS A	0.5	4.0	0.27	0.13	0.27	54.8
Approach			135	4.3	135	4.3	0.116	4.0	LOS A	0.5	4.0	0.27	0.13	0.27	54.9
North: Rouncey															
7	L2	All MCs	43	10.0	43	10.0	0.147	4.6	LOS A	0.6	5.2	0.29	0.14	0.29	52.6
4	T1	All MCs	55	3.0	55	3.0	0.147	4.2	LOS A	0.6	5.2	0.29	0.14	0.29	54.1
14	R2	All MCs	69	8.0	69	8.0	0.147	4.5	LOS A	0.6	5.2	0.29	0.14	0.29	53.4
Approach			166	6.9	166	6.9	0.147	4.4	LOS A	0.6	5.2	0.29	0.14	0.29	53.4
West: Cope															
5	L2	All MCs	69	10.0	69	10.0	0.217	5.3	LOS A	1.1	8.4	0.29	0.13	0.29	52.2
2	T1	All MCs	155	2.0	155	2.0	0.217	4.7	LOS A	1.1	8.4	0.29	0.13	0.29	53.7
12	R2	All MCs	30	9.0	30	9.0	0.217	5.2	LOS A	1.1	8.4	0.29	0.13	0.29	53.0
Approach			254	5.0	254	5.0	0.217	4.9	LOS A	1.1	8.4	0.29	0.13	0.29	53.2
All Vehicles			639	6.6	639	6.6	0.217	4.6	LOS A	1.1	8.4	0.30	0.15	0.30	53.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

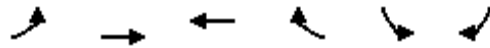
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Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	42	652	462	66	27	41
Future Volume (vph)	42	652	462	66	27	41
Satd. Flow (prot)	1710	1731	1698	1500	1525	0
Flt Permitted	0.497				0.981	
Satd. Flow (perm)	894	1731	1698	1466	1525	0
Satd. Flow (RTOR)				66	41	
Confl. Peds. (#/hr)	1			1		
Confl. Bikes (#/hr)				1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	6%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	652	462	66	68	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	57.1	57.1	57.1	57.1	7.2	
Actuated g/C Ratio	0.83	0.83	0.83	0.83	0.10	
v/c Ratio	0.06	0.46	0.33	0.05	0.35	
Control Delay	3.2	4.9	3.9	1.1	19.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.2	4.9	3.9	1.1	19.7	
LOS	A	A	A	A	B	
Approach Delay		4.8	3.5		19.7	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.2	28.6	17.4	0.0	3.5	
Queue Length 95th (m)	4.2	59.7	36.4	3.0	13.7	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	739	1431	1404	1223	537	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.46	0.33	0.05	0.13	

Intersection Summary

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Cycle Length: 69

Actuated Cycle Length: 69

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 5.0

Intersection LOS: A

Intersection Capacity Utilization 50.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	292	262	2	189	88	238	285	7	74	270	59
Future Volume (vph)	108	292	262	2	189	88	238	285	7	74	270	59
Satd. Flow (prot)	1644	1800	1485	1710	1782	1378	1555	1757	0	1660	1765	1378
Flt Permitted	0.381			0.581			0.443			0.581		
Satd. Flow (perm)	651	1800	1453	1045	1782	1317	725	1757	0	1013	1765	1378
Satd. Flow (RTOR)			262			190		2				114
Confl. Peds. (#/hr)	12		1	1		12			2	2		
Confl. Bikes (#/hr)						4			1			
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 (%)	4%	0%	3%	0%	1%	11%	10%	2%	0%	3%	2%	11%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	292	262	2	189	88	238	292	0	74	270	59
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.3
Total Split (s)	11.3	44.3	44.3	33.0	33.0	33.0	16.0	45.7		29.7	29.7	11.3
Total Split (%)	12.6%	49.2%	49.2%	36.7%	36.7%	36.7%	17.8%	50.8%		33.0%	33.0%	12.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	24.6	24.7	24.7	15.6	15.6	15.6	52.9	52.9		34.5	34.5	45.7
Actuated g/C Ratio	0.27	0.27	0.27	0.17	0.17	0.17	0.59	0.59		0.38	0.38	0.51
v/c Ratio	0.47	0.59	0.45	0.01	0.61	0.23	0.44	0.28		0.19	0.40	0.08
Control Delay	30.4	32.4	5.5	28.5	42.8	1.4	13.3	11.3		24.8	25.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	30.4	32.4	5.5	28.5	42.8	1.4	13.3	11.3		24.8	25.6	0.6
LOS	C	C	A	C	D	A	B	B		C	C	A
Approach Delay		21.4			29.6			12.2			21.8	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	14.9	44.8	0.0	0.3	32.5	0.0	20.4	25.2		9.1	36.3	0.0
Queue Length 95th (m)	25.6	64.4	15.9	2.2	50.8	0.0	39.5	46.9		23.1	68.9	1.2
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	232	762	766	311	530	525	543	1034		388	676	755
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.47	0.38	0.34	0.01	0.36	0.17	0.44	0.28		0.19	0.40	0.08
Intersection Summary												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 20.1

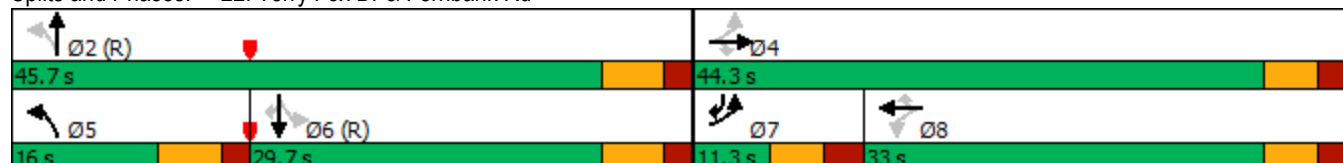
Intersection LOS: C

Intersection Capacity Utilization 70.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	118	45	62	88	215	27	488	50	224	436	63
Future Volume (vph)	93	118	45	62	88	215	27	488	50	224	436	63
Satd. Flow (prot)	1598	1679	0	1629	1502	0	1710	1669	0	1693	1682	1417
Flt Permitted	0.178			0.654			0.509			0.261		
Satd. Flow (perm)	299	1679	0	1114	1502	0	911	1669	0	465	1682	1374
Satd. Flow (RTOR)		19			105			6				90
Confl. Peds. (#/hr)	2		4	4		2	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
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 (%)	7%	2%	2%	5%	8%	4%	0%	5%	17%	1%	7%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	163	0	62	303	0	27	538	0	224	436	63
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	11.0	43.4		32.4	32.4		49.6	49.6		17.0	66.6	66.6
Total Split (%)	10.0%	39.5%		29.5%	29.5%		45.1%	45.1%		15.5%	60.5%	60.5%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	29.2	28.7		19.9	19.9		52.2	52.2		69.0	68.8	68.8
Actuated g/C Ratio	0.27	0.26		0.18	0.18		0.47	0.47		0.63	0.63	0.63
v/c Ratio	0.66	0.36		0.31	0.85		0.06	0.68		0.55	0.41	0.07
Control Delay	52.2	29.2		41.0	49.1		20.7	30.5		15.9	13.7	1.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	52.2	29.2		41.0	49.1		20.7	30.5		15.9	13.7	1.3
LOS	D	C		D	D		C	C		B	B	A
Approach Delay		37.6			47.7			30.0			13.3	
Approach LOS		D			D			C			B	
Queue Length 50th (m)	15.7	25.3		12.2	44.1		3.5	98.7		21.9	50.2	0.0
Queue Length 95th (m)	#27.9	41.1		23.7	73.8		9.9	#163.7		39.5	83.6	3.4
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	140	578		264	436		432	795		420	1052	893
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	0.66	0.28		0.23	0.69		0.06	0.68		0.53	0.41	0.07
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 110

Actuated Cycle Length: 110

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.1

Intersection LOS: C

Intersection Capacity Utilization 88.3%

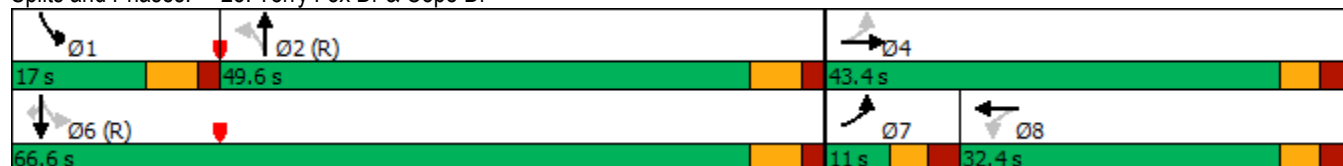
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

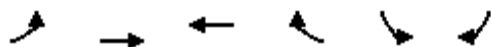


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	616	452	45	61	26
Future Volume (Veh/h)	7	616	452	45	61	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	616	452	45	61	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	497				1082	452
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	497				1082	452
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				74	96
cM capacity (veh/h)	1077				236	612
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	7	616	452	45	87	
Volume Left	7	0	0	0	61	
Volume Right	0	0	0	45	26	
cSH	1077	1700	1700	1700	289	
Volume to Capacity	0.01	0.36	0.27	0.03	0.30	
Queue Length 95th (m)	0.2	0.0	0.0	0.0	9.9	
Control Delay (s)	8.4	0.0	0.0	0.0	22.7	
Lane LOS	A				C	
Approach Delay (s)	0.1		0.0		22.7	
Approach LOS					C	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			46.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

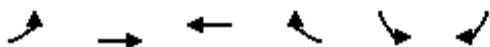


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	694	503	0	0	0
Future Volume (Veh/h)	0	694	503	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	754	547	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	547				1301	547
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	473				1285	473
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1010				168	549
Direction, Lane #	EB 1	WB 1				
Volume Total	754	547				
Volume Left	0	0				
Volume Right	0	0				
cSH	1010	1700				
Volume to Capacity	0.00	0.32				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		41.9%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	694	503	0	0	0
Future Volume (Veh/h)	0	694	503	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	754	547	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	547				1301	547
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	465				1284	465
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1010				168	550
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	754	547	0	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1010	1700	1700	1700		
Volume to Capacity	0.00	0.32	0.00	0.00		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			41.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↙	
Traffic Volume (veh/h)	292	3	16	172	3	33
Future Volume (Veh/h)	292	3	16	172	3	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	292	3	16	172	3	33
Pedestrians	1				9	
Lane Width (m)	3.6				3.6	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			304		508	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			304		508	302
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		99	96
cM capacity (veh/h)			1220		517	736
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	295	188	36			
Volume Left	0	16	3			
Volume Right	3	0	33			
cSH	1700	1220	711			
Volume to Capacity	0.17	0.01	0.05			
Queue Length 95th (m)	0.0	0.3	1.3			
Control Delay (s)	0.0	0.8	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			33.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	7	58	3	18	71
Future Volume (Veh/h)	11	7	58	3	18	71
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	7	58	3	18	71
Pedestrians	22		3			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	2		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	192	82			83	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	82			83	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	776	929			1499	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	18	61	89			
Volume Left	11	0	18			
Volume Right	7	3	0			
cSH	829	1700	1499			
Volume to Capacity	0.02	0.04	0.01			
Queue Length 95th (m)	0.5	0.0	0.3			
Control Delay (s)	9.4	0.0	1.6			
Lane LOS	A		A			
Approach Delay (s)	9.4	0.0	1.6			
Approach LOS	A					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		21.7%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	0	0	0	0	0	22	0	0	4	2
Future Volume (Veh/h)	14	0	0	0	0	0	0	22	0	0	4	2
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	14	0	0	0	0	0	0	22	0	0	4	2
Pedestrians	13			1								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	1			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	40	41	18	28	42	23	19				23	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	40	41	18	28	42	23	19				23	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	100	100	100	100	100				100	
cM capacity (veh/h)	950	845	1055	977	844	1059	1593				1604	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	0	22	6								
Volume Left	14	0	0	0								
Volume Right	0	0	0	2								
cSH	950	1700	1593	1604								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.4	0.0	0.0	0.0								
Control Delay (s)	8.8	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	8.8	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				2.9								
Intersection Capacity Utilization				16.8%	ICU Level of Service				A			
Analysis Period (min)				15								

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey FBG AM 2033 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	15	10.0	15	10.0	0.109	4.8	LOS A	0.4	3.4	0.44	0.30	0.44	52.3
8	T1	All MCs	34	9.0	34	9.0	0.109	4.8	LOS A	0.4	3.4	0.44	0.30	0.44	53.5
18	R2	All MCs	44	21.0	44	21.0	0.109	5.9	LOS A	0.4	3.4	0.44	0.30	0.44	52.4
Approach			93	14.8	93	14.8	0.109	5.3	LOS A	0.4	3.4	0.44	0.30	0.44	52.8
East: Cope															
1	L2	All MCs	9	0.0	9	0.0	0.130	3.9	LOS A	0.6	4.5	0.29	0.15	0.29	54.1
6	T1	All MCs	106	6.0	106	6.0	0.130	4.3	LOS A	0.6	4.5	0.29	0.15	0.29	54.9
16	R2	All MCs	34	0.0	34	0.0	0.130	3.9	LOS A	0.6	4.5	0.29	0.15	0.29	54.7
Approach			149	4.3	149	4.3	0.130	4.2	LOS A	0.6	4.5	0.29	0.15	0.29	54.8
North: Rouncey															
7	L2	All MCs	48	10.0	48	10.0	0.165	4.9	LOS A	0.7	6.0	0.31	0.15	0.31	52.5
4	T1	All MCs	61	3.0	61	3.0	0.165	4.4	LOS A	0.7	6.0	0.31	0.15	0.31	53.9
14	R2	All MCs	76	8.0	76	8.0	0.165	4.7	LOS A	0.7	6.0	0.31	0.15	0.31	53.2
Approach			185	6.9	185	6.9	0.165	4.6	LOS A	0.7	6.0	0.31	0.15	0.31	53.3
West: Cope															
5	L2	All MCs	76	10.0	76	10.0	0.243	5.6	LOS A	1.2	9.6	0.31	0.15	0.31	52.0
2	T1	All MCs	171	2.0	171	2.0	0.243	5.0	LOS A	1.2	9.6	0.31	0.15	0.31	53.5
12	R2	All MCs	34	9.0	34	9.0	0.243	5.6	LOS A	1.2	9.6	0.31	0.15	0.31	52.7
Approach			281	5.0	281	5.0	0.243	5.3	LOS A	1.2	9.6	0.31	0.15	0.31	53.0
All Vehicles			708	6.6	708	6.6	0.243	4.9	LOS A	1.2	9.6	0.32	0.17	0.32	53.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

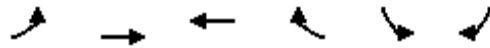
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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	525	779	163	120	148
Future Volume (vph)	74	525	779	163	120	148
Satd. Flow (prot)	1710	1782	1782	1530	1628	0
Flt Permitted	0.265				0.978	
Satd. Flow (perm)	477	1782	1782	1530	1628	0
Satd. Flow (RTOR)				109	87	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	525	779	163	268	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	45.0	45.0	45.0	45.0	29.0	
Total Split (%)	60.8%	60.8%	60.8%	60.8%	39.2%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	48.5	48.5	48.5	48.5	13.9	
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.19	
v/c Ratio	0.24	0.45	0.67	0.16	0.71	
Control Delay	9.4	8.9	13.0	3.0	28.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.4	8.9	13.0	3.0	28.7	
LOS	A	A	B	A	C	
Approach Delay		8.9	11.3		28.7	
Approach LOS		A	B		C	
Queue Length 50th (m)	3.8	32.4	60.3	2.5	24.6	
Queue Length 95th (m)	13.5	68.9	130.0	11.1	43.9	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	312	1167	1167	1039	568	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.24	0.45	0.67	0.16	0.47	
Intersection Summary						
Cycle Length: 74						
Actuated Cycle Length: 74						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Offset: 22.5 (30%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 13.1

Intersection LOS: B

Intersection Capacity Utilization 82.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	316	249	4	424	133	416	500	22	154	423	70
Future Volume (vph)	102	316	249	4	424	133	416	500	22	154	423	70
Satd. Flow (prot)	1693	1782	1485	1710	1800	1485	1676	1785	0	1693	1748	1485
Flt Permitted	0.123			0.569			0.186			0.471		
Satd. Flow (perm)	217	1782	1435	1015	1800	1399	328	1785	0	827	1748	1438
Satd. Flow (RTOR)			249			156		3				93
Confl. Peds. (#/hr)	19		7	7		19	5		13	13		5
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 (%)	1%	1%	3%	0%	0%	3%	2%	0%	0%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	316	249	4	424	133	416	522	0	154	423	70
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.2	33.2	33.2	33.2	33.2	11.2	29.2		29.2	29.2	11.3
Total Split (s)	11.4	45.4	45.4	34.0	34.0	34.0	27.0	64.6		37.6	37.6	11.4
Total Split (%)	10.4%	41.3%	41.3%	30.9%	30.9%	30.9%	24.5%	58.7%		34.2%	34.2%	10.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	38.6	38.7	38.7	27.3	27.3	27.3	58.9	58.9		31.5	31.5	36.5
Actuated g/C Ratio	0.35	0.35	0.35	0.25	0.25	0.25	0.54	0.54		0.29	0.29	0.33
v/c Ratio	0.71	0.50	0.37	0.02	0.95	0.29	0.96	0.55		0.65	0.85	0.13
Control Delay	52.9	31.3	4.9	31.2	73.1	5.1	57.7	19.5		34.6	39.8	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	52.9	31.3	4.9	31.2	73.1	5.1	57.7	19.5		34.6	39.8	1.0
LOS	D	C	A	C	E	A	E	B		C	D	A
Approach Delay		24.7			56.7			36.4			34.4	
Approach LOS		C			E			D			C	
Queue Length 50th (m)	15.7	55.3	0.0	0.7	94.0	0.0	65.8	74.3		25.9	92.2	0.4
Queue Length 95th (m)	#32.8	82.9	16.8	3.6	#154.9	11.0	#130.3	106.4		m#52.2	#140.8	m0.6
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	144	635	671	256	454	470	435	956		237	499	541
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.71	0.50	0.37	0.02	0.93	0.28	0.96	0.55		0.65	0.85	0.13
Intersection Summary												
Cycle Length: 110												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Actuated Cycle Length: 110

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 37.2

Intersection LOS: D

Intersection Capacity Utilization 98.1%

ICU Level of Service F

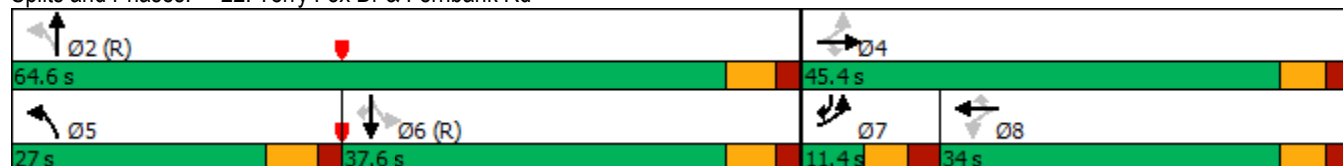
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	158	51	95	168	249	70	561	41	269	597	111
Future Volume (vph)	167	158	51	95	168	249	70	561	41	269	597	111
Satd. Flow (prot)	1660	1634	0	1644	1591	0	1613	1713	0	1693	1748	1485
Flt Permitted	0.126			0.627			0.437			0.102		
Satd. Flow (perm)	220	1634	0	1054	1591	0	732	1713	0	182	1748	1406
Satd. Flow (RTOR)		16			64			4				111
Confl. Peds. (#/hr)	1		18	18		1	12		2	2		12
Confl. Bikes (#/hr)			6			6			2			6
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%	1%	15%	4%	1%	1%	6%	3%	15%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	209	0	95	417	0	70	602	0	269	597	111
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		11.0	28.2	28.2
Total Split (s)	12.7	45.0		32.3	32.3		46.0	46.0		19.0	65.0	65.0
Total Split (%)	11.5%	40.9%		29.4%	29.4%		41.8%	41.8%		17.3%	59.1%	59.1%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	39.2	38.7		26.0	26.0		39.8	39.8		59.0	58.8	58.8
Actuated g/C Ratio	0.36	0.35		0.24	0.24		0.36	0.36		0.54	0.53	0.53
v/c Ratio	0.99	0.36		0.38	0.98		0.27	0.97		0.97	0.64	0.14
Control Delay	99.2	26.4		40.6	76.2		21.2	53.0		75.5	22.0	2.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	99.2	26.4		40.6	76.2		21.2	53.0		75.5	22.0	2.8
LOS	F	C		D	E		C	D		E	C	A
Approach Delay		58.8			69.6			49.7			34.6	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	26.7	31.9		18.1	81.8		7.2	131.1		42.6	91.1	0.0
Queue Length 95th (m)	#67.8	52.6		34.7	#147.3		m13.8	#202.2		#96.8	130.2	8.3
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	168	585		249	424		264	622		276	934	803
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	0.99	0.36		0.38	0.98		0.27	0.97		0.97	0.64	0.14
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 92.4 (84%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 49.2

Intersection LOS: D

Intersection Capacity Utilization 105.1%

ICU Level of Service G

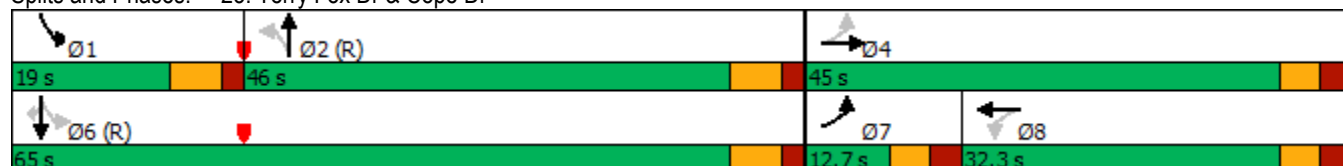
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

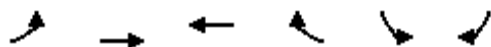
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

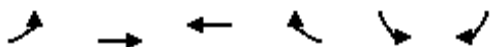


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	563	747	94	41	35
Future Volume (Veh/h)	14	563	747	94	41	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	14	563	747	94	41	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	841				1338	747
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841				1338	747
tC, single (s)	4.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.7	3.3
p0 queue free %	98				72	92
cM capacity (veh/h)	803				149	415
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	14	563	747	94	76	
Volume Left	14	0	0	0	41	
Volume Right	0	0	0	94	35	
cSH	803	1700	1700	1700	211	
Volume to Capacity	0.02	0.33	0.44	0.06	0.36	
Queue Length 95th (m)	0.4	0.0	0.0	0.0	12.4	
Control Delay (s)	9.6	0.0	0.0	0.0	31.3	
Lane LOS	A				D	
Approach Delay (s)	0.2		0.0		31.3	
Approach LOS					D	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			52.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

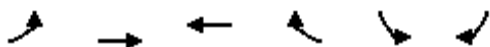


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	604	926	0	0	0
Future Volume (Veh/h)	0	604	926	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	604	926	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.69				0.69	0.69
vC, conflicting volume	926				1530	926
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	663				1544	663
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	641				88	319
Direction, Lane #	EB 1	WB 1				
Volume Total	604	926				
Volume Left	0	0				
Volume Right	0	0				
cSH	641	1700				
Volume to Capacity	0.00	0.54				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		54.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	604	926	0	0	0
Future Volume (Veh/h)	0	604	926	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	604	926	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.69				0.69	0.69
vC, conflicting volume	926				1530	926
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	670				1543	670
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	643				88	318
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	604	926	0	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	643	1700	1700	1700		
Volume to Capacity	0.00	0.54	0.00	0.00		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			54.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↰	↘↙	
Traffic Volume (veh/h)	281	2	41	330	1	40
Future Volume (Veh/h)	281	2	41	330	1	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	281	2	41	330	1	40
Pedestrians	4			3	10	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			293		708	295
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			293		708	295
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	95
cM capacity (veh/h)			1269		387	741
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	283	371	41			
Volume Left	0	41	1			
Volume Right	2	0	40			
cSH	1700	1269	725			
Volume to Capacity	0.17	0.03	0.06			
Queue Length 95th (m)	0.0	0.8	1.4			
Control Delay (s)	0.0	1.2	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			50.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	3	117	11	18	66
Future Volume (Veh/h)	3	3	117	11	18	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	3	117	11	18	66
Pedestrians	14		5			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	244	136			142	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	244	136			142	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			99	
cM capacity (veh/h)	728	907			1400	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	6	128	84			
Volume Left	3	0	18			
Volume Right	3	11	0			
cSH	808	1700	1400			
Volume to Capacity	0.01	0.08	0.01			
Queue Length 95th (m)	0.2	0.0	0.3			
Control Delay (s)	9.5	0.0	1.7			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	1.7			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			27.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	0	0	0	0	0	30	0	0	22	13
Future Volume (Veh/h)	7	0	0	0	0	0	0	30	0	0	22	13
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	7	0	0	0	0	0	0	30	0	0	22	13
Pedestrians	16			1			2			1		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	1			0			0			0		
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	76	76	46	62	82	32	51				31	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76	76	46	62	82	32	51				31	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	100	100	100	100	100				100	
cM capacity (veh/h)	896	807	1013	921	797	1040	1547				1593	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	7	0	30	35								
Volume Left	7	0	0	0								
Volume Right	0	0	0	13								
cSH	896	1700	1547	1593								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.2	0.0	0.0	0.0								
Control Delay (s)	9.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	9.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				0.9								
Intersection Capacity Utilization				18.1%	ICU Level of Service				A			
Analysis Period (min)				15								

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey FBG PM 2028 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	12	30.0	12	30.0	0.090	6.4	LOS A	0.3	2.9	0.39	0.24	0.39	52.0
8	T1	All MCs	41	9.0	41	9.0	0.090	4.5	LOS A	0.3	2.9	0.39	0.24	0.39	54.3
18	R2	All MCs	33	4.0	33	4.0	0.090	4.1	LOS A	0.3	2.9	0.39	0.24	0.39	54.0
Approach			86	10.0	86	10.0	0.090	4.6	LOS A	0.3	2.9	0.39	0.24	0.39	53.9
East: Cope															
1	L2	All MCs	18	20.0	18	20.0	0.193	5.8	LOS A	0.9	7.3	0.28	0.13	0.28	52.5
6	T1	All MCs	143	4.0	143	4.0	0.193	4.7	LOS A	0.9	7.3	0.28	0.13	0.28	54.5
16	R2	All MCs	65	2.0	65	2.0	0.193	4.5	LOS A	0.9	7.3	0.28	0.13	0.28	54.1
Approach			227	4.7	227	4.7	0.193	4.7	LOS A	0.9	7.3	0.28	0.13	0.28	54.2
North: Rouncey															
7	L2	All MCs	36	10.0	36	10.0	0.103	4.7	LOS A	0.4	3.4	0.34	0.19	0.34	52.7
4	T1	All MCs	33	0.0	33	0.0	0.103	3.9	LOS A	0.4	3.4	0.34	0.19	0.34	54.2
14	R2	All MCs	45	0.0	45	0.0	0.103	3.9	LOS A	0.4	3.4	0.34	0.19	0.34	53.8
Approach			113	3.2	113	3.2	0.103	4.1	LOS A	0.4	3.4	0.34	0.19	0.34	53.6
West: Cope															
5	L2	All MCs	47	8.0	47	8.0	0.177	4.7	LOS A	0.8	6.6	0.25	0.11	0.25	52.9
2	T1	All MCs	152	4.0	152	4.0	0.177	4.4	LOS A	0.8	6.6	0.25	0.11	0.25	54.2
12	R2	All MCs	13	0.0	13	0.0	0.177	4.2	LOS A	0.8	6.6	0.25	0.11	0.25	53.9
Approach			212	4.6	212	4.6	0.177	4.5	LOS A	0.8	6.6	0.25	0.11	0.25	53.9
All Vehicles			638	5.1	638	5.1	0.193	4.5	LOS A	0.9	7.3	0.30	0.15	0.30	53.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	47	719	510	73	29	46
Future Volume (vph)	47	719	510	73	29	46
Satd. Flow (prot)	1710	1731	1698	1500	1521	0
Flt Permitted	0.463				0.981	
Satd. Flow (perm)	833	1731	1698	1500	1521	0
Satd. Flow (RTOR)				73	46	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	6%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	719	510	73	75	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	53.5	53.5	53.5	53.5	7.3	
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.11	
v/c Ratio	0.07	0.54	0.39	0.06	0.37	
Control Delay	3.6	6.3	4.8	1.1	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.6	6.3	4.8	1.1	19.6	
LOS	A	A	A	A	B	
Approach Delay		6.1	4.3		19.6	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.4	34.0	20.1	0.0	3.7	
Queue Length 95th (m)	4.8	72.1	42.6	3.2	14.4	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	646	1342	1317	1180	539	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.54	0.39	0.06	0.14	
Intersection Summary						
Cycle Length: 69						
Actuated Cycle Length: 69						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Offset: 27.5 (40%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 6.1

Intersection LOS: A

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	322	289	2	209	97	262	315	8	82	298	66
Future Volume (vph)	120	322	289	2	209	97	262	315	8	82	298	66
Satd. Flow (prot)	1644	1800	1485	1710	1782	1378	1555	1759	0	1660	1765	1378
Flt Permitted	0.365			0.566			0.396			0.565		
Satd. Flow (perm)	632	1800	1485	1019	1782	1378	648	1759	0	987	1765	1378
Satd. Flow (RTOR)			289			190		2				114
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 (%)	4%	0%	3%	0%	1%	11%	10%	2%	0%	3%	2%	11%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	322	289	2	209	97	262	323	0	82	298	66
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	4.7	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	4.7
Minimum Split (s)	11.0	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.0
Total Split (s)	11.0	44.0	44.0	33.0	33.0	33.0	17.0	46.0		29.0	29.0	11.0
Total Split (%)	12.2%	48.9%	48.9%	36.7%	36.7%	36.7%	18.9%	51.1%		32.2%	32.2%	12.2%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effect Green (s)	27.8	27.9	27.9	16.9	16.9	16.9	49.7	49.7		31.0	31.0	41.9
Actuated g/C Ratio	0.31	0.31	0.31	0.19	0.19	0.19	0.55	0.55		0.34	0.34	0.47
v/c Ratio	0.49	0.58	0.44	0.01	0.63	0.24	0.54	0.33		0.24	0.49	0.09
Control Delay	28.7	29.6	4.6	25.5	41.0	1.3	17.6	13.6		26.9	29.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	28.7	29.6	4.6	25.5	41.0	1.3	17.6	13.6		26.9	29.0	1.2
LOS	C	C	A	C	D	A	B	B		C	C	A
Approach Delay		19.5			28.4			15.4			24.5	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	16.5	49.8	0.0	0.3	35.8	0.0	23.3	29.1		10.7	42.7	0.0
Queue Length 95th (m)	24.9	63.2	14.6	1.9	50.1	0.0	50.6	60.7		25.6	77.4	2.5
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	247	756	791	303	530	543	487	972		339	607	702
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.49	0.43	0.37	0.01	0.39	0.18	0.54	0.33		0.24	0.49	0.09
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 90												

Lanes, Volumes, Timings 22: Terry Fox Dr & Fernbank Rd

11-28-2025

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 20.8

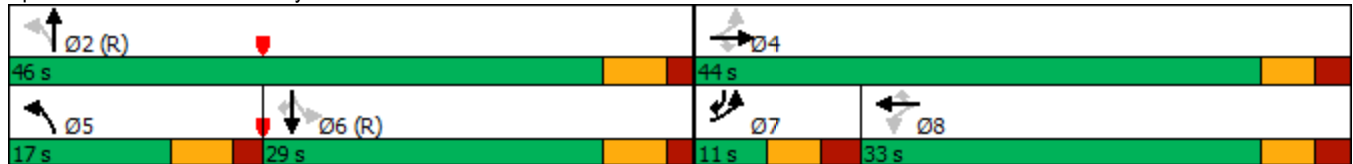
Intersection LOS: C

Intersection Capacity Utilization 74.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	130	49	68	97	238	29	539	55	246	482	69
Future Volume (vph)	103	130	49	68	97	238	29	539	55	246	482	69
Satd. Flow (prot)	1598	1679	0	1629	1501	0	1710	1669	0	1710	1682	1417
Flt Permitted	0.161			0.644			0.488			0.183		
Satd. Flow (perm)	270	1679	0	1097	1501	0	874	1669	0	329	1682	1374
Satd. Flow (RTOR)		19			105			6				90
Confl. Peds. (#/hr)	2		4	4		2	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
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 (%)	7%	2%	2%	5%	8%	4%	0%	5%	17%	0%	7%	8%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	179	0	68	335	0	29	594	0	246	482	69
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	28.2	28.2
Total Split (s)	11.1	43.5		32.4	32.4		49.5	49.5		17.0	66.5	66.5
Total Split (%)	10.1%	39.5%		29.5%	29.5%		45.0%	45.0%		15.5%	60.5%	60.5%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	33.4	32.9		21.8	21.8		46.9	46.9		64.8	64.6	64.6
Actuated g/C Ratio	0.30	0.30		0.20	0.20		0.43	0.43		0.59	0.59	0.59
v/c Ratio	0.71	0.35		0.31	0.88		0.08	0.83		0.72	0.49	0.08
Control Delay	54.9	27.7		40.0	52.4		21.6	40.9		26.1	16.2	1.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.9	27.7		40.0	52.4		21.6	40.9		26.1	16.2	1.7
LOS	D	C		D	D		C	D		C	B	A
Approach Delay		37.7			50.3			40.0			18.0	
Approach LOS		D			D			D			B	
Queue Length 50th (m)	16.8	27.2		12.9	51.0		4.1	123.0		26.3	62.2	0.0
Queue Length 95th (m)	#35.4	45.1		25.8	#92.7		10.6	#193.4		#53.1	95.6	4.2
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	145	580		260	436		372	714		342	987	843
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	0.71	0.31		0.26	0.77		0.08	0.83		0.72	0.49	0.08
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 22.5 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 33.4

Intersection LOS: C

Intersection Capacity Utilization 95.2%

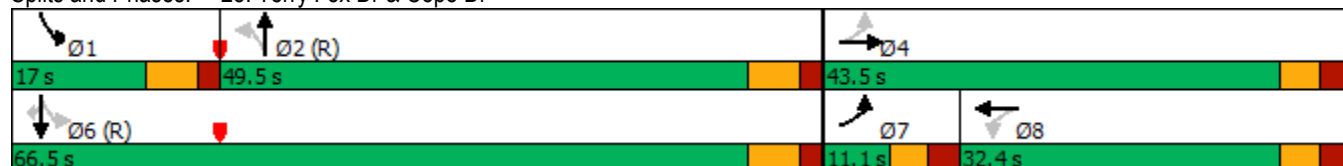
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

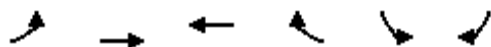
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

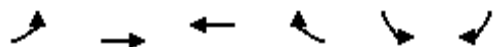


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	680	499	50	67	29
Future Volume (Veh/h)	7	680	499	50	67	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	680	499	50	67	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	549				1193	499
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	549				1193	499
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				67	95
cM capacity (veh/h)	1031				202	576
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	7	680	499	50	96	
Volume Left	7	0	0	0	67	
Volume Right	0	0	0	50	29	
cSH	1031	1700	1700	1700	252	
Volume to Capacity	0.01	0.40	0.29	0.03	0.38	
Queue Length 95th (m)	0.2	0.0	0.0	0.0	13.6	
Control Delay (s)	8.5	0.0	0.0	0.0	27.9	
Lane LOS	A				D	
Approach Delay (s)	0.1		0.0		27.9	
Approach LOS					D	
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			50.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

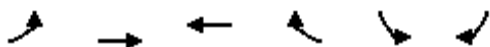


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	766	555	0	0	0
Future Volume (Veh/h)	0	766	555	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	766	555	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	555				1321	555
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	449				1301	449
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1009				161	552
Direction, Lane #	EB 1	WB 1				
Volume Total	766	555				
Volume Left	0	0				
Volume Right	0	0				
cSH	1009	1700				
Volume to Capacity	0.00	0.33				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		45.9%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	766	555	0	0	0
Future Volume (Veh/h)	0	766	555	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	766	555	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	555				1321	555
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	444				1300	444
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1008				161	553
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	766	555	0	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1008	1700	1700	1700		
Volume to Capacity	0.00	0.33	0.00	0.00		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			45.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	322	4	18	190	4	36
Future Volume (Veh/h)	322	4	18	190	4	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	322	4	18	190	4	36
Pedestrians	1				9	
Lane Width (m)	3.6				3.6	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			335		560	333
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		560	333
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			98		99	95
cM capacity (veh/h)			1188		481	708
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	326	208	40			
Volume Left	0	18	4			
Volume Right	4	0	36			
cSH	1700	1188	676			
Volume to Capacity	0.19	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	0.8	10.7			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	10.7			
Approach LOS			B			
Intersection Summary						
Average Delay		1.0				
Intersection Capacity Utilization		36.3%	ICU Level of Service	A		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	8	64	4	20	79
Future Volume (Veh/h)	12	8	64	4	20	79
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	8	64	4	20	79
Pedestrians	22		3			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	2		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	210	88			90	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210	88			90	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	98	99			99	
cM capacity (veh/h)	756	921			1490	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	20	68	99			
Volume Left	12	0	20			
Volume Right	8	4	0			
cSH	815	1700	1490			
Volume to Capacity	0.02	0.04	0.01			
Queue Length 95th (m)	0.6	0.0	0.3			
Control Delay (s)	9.5	0.0	1.6			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	1.6			
Approach LOS	A					
Intersection Summary						
Average Delay		1.9				
Intersection Capacity Utilization		22.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	0	0	0	0	0	25	0	0	5	2
Future Volume (Veh/h)	15	0	0	0	0	0	0	25	0	0	5	2
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	15	0	0	0	0	0	0	25	0	0	5	2
Pedestrians	13			1								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	1			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	44	45	19	32	46	26	20				26	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	44	45	19	32	46	26	20				26	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	98	100	100	100	100	100	100				100	
cM capacity (veh/h)	944	841	1053	971	840	1055	1592				1600	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	15	0	25	7								
Volume Left	15	0	0	0								
Volume Right	0	0	0	2								
cSH	944	1700	1592	1600								
Volume to Capacity	0.02	0.00	0.00	0.00								
Queue Length 95th (m)	0.4	0.0	0.0	0.0								
Control Delay (s)	8.9	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	8.9	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay	2.8											
Intersection Capacity Utilization	16.8%			ICU Level of Service					A			
Analysis Period (min)	15											

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey FBG PM 2033 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	13	30.0	13	30.0	0.101	6.7	LOS A	0.4	3.2	0.41	0.27	0.41	51.8
8	T1	All MCs	45	9.0	45	9.0	0.101	4.7	LOS A	0.4	3.2	0.41	0.27	0.41	54.1
18	R2	All MCs	36	4.0	36	4.0	0.101	4.3	LOS A	0.4	3.2	0.41	0.27	0.41	53.8
Approach			93	10.0	93	10.0	0.101	4.8	LOS A	0.4	3.2	0.41	0.27	0.41	53.7
East: Cope															
1	L2	All MCs	20	20.0	20	20.0	0.215	6.1	LOS A	1.0	8.2	0.30	0.14	0.30	52.4
6	T1	All MCs	159	4.0	159	4.0	0.215	4.9	LOS A	1.0	8.2	0.30	0.14	0.30	54.3
16	R2	All MCs	72	2.0	72	2.0	0.215	4.8	LOS A	1.0	8.2	0.30	0.14	0.30	53.9
Approach			250	4.7	250	4.7	0.215	5.0	LOS A	1.0	8.2	0.30	0.14	0.30	54.1
North: Rouncey															
7	L2	All MCs	40	10.0	40	10.0	0.116	4.9	LOS A	0.5	3.9	0.36	0.21	0.36	52.5
4	T1	All MCs	36	0.0	36	0.0	0.116	4.1	LOS A	0.5	3.9	0.36	0.21	0.36	54.1
14	R2	All MCs	49	0.0	49	0.0	0.116	4.1	LOS A	0.5	3.9	0.36	0.21	0.36	53.6
Approach			125	3.2	125	3.2	0.116	4.3	LOS A	0.5	3.9	0.36	0.21	0.36	53.4
West: Cope															
5	L2	All MCs	52	8.0	52	8.0	0.198	4.9	LOS A	1.0	7.5	0.27	0.12	0.27	52.7
2	T1	All MCs	168	4.0	168	4.0	0.198	4.7	LOS A	1.0	7.5	0.27	0.12	0.27	54.0
12	R2	All MCs	14	0.0	14	0.0	0.198	4.4	LOS A	1.0	7.5	0.27	0.12	0.27	53.7
Approach			235	4.6	235	4.6	0.198	4.7	LOS A	1.0	7.5	0.27	0.12	0.27	53.7
All Vehicles			703	5.1	703	5.1	0.215	4.7	LOS A	1.0	8.2	0.32	0.16	0.32	53.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

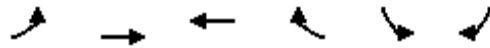
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Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	82	580	860	180	132	163
Future Volume (vph)	82	580	860	180	132	163
Satd. Flow (prot)	1710	1782	1782	1530	1628	0
Flt Permitted	0.207				0.978	
Satd. Flow (perm)	373	1782	1782	1530	1628	0
Satd. Flow (RTOR)				109	87	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	580	860	180	295	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	45.0	45.0	45.0	45.0	29.0	
Total Split (%)	60.8%	60.8%	60.8%	60.8%	39.2%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	47.2	47.2	47.2	47.2	15.2	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.21	
v/c Ratio	0.35	0.51	0.76	0.18	0.73	
Control Delay	13.6	10.4	17.2	3.6	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.6	10.4	17.2	3.6	29.4	
LOS	B	B	B	A	C	
Approach Delay		10.8	14.8		29.4	
Approach LOS		B	B		C	
Queue Length 50th (m)	4.9	39.8	76.9	3.5	28.4	
Queue Length 95th (m)	18.7	83.9	#184.3	13.6	48.2	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	237	1137	1137	1015	568	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.51	0.76	0.18	0.52	

Intersection Summary

Cycle Length: 74

Actuated Cycle Length: 74

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Offset: 22.5 (30%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 88.8%

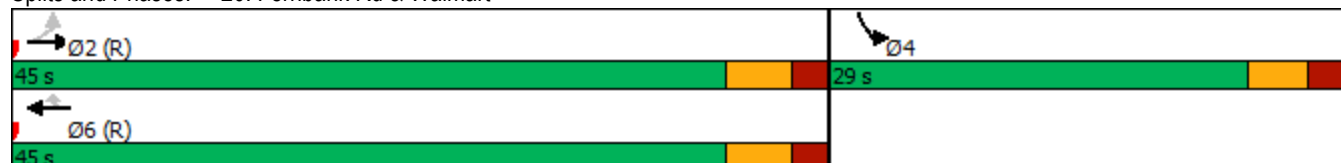
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	349	275	5	469	146	459	551	25	170	467	77
Future Volume (vph)	112	349	275	5	469	146	459	551	25	170	467	77
Satd. Flow (prot)	1693	1782	1337	1710	1800	1485	1676	1783	0	1693	1748	1485
Flt Permitted	0.107			0.533			0.119			0.448		
Satd. Flow (perm)	191	1782	1286	950	1800	1378	210	1783	0	786	1748	1435
Satd. Flow (RTOR)			275			146		3				85
Confl. Peds. (#/hr)	19		7	7		19	5		13	13		5
Confl. Bikes (#/hr)			3			8			2			1
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 (%)	1%	1%	3%	0%	0%	3%	2%	0%	0%	1%	3%	3%
Parking (#/hr)			0									
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	349	275	5	469	146	459	576	0	170	467	77
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.2	33.2	33.2	33.2	33.2	11.2	29.2		29.2	29.2	11.3
Total Split (s)	11.4	48.6	48.6	37.2	37.2	37.2	31.6	71.4		39.8	39.8	11.4
Total Split (%)	9.5%	40.5%	40.5%	31.0%	31.0%	31.0%	26.3%	59.5%		33.2%	33.2%	9.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effect Green (s)	42.3	42.4	42.4	31.0	31.0	31.0	65.2	65.2		33.6	33.6	38.6
Actuated g/C Ratio	0.35	0.35	0.35	0.26	0.26	0.26	0.54	0.54		0.28	0.28	0.32
v/c Ratio	0.85	0.55	0.44	0.02	1.01	0.31	1.08	0.59		0.77	0.96	0.15
Control Delay	79.1	35.3	5.5	33.8	88.6	7.5	100.3	21.6		54.9	63.3	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	79.1	35.3	5.5	33.8	88.6	7.5	100.3	21.6		54.9	63.3	3.7
LOS	E	D	A	C	F	A	F	C		D	E	A
Approach Delay		30.8			69.1			56.5			54.9	
Approach LOS		C			E			E			D	
Queue Length 50th (m)	19.1	69.0	0.0	0.9	~118.4	0.0	~109.0	91.9		25.0	85.9	0.2
Queue Length 95th (m)	#46.1	100.1	19.0	4.4	#188.5	16.5	#176.2	128.4		m#68.2	#179.0	m3.6
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	131	629	632	245	465	464	424	970		220	489	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.85	0.55	0.44	0.02	1.01	0.31	1.08	0.59		0.77	0.96	0.15

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 52.5

Intersection LOS: D

Intersection Capacity Utilization 106.1%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

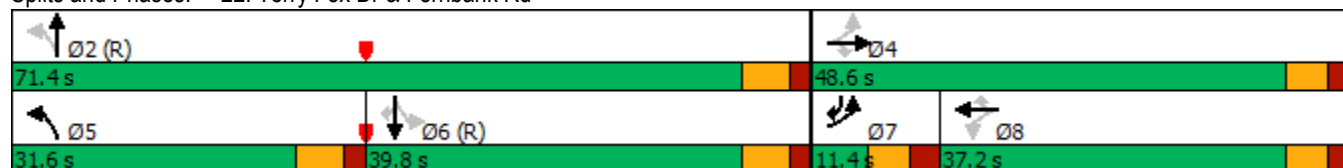
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	175	56	105	185	275	77	619	45	293	660	123
Future Volume (vph)	184	175	56	105	185	275	77	619	45	293	660	123
Satd. Flow (prot)	1660	1635	0	1644	1591	0	1613	1712	0	1693	1748	1485
Flt Permitted	0.117			0.615			0.364			0.082		
Satd. Flow (perm)	204	1635	0	1032	1591	0	611	1712	0	146	1748	1402
Satd. Flow (RTOR)		15			58			3				123
Confl. Peds. (#/hr)	1		18	18		1	12		2	2		12
Confl. Bikes (#/hr)			6			6			2			6
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%	1%	15%	4%	1%	1%	6%	3%	16%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	231	0	105	460	0	77	664	0	293	660	123
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		5.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		11.0	28.2	28.2
Total Split (s)	15.2	49.8		34.6	34.6		49.2	49.2		21.0	70.2	70.2
Total Split (%)	12.7%	41.5%		28.8%	28.8%		41.0%	41.0%		17.5%	58.5%	58.5%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	44.0	43.5		28.3	28.3		43.0	43.0		64.2	64.0	64.0
Actuated g/C Ratio	0.37	0.36		0.24	0.24		0.36	0.36		0.54	0.53	0.53
v/c Ratio	0.98	0.38		0.43	1.10		0.35	1.08		1.08	0.71	0.15
Control Delay	91.8	28.7		45.6	110.9		25.3	87.9		110.7	26.2	2.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	91.8	28.7		45.6	110.9		25.3	87.9		110.7	26.2	2.9
LOS	F	C		D	F		C	F		F	C	A
Approach Delay		56.7			98.8			81.4			46.6	
Approach LOS		E			F			F			D	
Queue Length 50th (m)	32.2	39.2		22.3	~117.6		12.6	~185.2		~65.4	117.9	0.0
Queue Length 95th (m)	#78.2	61.9		40.7	#184.7		m22.1	m#257.5		#122.5	164.8	9.2
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	188	602		243	419		218	615		271	932	805
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	0.38		0.43	1.10		0.35	1.08		1.08	0.71	0.15
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 67.8

Intersection LOS: E

Intersection Capacity Utilization 113.6%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

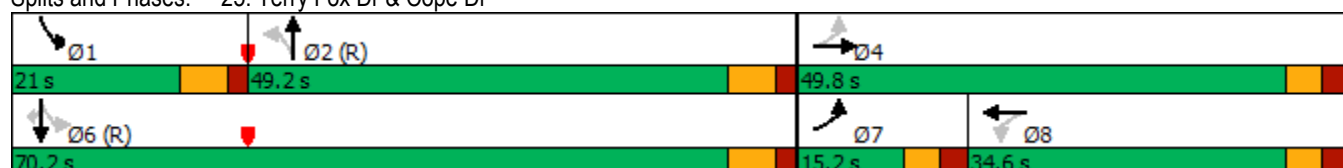
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

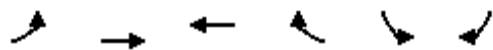
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

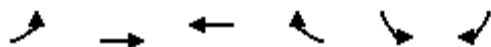


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	622	825	104	45	39
Future Volume (Veh/h)	16	622	825	104	45	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	16	622	825	104	45	39
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	929				1479	825
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	929				1479	825
tC, single (s)	4.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.7	3.3
p0 queue free %	98				63	89
cM capacity (veh/h)	744				121	371
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	16	622	825	104	84	
Volume Left	16	0	0	0	45	
Volume Right	0	0	0	104	39	
cSH	744	1700	1700	1700	176	
Volume to Capacity	0.02	0.37	0.49	0.06	0.48	
Queue Length 95th (m)	0.5	0.0	0.0	0.0	18.3	
Control Delay (s)	9.9	0.0	0.0	0.0	42.9	
Lane LOS	A				E	
Approach Delay (s)	0.2		0.0		42.9	
Approach LOS					E	
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			57.7%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

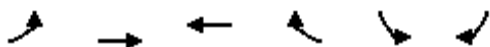


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	667	1023	0	0	0
Future Volume (Veh/h)	0	667	1023	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	667	1023	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.59				0.59	0.59
vC, conflicting volume	1023				1690	1023
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	685				1825	685
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	537				50	264
Direction, Lane #	EB 1	WB 1				
Volume Total	667	1023				
Volume Left	0	0				
Volume Right	0	0				
cSH	537	1700				
Volume to Capacity	0.00	0.60				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		60.2%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	667	1023	0	0	0
Future Volume (Veh/h)	0	667	1023	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	667	1023	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.60				0.60	0.60
vC, conflicting volume	1023				1690	1023
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	702				1818	702
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	541				52	264
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	667	1023	0	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	541	1700	1700	1700		
Volume to Capacity	0.00	0.60	0.15	0.00		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS			A	A		
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			60.2%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

11-28-2025

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	310	2	46	364	1	45
Future Volume (Veh/h)	310	2	46	364	1	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	310	2	46	364	1	45
Pedestrians	4			3	10	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			322			781
vC1, stage 1 conf vol						324
vC2, stage 2 conf vol						
vCu, unblocked vol			322			781
tC, single (s)			4.1			6.4
tC, 2 stage (s)						6.2
tF (s)			2.2			3.5
p0 queue free %			96			100
cM capacity (veh/h)			1239			349
						714
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	312	410	46			
Volume Left	0	46	1			
Volume Right	2	0	45			
cSH	1700	1239	698			
Volume to Capacity	0.18	0.04	0.07			
Queue Length 95th (m)	0.0	0.9	1.7			
Control Delay (s)	0.0	1.2	10.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.5			
Approach LOS			B			
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			54.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	4	129	12	20	73
Future Volume (Veh/h)	4	4	129	12	20	73
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	4	129	12	20	73
Pedestrians	14		5			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	267	149			155	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	267	149			155	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	100			99	
cM capacity (veh/h)	705	892			1385	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	8	141	93			
Volume Left	4	0	20			
Volume Right	4	12	0			
cSH	788	1700	1385			
Volume to Capacity	0.01	0.08	0.01			
Queue Length 95th (m)	0.2	0.0	0.4			
Control Delay (s)	9.6	0.0	1.7			
Lane LOS	A		A			
Approach Delay (s)	9.6	0.0	1.7			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			28.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	0	0	0	0	0	33	0	0	25	14
Future Volume (Veh/h)	8	0	0	0	0	0	0	33	0	0	25	14
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	8	0	0	0	0	0	0	33	0	0	25	14
Pedestrians	16			1			2			1		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	1			0			0			0		
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	82	82	50	68	89	35	55				34	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	82	82	50	68	89	35	55				34	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	100	100	100	100	100				100	
cM capacity (veh/h)	888	801	1009	917	794	1042	1542				1589	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	0	33	39								
Volume Left	8	0	0	0								
Volume Right	0	0	0	14								
cSH	888	1700	1542	1589								
Volume to Capacity	0.01	0.01	0.00	0.00								
Queue Length 95th (m)	0.2	0.0	0.0	0.0								
Control Delay (s)	9.1	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	9.1	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				0.9								
Intersection Capacity Utilization				18.1%	ICU Level of Service				A			
Analysis Period (min)				15								

APPENDIX H

Design Supportive TDM Checklist

TDM-Supportive Development Design and Infrastructure Checklists

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

TDM Measure Legend:

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

	TDM-supportive design & infrastructure measures <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
	1	WALKING AND CYCLING: ROUTES	
	1.1	Building Location and Access Points	
Basic	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☒ Front parking is between street and building, but sidewalk routed behind parking
Basic	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☒ North entrances provide access to Cope Drive bus stops
Basic	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☒
	1.2	Facilities for Walking and Cycling	
Required	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations (see Official Plan policy 4.3.3)	☐ No RT routes within 600m.
Required	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible (see Official Plan policy 4.3.12)	☒ Direct sidewalk connections provided to Cope Drive from building entrances.
Required	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks (see Official Plan policy 4.3.10)	☒ Concrete sidewalks next to paved vehicle areas.
Required	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps (see Official Plan policy 4.3.10)	☒ Anticipated pedestrian pathways will be designed to

	TDM-supportive design & infrastructure measures Non-residential developments		Check if completed & add descriptions, explanations or plan/drawing references
Required	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians (see Official Plan policy 4.3.11)	☒ New sidewalk provides direct building access and connections to surrounding pedestrian network. Recommendations for pedestrian crossings documented in TIA report.
Basic	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☒ Direct connections to Cope Drive sidewalk connecting to transit.
Basic	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
Basic	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	Amenities for Walking and Cycling	
Basic	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
Basic	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☒ Anticipate that signage to be implemented to designate bus loop and one-way circulation through from parking area.
	2	WALKING & CYCLING: END-OF-TRIP FACILITIES	
	2.1	Bicycle Parking	
Required	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see Official Plan policy 4.3.6)	☒ Bicycle parking to be located near building entrances.
Required	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see Zoning By-law Section 111)	☒ Bicycle parking will comply with Ottawa ZBL requirements.
Required	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see Zoning By-law Section 111)	☒ Bike rack configuration indicated in proposed site plan, all securely anchored.
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	☒ Bike parking exceeds projected cycling trips based on project mode share.
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	☒ Bike parking exceeds projected cycling trips based on project mode share.
	2.2	Secure Bicycle Parking	
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 Zoning By-law Section 111)	☐ N/A, not an office building
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)	☐
	2.3	Shower and Change Facilities	

OCSB NEW FERNBANK HS TIA
TRANSPORTATION IMPACT ASSESSMENT

	TDM-supportive design & infrastructure measures		Check if completed & add descriptions, explanations or plan/drawing references
	Non-residential developments		
Basic	2.3.1	Provide shower and change facilities for the use of active commuters	☒ Amenities available as part of typical school operations / gym facilities.
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	☒ Amenities available as part of typical school operations / gym facilities.
	2.4	Bicycle Repair Station	
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)	☐
	3	TRANSIT	
	3.1	Customer Amenities	
Basic	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐ N/A - no on site transit stops
Basic	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
Better	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐ N/A - no on site transit stops
	4	RIDESHARING	
	4.1	Pick-up and Drop-off Facilities	
Basic	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	Carpool Parking	
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	☐
Better	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5	CARSHARING AND BIKESHARING	
	5.1	Carshare Parking Spaces	
Better	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces (see Zoning By-law Section 94)	☐
	5.2	Bikeshare Station Location	
Better	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

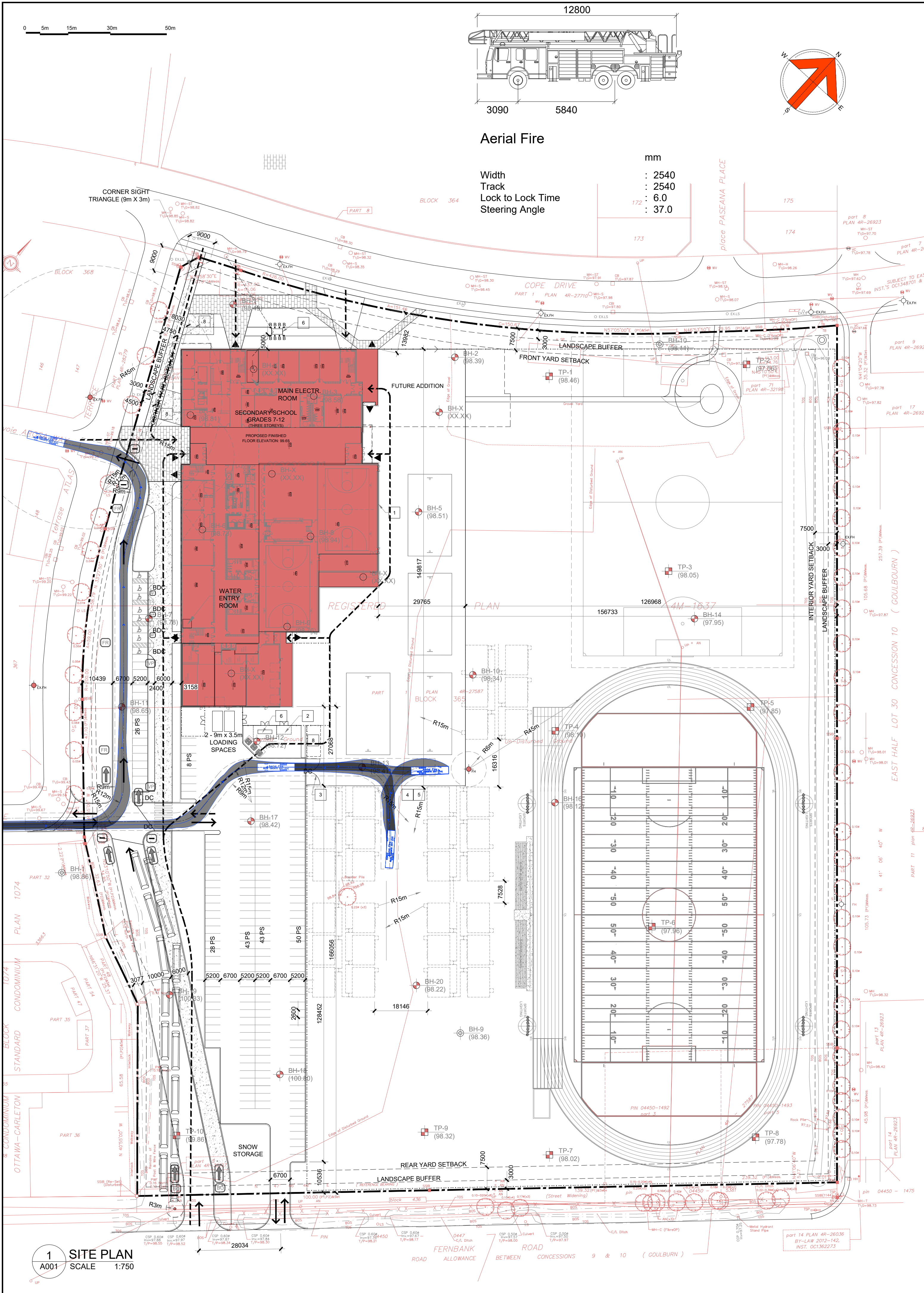
	TDM-supportive design & infrastructure measures Non-residential developments		Check if completed & add descriptions, explanations or plan/drawing references
	6	PARKING	
	6.1	Number of Parking Spaces	
Required	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐ Approximately 26 spaces provided in excess of ZBL requirements, provides flexibility for events if required.
Basic	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
Basic	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (see Zoning By-law Section 104)	☐
Better	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (see Zoning By-law Section 111)	☐
	6.2	Separate Long-Term and Short-Term Parking Areas	
Better	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)	☐
	7	OTHER	
	7.1	On-site Amenities to Minimize Off-Site Trips	
Better	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

Adopted from City of Ottawa TIA Guidelines TDM Supportive Development Design and Infrastructure Checklist:

https://documents.ottawa.ca/sites/documents/files/tdm_infra_design_checklist_en.pdf

APPENDIX I

Autoturn Swept Path Review



SITE DATA

ALL ZONING DEFINITIONS AND REQUIREMENTS AS PER CITY OF OTTAWA ZONING BY-LAW, 2008-250

ADDRESS:	5431 FERNBANK ROAD, OTTAWA
AREA	C SUBURBAN
WARD	6 STITTVILLE (COUNC. GLEN GOWER)
ZONING	I1A

LOT AREA	73,967 m ² (18.27 ACRES)
BUILDING FOOTPRINT	±6,987 m ² (75,205 s.f.)
TOTAL FLOOR AREAS (GROSS)	±14,776 m ² (159,600 s.f.)
FUTURE PORTABLES (72 m ² EACH)	2,160 M ² (23,250 SF.)

ZONING MECHANISMS	PROVISIONS (I1A SUBZONE)	PROVIDED
(a) MINIMUM LOT AREA (m ²)	400	73967
(b) MINIMUM LOT WIDTH (m)	15	239.30
(c) MINIMUM FRONT YARD SETBACK (m)	7.5	±13
(d) MINIMUM INTERIOR SIDE YARD SETBACK (m)	7.5	±20
(e) MINIMUM CORNER SIDE YARD SETBACK (m)	4.5	
(f) MINIMUM REAR YARD SETBACK (m)	7.5	
(g) MAXIMUM BUILDING HEIGHT (m)	15	±13

PARKING CALCULATION

GRADE 7&8 CLASSROOMS (1.5 PS/CLASS)	16 X 1.5 = 24
GRADES 9-12 CLASSROOMS (2 PS/CLASS)	46 X 2 = 92
PORTABLE CLASSROOMS	
GRADE 7&8 CLASSROOMS (1.5 PS/CLASS)	10 X 1.5 = 15
GRADES 9-12 CLASSROOMS (2 PS/CLASS)	20 X 2 = 40
BARRIER FREE PARKING SPACES (3.1.2, TABLE 3)	7 (3 TYPE A + 4 TYPE B)
STANDARD PARKING SPACE	5.2mx2.6mx6.7 m AISLE

TOTAL REQUIRED	171	197
----------------	-----	-----

BICYCLE PARKING CALCULATION

MAIN SCHOOL (1 PER 100 m2)	14,766 / 100 = 148	
FUTURE PORTABLES (1 PER 100 m2)	2,160 / 100 = 22	
TOTAL REQUIRED	170	170
STANDARD BICYCLE PARKING SPACE	1.8x0.6 m	

LOADING SPACES

TABLE 113A(a) (±10000 m ²)	2 REQUIRED (3.5 X 7m)	2
--	-----------------------	---

LANDSCAPED BUFFER

ABUTTING THE STREET (PARKING LOT 100+ SPACES)	3m
NOT ABUTTING THE STREET (PARKING LOT 100+ SPACES)	3m

BUILDING CODE DATA

ALL REQUIREMENTS AS PER ONTARIO BUILDING CODE OBC 2024

MAJOR OCCUPANCY	GROUP A, DIVISION 2
BUILDING AREA	±6,987 m ² (75,205 s.f.)
TOTAL GROSS FLOOR AREA	±14,776 m ² (159,600 s.f.)
NUMBER OF STOREYS	3
NO OF STREETS FOR FIRE FIGHTING	1
BUILDING CLASSIFICATION	3.2.2.24, ANY AREA, UP TO 6 STOREYS, SPRINKLERED
SPRINKLERED BUILDING	YES
CONSTRUCTION TYPE	NON-COMBUSTIBLE
FLOOR ASSEMBLIES & F.R.R	1 HOUR

TOPOGRAPHIC SURVEY INFO

SURVEY PROPERTY BOUNDARIES TAKEN FROM TOPOGRAPHIC PLAN OF SURVEY OF BLOCK 365, REGISTERED PLAN 4M-1637, CITY OF OTTAWA
PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
JULY 13, 2023 (JOB N O. 23493-23)

SYMBOL LEGEND:

EX.FH	EXISTING FIRE HYDRANT
FP	FLAG POLE - SEE DETAIL 16/A002
EX.LS	EXISTING LIGHT STANDARD
R-EXLS	RELOCATED EXISTING LIGHT STANDARD
LS	LIGHT STANDARD - REFER TO ELECTRICAL
EX.CB	EXISTING CATCH BASIN
CB	CATCH BASIN - REFER TO CIVIL
CBMH	CATCH BASIN/MANHOLE - REFER TO CIVIL
SAMH	SANITARY MANHOLE - REFER TO CIVIL
STMH	STORM MANHOLE - REFER TO CIVIL
▲ ▼	BUILDING ENTRANCE/EXIT
FD	FIRE DEPARTMENT CONNECTION
FH	NEW FIRE HYDRANT
WM	WATER METER (IN WATER ENTRY ROOM)
WMR	WATER METER REMOTE READOUT
BDC	NEW BARRIER-FREE DEPRESSED CURB - SEE DETAIL 15/A002
DC	NEW DEPRESSED CURB - REFER TO CIVIL
---	NEW CURB
---	PROPERTY LINE
x x x x	NEW CHAIN LINK FENCE
B	BOLLARD - SEE DETAIL 8/A002
KB	KNOCK-DOWN BOLLARD - SEE DETAILS 14/A002
TWSI	TACTILE WALKING SURFACE INDICATOR, REFER TO LANDSCAPE
TP-1 (98.46)	TESTPIT LOCATION, REFER TO GEOTECHNICAL REPORT
BH-8 (98.94)	BOREHOLE LOCATION, REFER TO GEOTECHNICAL REPORT

SIGNAGE LEGEND:

NO TRESPASSING	NO ENTRY	BUSES ONLY
BF PARKING	VISITOR PARKING	STAFF PARKING
ONE WAY	FIRE ROUTE	

SPECIFIC CONSTRUCTION NOTES:

- PROVIDE PERIMETER FOUNDATION DRAINAGE: 100 TO 150mm Ø, GEOTEXTILE-WRAPPED, PERFORATED, CORRUGATED, PLASTIC PIPE SURROUNDED ON ALL SIDES BY 150mm OF 10mm CLEAR CRUSHED STONE. PLACE AT THE FOOTING LEVEL AROUND THE EXTERIOR OF THE STRUCTURE. THE PIPE TO HAVE A POSITIVE GRAVITY CONNECTION TO THE STORM SEWER OUTLET. SEE CIVIL.
- GAS METER CHAIN LINK FENCE:
 - ±4000 LONG x 2135 HIGH ALONG BACK OF GAS METER STATION
 - TOP: CHAIN LINK FENCE INSTALLED ACROSS THE TOP
 - FENCE FABRIC: 6 GAUGE, VINYL COATED, BLACK
 - LOCKING DOUBLE GATES @ 1220 WIDE EACH
 - LOCKING DEVICE; ENBRIDGE TO SUPPLY MASTER X2268 LOCK UPON COMPLETION
 - FENCE POSTS - 100mm, SCHEDULE 80, IN CONCRETECOORDINATE WITH MECHANICAL
- DEPRESSED CURB 6m WIDE - REFER TO CIVIL AND LANDSCAPING
- PROVIDE TRENCHES FOR POWER, PA/SECURITY, COMMUNICATIONS, AND FIRE ALARM. REFER TO ELECTRICAL.
- PROVIDE MANHOLE TO SERVICE FUTURE PORTABLES. REFER TO ELECTRICAL.
- PROVIDE 8000x4500mm GENERATOR ENCLOSURE & GENERATOR. REFER TO ELECTRICAL.
- 1880x3760mm TRANSFORMER PAD MOUNT WITH 8 BOLLARDS
- BIKE RACKS - SEE LANDSCAPING (SEE 2/A002)
- EARTH BINS (SEE 3/A002)
- VEHICULAR GATE (SEE 8/A002)

GENERAL NOTES:

- ALL CONCRETE CURBS AND CONCRETE DEPRESSED CURBS TO BE CONSTRUCTED AS PER CITY OF OTTAWA STANDARD DETAIL SC1.1
- ALL SITE ENTRANCES TO BE CONSTRUCTED AS PER CITY OF OTTAWA STANDARD DETAIL SC7.1
- ALL BARRIER FREE DEPRESSED CURBS TO BE CONSTRUCTED AS PER CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS (SECTION 3.4)
- ALL TWSI INSTALLATIONS ARE TO CONFORM TO ONE OF FIGURES 33a, 33b, 34, OR 35 OF THE CITY OF OTTAWA ACCESSIBILITY STANDARDS.



03	ISSUED FOR SPC APPLICATION	15OCT25
02	33% CLIENT REVIEW	19SEP25
01	ISSUED FOR SITE PLAN PRE-CONSULT	05SEP25
NO.	revision	date

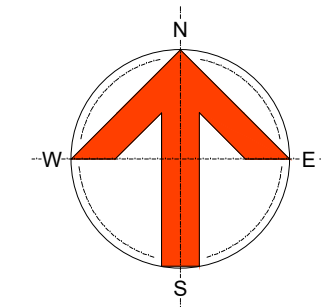
N45 ARCHITECTURE INC.

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tel. 613.224.0095 fax 613.224.9811

FERNBANK CATHOLIC HIGH SCHOOL

5431 FERNBANK ROAD
OTTAWA, ONTARIO
K2S 0T7

PROJECT NORTH

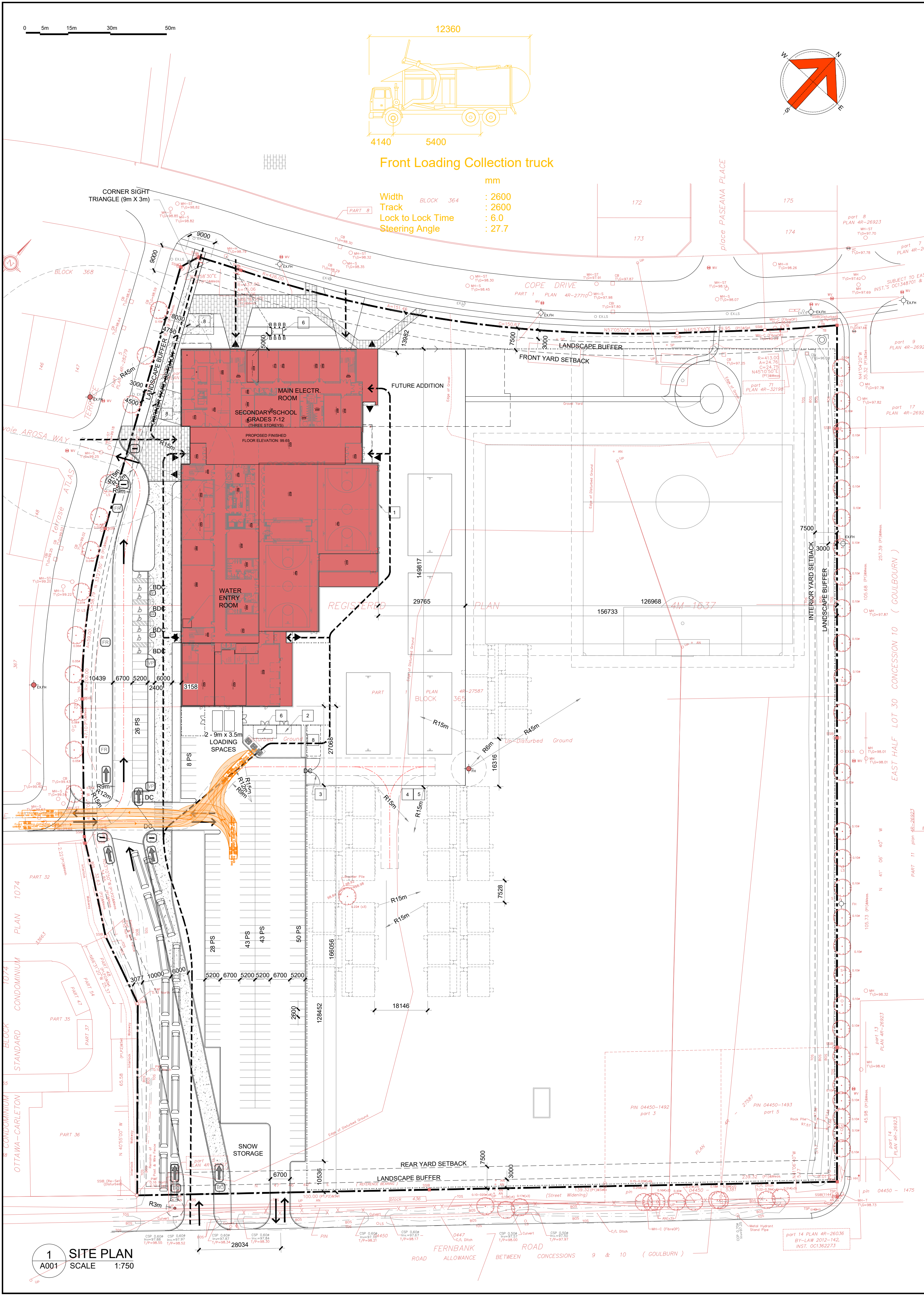


seal

drawing title

SITE PLAN

scale AS NOTED	drawn by X.X.
date SEPT. 2025	checked by V.P.
project number 24-835	drawing number A001
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DO NOT SCALE DRAWINGS	
revision	



SITE DATA

ALL ZONING DEFINITIONS AND REQUIREMENTS AS PER CITY OF OTTAWA ZONING BY-LAW, 2008-250

ADDRESS:	5431 FERNBANK ROAD, OTTAWA
AREA:	C SUBURBAN
WARD:	6 STITTVILLE (COUNC. GLEN GOWER)
ZONING:	IIA
LOT AREA:	73,967 m ² (18.27 ACRES)
BUILDING FOOTPRINT:	±6,987 m ² (75,205 s.f.)
TOTAL FLOOR AREAS (GROSS):	±14,776 m ² (159,600 s.f.)
FUTURE PORTABLES (72 m ² EACH):	2,160 m ² (23,250 SF.)

ZONING MECHANISMS	PROVISIONS (IIA SUBZONE)	PROVIDED
(a) MINIMUM LOT AREA (m ²)	400	73967
(b) MINIMUM LOT WIDTH (m)	15	239.30
(c) MINIMUM FRONT YARD SETBACK (m)	7.5	±13
(d) MINIMUM INTERIOR SIDE YARD SETBACK (m)	7.5	±20
(e) MINIMUM CORNER SIDE YARD SETBACK (m)	4.5	
(f) MINIMUM REAR YARD SETBACK (m)	7.5	
(g) MAXIMUM BUILDING HEIGHT (m)	15	±13

PARKING CALCULATION

GRADE 7&8 CLASSROOMS (1.5 PS/CLASS)	16 X 1.5 = 24
GRADES 9-12 CLASSROOMS (2 PS/CLASS)	46 X 2 = 92
PORTABLE CLASSROOMS	
GRADE 7&8 CLASSROOMS (1.5 PS/CLASS)	10 X 1.5 = 15
GRADES 9-12 CLASSROOMS (2 PS/CLASS)	20 X 2 = 40
BARRIER FREE PARKING SPACES (3.1.2, TABLE 3)	7 (3 TYPE A + 4 TYPE B)
STANDARD PARKING SPACE	5.2mx2.6mx6.7 m AISLE

TOTAL REQUIRED	171	197
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BICYCLE PARKING CALCULATION

MAIN SCHOOL (1 PER 100 m2)	14,766 / 100 = 148	
FUTURE PORTABLES (1 PER 100 m2)	2,160 / 100 = 22	
TOTAL REQUIRED	170	170
STANDARD BICYCLE PARKING SPACE	1.8x0.6 m	

LOADING SPACES

TABLE 113(a) (±10000 m ²)	2 REQUIRED (3.5 X 7m)	2
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LANDSCAPED BUFFER

ABUTTING THE STREET (PARKING LOT 100+ SPACES)	3m
NOT ABUTTING THE STREET (PARKING LOT 100+ SPACES)	3m

BUILDING CODE DATA

ALL REQUIREMENTS AS PER ONTARIO BUILDING CODE OBC 2024

MAJOR OCCUPANCY	GROUP A, DIVISION 2
BUILDING AREA	±6,987 m ² (75,205 s.f.)
TOTAL GROSS FLOOR AREA	±14,776 m ² (159,600 s.f.)
NUMBER OF STOREYS	3
NO OF STREETS FOR FIRE FIGHTING	1
BUILDING CLASSIFICATION	3.2.2.24, ANY AREA, UP TO 6 STOREYS, SPRINKLERED
SPRINKLERED BUILDING	YES
CONSTRUCTION TYPE	NON-COMBUSTIBLE
FLOOR ASSEMBLIES & F.R.R	1 HOUR

TOPOGRAPHIC SURVEY INFO

SURVEY PROPERTY BOUNDARIES TAKEN FROM TOPOGRAPHIC PLAN OF SURVEY OF BLOCK 365, REGISTERED PLAN 4M-1637, CITY OF OTTAWA
PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
JULY 13, 2023 (JOB N O. 23493-23)

SYMBOL LEGEND:

EX.FH	EXISTING FIRE HYDRANT
FP	FLAG POLE - SEE DETAIL 16/A002
EX.LS	EXISTING LIGHT STANDARD
R-EXLS	RELOCATED EXISTING LIGHT STANDARD
LS	LIGHT STANDARD - REFER TO ELECTRICAL
EX.CB	EXISTING CATCH BASIN
CB	CATCH BASIN - REFER TO CIVIL
CBMH	CATCH BASIN/MANHOLE - REFER TO CIVIL
SAMH	SANITARY MANHOLE - REFER TO CIVIL
STMH	STORM MANHOLE - REFER TO CIVIL
▲ ▼	BUILDING ENTRANCE/EXIT
FDC	FIRE DEPARTMENT CONNECTION
FH	NEW FIRE HYDRANT
WM	WATER METER (IN WATER ENTRY ROOM)
WMR	WATER METER REMOTE READOUT
BDC	NEW BARRIER-FREE DEPRESSED CURB - SEE DETAIL 15/A002
DC	NEW DEPRESSED CURB - REFER TO CIVIL
---	NEW CURB
---	PROPERTY LINE
x x x x	NEW CHAIN LINK FENCE
B	BOLLARD - SEE DETAIL 8/A002
KB	KNOCK-DOWN BOLLARD - SEE DETAILS 14/A002
TWSI	TACTILE WALKING SURFACE INDICATOR, REFER TO LANDSCAPE
	TESTPIT LOCATION, REFER TO GEOTECHNICAL REPORT
	BOREHOLE LOCATION, REFER TO GEOTECHNICAL REPORT

SIGNAGE LEGEND:

NO TRESPASSING	NO ENTRY	BUSES ONLY
BF PARKING	VISITOR PARKING	STAFF PARKING
ONE WAY	FIRE ROUTE	

SPECIFIC CONSTRUCTION NOTES:

- PROVIDE PERIMETER FOUNDATION DRAINAGE: 100 TO 150mm Ø, GEOTEXTILE-WRAPPED, PERFORATED, CORRUGATED, PLASTIC PIPE SURROUNDED ON ALL SIDES BY 150mm OF 10mm CLEAR CRUSHED STONE. PLACE AT THE FOOTING LEVEL AROUND THE EXTERIOR OF THE STRUCTURE. THE PIPE TO HAVE A POSITIVE GRAVITY CONNECTION TO THE STORM SEWER OUTLET. SEE CIVIL.
- GAS METER CHAIN LINK FENCE: ±4000 LONG x 2135 HIGH ALONG BACK OF GAS METER STATION
- TOP: CHAIN LINK FENCE INSTALLED ACROSS THE TOP
- FENCE FABRIC: 6 GAUGE, VINYL COATED, BLACK
- LOCKING DOUBLE GATES @ 1220 WIDE EACH
- LOCKING DEVICE: ENBRIDGE TO SUPPLY MASTER X2268 LOCK UPON COMPLETION
- FENCE POSTS - 100mm, SCHEDULE 80, IN CONCRETE
COORDINATE WITH MECHANICAL
- DEPRESSED CURB 6m WIDE - REFER TO CIVIL AND LANDSCAPING
- PROVIDE TRENCHES FOR POWER, PA/SECURITY, COMMUNICATIONS, AND FIRE ALARM. REFER TO ELECTRICAL.
- PROVIDE MANHOLE TO SERVICE FUTURE PORTABLES. REFER TO ELECTRICAL.
- PROVIDE 8000x4500mm GENERATOR ENCLOSURE & GENERATOR. REFER TO ELECTRICAL.
- 1880x3760mm TRANSFORMER PAD MOUNT WITH 8 BOLLARDS
- BIKE RACKS - SEE LANDSCAPING (SEE 2/A002)
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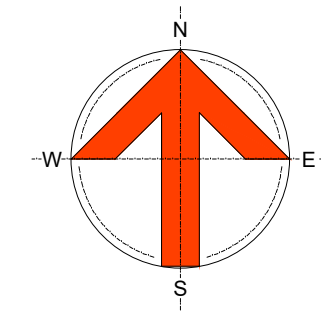
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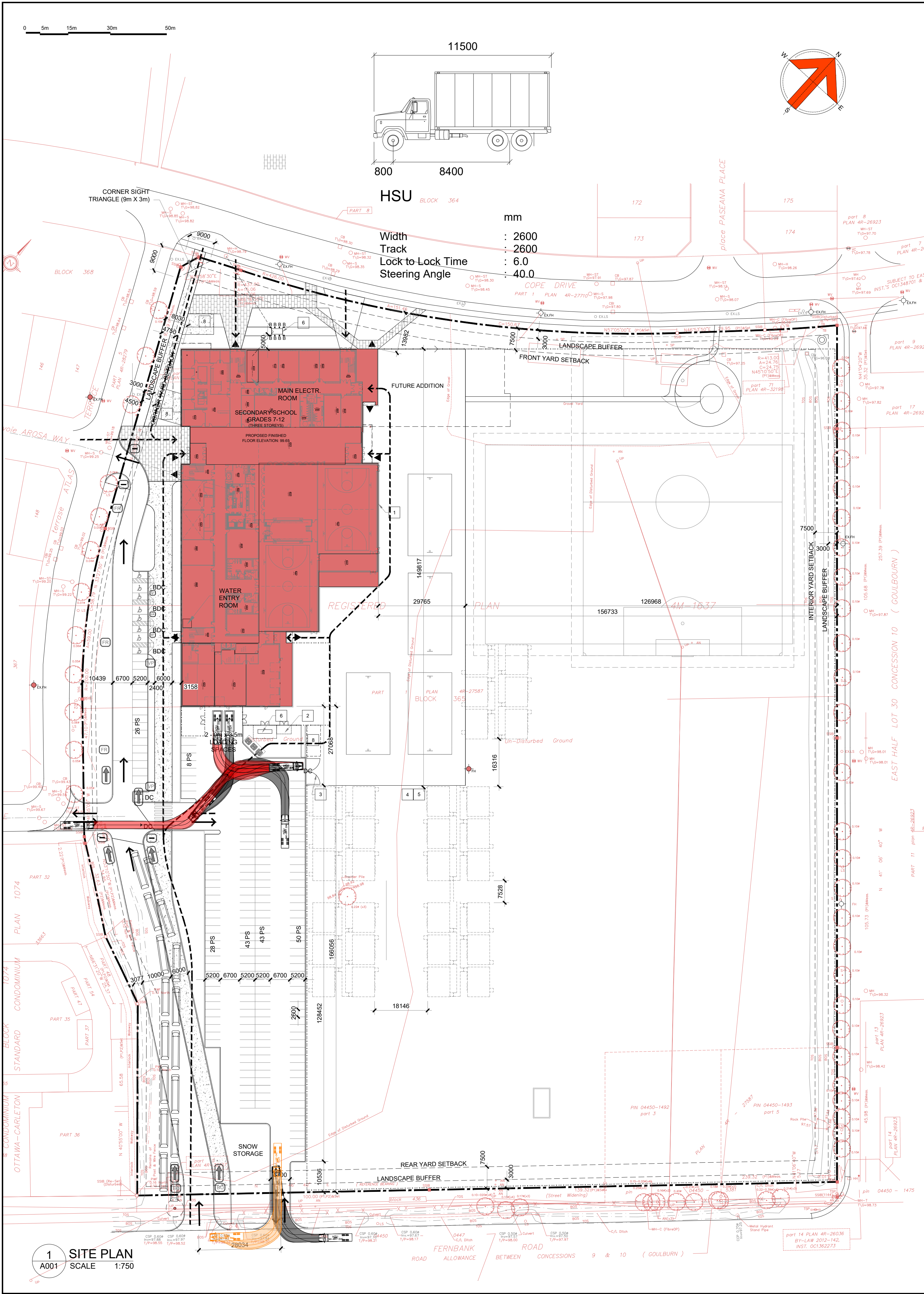


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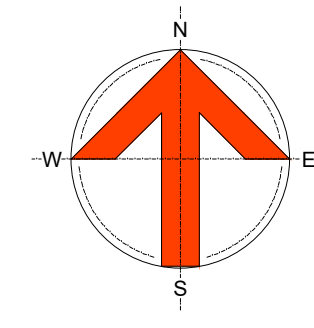
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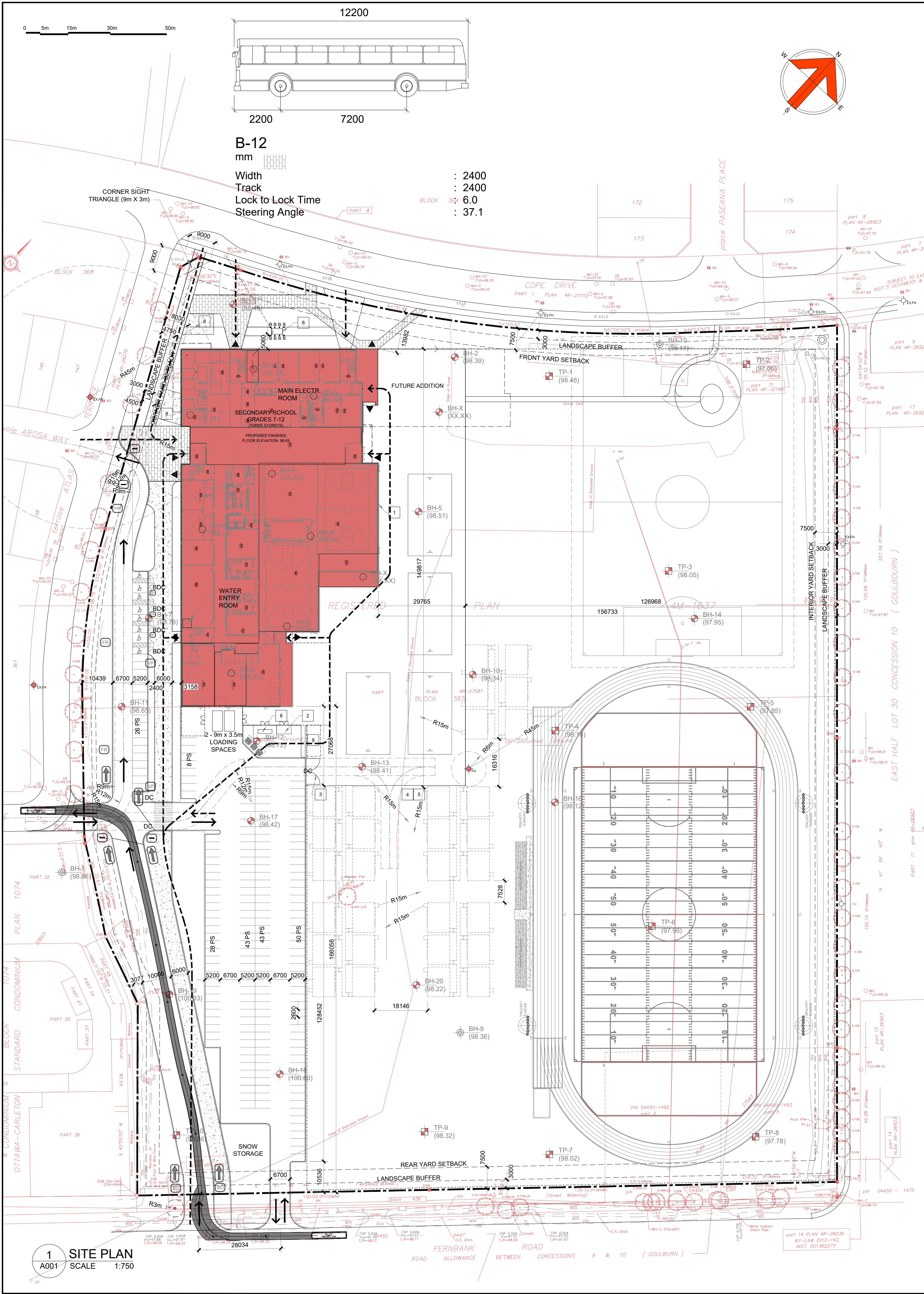


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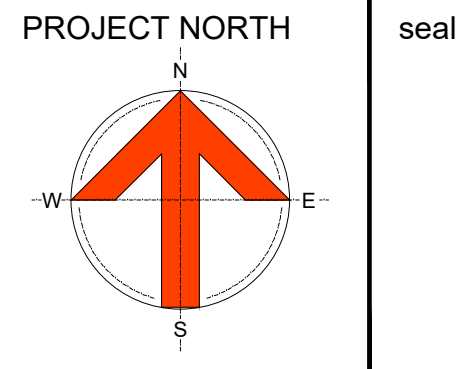
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APPENDIX J

MMLOS Analysis

Multi-Modal Level of Service - Segments Form

Project: New OCSB High School - 5431 Fernbank Road

Consultant: Robinson Consultants

Date: Nov 28, 2025

Scenario: Existing conditions

Segment Name		Cope Drive - Rouncey to Terry Fox				Atlas Terrace - Cope to Atlas				Fernbank Road - Rouncey to Terry Fox			
OP Transect / Policy Area		Outer Urban or Suburban				Outer Urban or Suburban				Outer Urban or Suburban			
Segment Component		Majority (>50%)		Critical		Majority (>50%)		Critical		Majority (>50%)		Critical	
Side of Street		North	South	North	South	East	West	East	West	North	South	North	South
Pedestrian	PLOS Inputs												
	Posted Speed (km/h)	40 km/h		40 km/h		40 km/h		40 km/h		60 km/h		60 km/h	
	Two-Way ADT	9,400		9,400		412		412		14,107		14,107	
	Pedestrian Facility	Sidewalk	Sidewalk	Multi-Use Pathway	Sidewalk	None	Sidewalk	None	Sidewalk	None	None	Multi-Use Pathway	None
	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?	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	No
	Facility Width (m)	3.10m	2.00m	3.00m	2.00m	-	1.80m	-	1.80m	-	-	3.00m	-
	Offset from Motor Vehicle Travel Lanes (m)	≥ 3.0m	1.5-2.99m	≥ 3.0m	1.5-2.99m	-	< 0.5m	-	< 0.5m	< 0.5m	< 0.5m	≥ 3.0m	< 0.5m
	Presence of Adjacent Parking?	Yes	-	Yes	-	-	-	-	-	-	-	No	-
	General Purpose Curb Lane ADT	> 3000	> 3000	> 3000	> 3000	-	≤ 3000	-	≤ 3000	> 3000	> 3000	-	> 3000
	Max. Distance between Controlled Crossings (m)	> 400m	> 400m	> 400m	> 400m	-	-	-	-	-	-	231-260m	-
Score	3.75	3.75	3.75	3.75	0.00	3.50	0.00	3.50	0.00	0.00	4.50	0.00	
PLOS	B	B	B	B	F	B	F	B	F	F	A	F	
Target PLOS		C				C				C			
Bicycle	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Multi-Use Pathway	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Multi-Use Pathway	Paved Shoulder without Buffer
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-	-	-	-	-	No	No	-	No
	Facility Operation	-	-	-	-	-	-	-	-	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	Low to Moderate Volume MUP (≤ 100 users per hour)	-	-	-	-	-	-	-	Low to Moderate Volume MUP (≤ 100 users per hour)	-
	Facility Width	-	-	3.0-3.49m	-	-	-	-	-	1.2-1.49m	1.2-1.49m	3.0-3.49m	1.2-1.49m
	Boulevard/Buffer Width (excluding curb)	-	-	≥ 1.5m or any boulevard width with continuous traffic barrier	-	-	-	-	-	-	-	≥ 1.5m or any boulevard width with continuous traffic barrier	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	Roundabout	Roundabout	Roundabout	Roundabout	None	None	None	None	None	None	None	None
	Number of Travel Lanes at Crossing	≤ 2	≤ 2	≤ 2	≤ 2	-	-	-	-	-	-	-	-
	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
	Score	1.75	1.75	3.70	1.75	5.00	5.00	5.00	5.00	1.60	1.60	4.00	1.60
BLOS	D	D	B	D	A	A	A	A	D	D	B	D	
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						
	Expected Transit Running Time	Moderately Impeded	Moderately Impeded			Slightly Impeded	Slightly Impeded			Moderately Impeded	Moderately Impeded		
	Transit Travel Speed (if available)	40 km/h	40 km/h			40 km/h	40 km/h			60 km/h	60 km/h		
	TLOS	B	B			B	B			B	B		
Target TLOS		E (D for frequent transit routes)		E (D for frequent transit routes)		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	2.0-3.99m	2.0-3.99m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	0.5-1.49m			≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m		
	Transit Route on Segment?	Yes	Yes			No	No			Yes	Yes		
	Bus Stop Elements	Curbside platform with no shelter	Curbside platform with no shelter			-	-			No platform, landing zone or shelter	No platform, landing zone or shelter		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2				≤ 2				3			
	Score	20.40	18.90			15.00	21.30			7.80	7.80		
	PRLOS	C	C			D	B			E	E		
		C		C		C		E		E			

Multi-Modal Level of Service - Segments Form

Project: New OCSB High School - 5431 Fernbank Road

Consultant: Robinson Consultants

Date: Nov 28, 2025

Scenario: 2033 Future Conditions

Segment Name		Cope Drive - Rouncey to Terry Fox				Atlas Terrace - Cope to Atlas				Fernbank Road - Rouncey to Terry Fox			
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		North	South	North	South	East	West	East	West	North	South	North	South
Pedestrian	PLOS Inputs												
	Posted Speed (km/h)	40 km/h		40 km/h		40 km/h		40 km/h		60 km/h		60 km/h	
	Two-Way ADT	11,014		11,014		483		483		16,529		16,529	
	Pedestrian Facility	Sidewalk	Sidewalk	Multi-Use Pathway	Sidewalk	Sidewalk	Sidewalk	Sidewalk	Sidewalk	None	None	Multi-Use Pathway	None
	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?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
	Facility Width (m)	3.10m	2.00m	3.00m	2.00m	6.00m	1.80m	6.00m	1.80m	-	-	3.00m	-
	Offset from Motor Vehicle Travel Lanes (m)	≥ 3.0m	1.5-2.99m	≥ 3.0m	1.5-2.99m	≥ 3.0m	< 0.5m	< 0.5m	< 0.5m	< 0.5m	< 0.5m	≥ 3.0m	< 0.5m
	Presence of Adjacent Parking?	Yes	-	Yes	-	Yes	-	-	-	-	-	No	-
	General Purpose Curb Lane ADT	> 3000	> 3000	> 3000	> 3000	≤ 3000	≤ 3000	≤ 3000	≤ 3000	> 3000	> 3000	-	> 3000
	Max. Distance between Controlled Crossings (m)	> 400m	> 400m	> 400m	> 400m	-	-	-	-	-	-	231-260m	-
	Score	3.75	3.75	3.75	3.75	5.00	3.50	4.25	3.50	0.00	0.00	4.50	0.00
	PLOS	B	B	B	B	A	B	B	B	F	F	A	F
Target PLOS	B				B				B				
Bicycle	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Multi-Use Pathway	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Multi-Use Pathway	Paved Shoulder without Buffer
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-	-	-	-	-	No	No	-	No
	Facility Operation	-	-	-	-	-	-	-	-	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	Low to Moderate Volume MUP (≤ 100 users per hour)	-	-	-	-	-	-	-	Low to Moderate Volume MUP (≤ 100 users per hour)	-
	Facility Width	-	-	3.0-3.49m	-	-	-	-	-	1.5-1.99m	1.2-1.49m	3.0-3.49m	1.2-1.49m
	Boulevard/Buffer Width (excluding curb)	-	-	≥ 1.5m or any boulevard width with continuous traffic barrier	-	-	-	-	-	-	-	≥ 1.5m or any boulevard width with continuous traffic barrier	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	Roundabout	Roundabout	Roundabout	Roundabout	None	None	None	None	None	None	None	None
	Number of Travel Lanes at Crossing	≤ 2	≤ 2	≤ 2	≤ 2	-	-	-	-	-	-	-	-
	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
	Score	1.75	1.75	3.70	1.75	5.00	5.00	5.00	5.00	1.60	1.60	4.00	1.60
BLOS	D	D	B	D	A	A	A	A	D	D	B	D	
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						
	Expected Transit Running Time	Moderately Impeded	Moderately Impeded			Slightly Impeded	Slightly Impeded			Moderately Impeded	Moderately Impeded		
	Transit Travel Speed (if available)	40 km/h	40 km/h			40 km/h	40 km/h			60 km/h	60 km/h		
	TLOS	B	B			B	B			B	B		
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	2.0-3.99m	2.0-3.99m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	0.5-1.49m			≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width	≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m		
	Transit Route on Segment?	Yes	Yes			No	No			Yes	Yes		
	Bus Stop Elements	Curbside platform with no shelter	Curbside platform with no shelter			-	-			No platform, landing zone or shelter	No platform, landing zone or shelter		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2				≤ 2				3			
	Score	20.40	18.90			22.50	21.30			7.80	7.80		
	PRLOS	C	C			B	B			E	E		
	C					B				E			

Multi-Modal Level of Service - Intersections Form

Project: New OCSB High School - 5431 Fernbank Road
Consultant: Robinson Consultants
Date: Nov 28, 2025
Scenario: Existing conditions

Intersection Name		Terry Fox Drive / Cope Drive				Terry Fox Drive / Fernbank Road				Fernbank Road / Walmart access			
OP Transect / Policy Area		Outer Urban or Suburban				Outer Urban or Suburban				Outer Urban or Suburban			
Pedestrian	PLOS Inputs												
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	4	1-3	1-3	1-3	5	1-3	4	4	1-3	No Crosswalk	4	4
	Median Refuge (≥2.7m)	No	No	No	No	No	No	No	No	No	-	Yes	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)			110.0				110.0				74.0	
	Effective Walk Time (sec)	8.7	29.7	23.8	33.8	8.8	23.8	37.8	12.8	29.3	-	8.7	8.7
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR	WBR	EBR	NBR	SBR	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	Conventional Right-Turn Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	No Right-Turn / Prohib.	No Right-Turn / Prohib.	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive	-	Permissive	Permissive	Protected-Permissive	Permissive	-	-	Permissive
	Right-Turn Volume	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	-	-	≤ 150 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m	-	> 8m	> 8m	> 8m	> 8m	-	-	> 8m
	Cross-street Posted Speed (km/h)		80 km/h		40 km/h		70 km/h		60 km/h		60 km/h		50 km/h
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL
Bicycle	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)		20,878		9,400		14,450		14,253		4,419		15,441
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	Yes	Yes	Yes	No	Yes	Yes	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	WBL	EBL	NBL	SBL	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	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	No Left-Turn	General Purpose Through-Left or Single Left-Turn Lane	No Left-Turn	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	-	One Lane Crossed	-	No Lane Crossed
	Score	-30	-10	0	0	-40	0	-10	-40	50	60	100	60
	BLOS	F	F	F	F	F	F	F	F	D	D	B	D
Transit	Target BLOS	C				C				C			
	TLOS Inputs												
	Transit Facility	Mixed Traffic				Mixed Traffic				Mixed Traffic			
	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay (if available)	21-35 sec	56-80 sec	56-80 sec	36-55 sec	36-55 sec	56-80 sec	≤ 10 sec	> 80 sec			11-20 sec	≤ 10 sec
	Example Transit Priority Treatment	-	-	-	-	-	-	-	-	-	-	-	-
	TLOS	C	E	E	D	D	E	A	F	-	-	B	A
Auto	Target TLOS	D				D				A			
	Target TLOS	E (D for frequent transit routes)				E (D for frequent transit routes)				E (D for frequent transit routes)			
	AutoLOS Inputs												
	Overall Intersection Volume to Capacity Ratio	0.91 to 1.00				0.91 to 1.00				0.71 to 0.80			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	E				E				C			
	Target AutoLOS	E				E				E			

Multi-Modal Level of Service - Intersections Form

Project: New OCSB High School - 5431 Fernbank Road
Consultant: Robinson Consultants
Date: Nov 28, 2025
Scenario: 2033 Future Conditions

Intersection Name		Terry Fox Drive / Cope Drive				Terry Fox Drive / Fernbank Road				Fernbank Road / Walmart access			
OP Transect / Policy Area		Within 300m of school				Within 300m of school				Within 300m of school			
Pedestrian	PLOS Inputs												
	Pedestrians Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Number of Travel Lanes Crossed	4	1-3	1-3	1-3	5	1-3	4	4	1-3	No Crosswalk	4	4
	Median Refuge (≥2.7m)	No	No	No	No	No	No	No	No	No	-	Yes	No
	Crosswalk Treatment	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings	-	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)			120.0				120.0				69.0	
	Effective Walk Time (sec)	7.0	7.0	7.0	11.0	7.0	18.1	23.5	16.2	24.3	-	7.1	7.1
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	WBR	EBR	NBR	SBR	WBR	EBR	NBR	SBR	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	Conventional Right-Turn Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	Right-Turn With No Channel	No Right-Turn / Prohib.	No Right-Turn / Prohib.	Right-Turn With No Channel
	Right-Turn Signal Phasing	Permissive	Permissive	Permissive	Permissive	-	Permissive	Permissive	Protected-Permissive	Permissive	-	-	Permissive
	Right-Turn Volume	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	> 150 to 300 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	-	-	≤ 150 veh/h
	Right-Turn Effective Corner Radius	> 8m	> 8m	> 8m	> 8m	-	> 8m	> 8m	> 8m	> 8m	-	-	> 8m
	Cross-street Posted Speed (km/h)		80 km/h		40 km/h		70 km/h		60 km/h		60 km/h		50 km/h
Bicycle	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL	EBL	WBL	SBL	NBL
	Left-Turn Signal Phasing	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.	Perm or Prot+Perm	No Left-Turn / Prohib.
	Left-Turn Volume	> 100 veh/h	> 50 to 100 veh/h	> 100 veh/h	≤ 50 veh/h	> 100 veh/h	≤ 50 veh/h	> 100 veh/h	> 100 veh/h	≤ 50 veh/h	-	≤ 50 veh/h	-
	Left-Turn Opposing Lanes	-	≥ 2	-	-	-	-	-	-	-	-	-	-
	Score	2.90	3.80	3.95	4.15	2.30	3.70	3.35	3.35	4.45	-	4.60	3.85
	PLOS	C	B	B	B	D	B	C	C	B	-	A	B
		B				C				B			
	Target PLOS	B				B				B			
	BLOS Inputs												
	Cycling Route Classification	Elsewhere				Elsewhere				Elsewhere			
	Cyclists Crossing the	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg	North Leg	South Leg	East Leg	West Leg
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)		23,050		10,400		15,950		15,750		4,900		17,050
Transit	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	Yes	Yes	Yes	No	Yes	Yes	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	WBL	EBL	NBL	SBL	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	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	No Left-Turn	General Purpose Through-Left or Single Left-Turn Lane	No Left-Turn	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed	-	One Lane Crossed	-	No Lane Crossed
	Score	-30	-10	0	0	-40	0	-10	-40	50	60	100	60
	BLOS	F	F	F	F	F	F	F	F	D	D	B	D
		-				-				C			
	Target BLOS	C				C				C			
	TLOS Inputs												
	Transit Facility	Mixed Traffic				Mixed Traffic				Mixed Traffic			
Auto	Vehicles Travelling	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound
	Average Transit Delay (if available)	21-35 sec	56-80 sec	> 80 sec	21-35 sec	56-80 sec	> 80 sec	≤ 10 sec	56-80 sec			11-20 sec	≤ 10 sec
	Example Transit Priority Treatment	-	-	-	-	-	-	-	-	-	-	-	-
	TLOS	C	E	F	C	E	F	A	E	-	-	B	A
		D				D				A			
	Target TLOS	E (D for frequent transit routes)				E (D for frequent transit routes)				E (D for frequent transit routes)			
	AutoLOS Inputs												
	Overall Intersection Volume to Capacity Ratio	> 1.00				> 1.00				0.71 to 0.80			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	F				F				C			
	Target AutoLOS	E				E				E			

APPENDIX K
TDM Measures Checklist

TDM Measures Checklist

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

TDM Measure Legend:

Basic	The measure is generally feasible and effective, and in most cases would benefit the development and its users.
Better	The measure could maximize support for users of sustainable modes and optimize development performance.
*	The measure is one of the most dependably effective tools to encourage the use of sustainable modes.

TDM Measures Non-residential developments		Check if proposed and add descriptions	
	1	TDM PROGRAM MANAGEMENT	
	1.1	Program Coordinator	
Basic	*	1.1.1	Designate an internal coordinator, or contract with an external coordinator ☒ Resources available through OSTA and Envirocentre
	1.2	Travel Surveys	
Better		1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress ☐
	2	WALKING AND CYCLING	
	2.1	Information on walking/cycling routes & destinations	
Basic		2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances ☒
	2.2	Bicycle Skills Training	
Better	*	2.2.1	Offer on-site cycling courses for commuters, or subsidize off-site courses ☒ Resources available through OSTA and Envirocentre
	2.3	Valet Bike Parking	
Better		2.3.1	(Visitor Travel) Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games) ☐
	3	TRANSIT	
	3.1	Transit Information	
Basic		3.1.1	Display relevant transit schedules and route maps at entrances ☒
Basic		3.1.2	Provide online links to OC Transpo and STO information ☒
Better		3.1.3	Provide real-time arrival information display at entrances ☐
	3.2	Transit Fare Incentives	
Better		3.2.1	(Commuter Travel) Offer preloaded PRESTO cards to encourage commuters to use transit ☐
Better	*	3.2.2	(Commuter Travel) Subsidize or reimburse monthly transit pass purchases by employees ☐
Better		3.2.3	(Visitor Travel) Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games) ☐
	3.3	Enhanced Public Transit Service	
Better		3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends) ☒ Option to explore school route for areas not served by OSTA
Better		3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games) ☐
	3.4	Private Transit Service	
Better		3.4.1	(Commuter Travel) Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends) ☐

TDM Measures Non-residential developments			Check if proposed and add descriptions
Better	3.4.2	(Visitor Travel) Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐
	4	RIDESHARING	
	4.1	Ridematching Service	
Basic	* 4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
	4.2	Carpool parking price incentive	
Better	4.2.1	(Commuter Travel) Provide discounts on parking costs for registered carpools	☐
	4.3	Vanpool Service	
Better	4.3.1	(Commuter Travel) Provide a vanpooling service for long-distance commuters	☐
	5	CARSHARING & BIKESHARING	
	5.1	Bikeshare stations & membership	
Better	5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
Better	5.1.2	(commuter travel) Provide employees with bikeshare memberships for local business travel	☐
	5.2	Carshare vehicles & memberships	
Better	5.2.1	(commuter travel) Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
Better	5.2.2	(commuter travel) Provide employees with carshare memberships for local business travel	☐
	6	PARKING	
	6.1	Priced parking	
Basic	* 6.1.1	(commuter travel) Charge for long-term parking (daily, weekly, monthly)	☐
Basic	6.1.2	(commuter travel) Unbundle parking cost from lease rates at multi-tenant sites	☐
Better	6.1.3	(visitor travel) Charge for short-term parking (hourly)	☐
	7	TDM MARKETING & COMMUNICATIONS	
	7.1	Multimodal travel information	
Basic	* 7.1.1	Provide a multimodal travel option information package to new/relocating employees and students	☒
Better	* 7.1.2	(commuter travel) Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
	7.2	Personalized trip planning	
Better	* 7.2.1	Offer personalized trip planning to new / relocating employees	☐
	7.3	Promotions	
Better	7.3.1	(commuter travel) Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☒ Resources available through OSTA and Envirocentre

TDM Measures Non-residential developments			Check if proposed and add descriptions
	8	OTHER INCENTIVES & AMENITIES	
	8.1	Emergency ride home	
Better	8.1.1	(commuter travel) Provide emergency ride home service to non-driving commuters	☐
	8.2	Alternative work arrangements	

TDM Measures Non-residential developments			Check if proposed and add descriptions
Basic	8.2.1	(commuter travel) Encourage flexible work hours	☐
Better	8.2.2	(commuter travel) Encourage compressed workweeks	☐
Better	8.2.3	(commuter travel) Encourage telework	☐
	8.3	Local business travel options	
Basic	* 8.3.1	(commuter travel) Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
	8.4	Commuter incentives	
Better	8.4.1	(commuter travel) Offer employees a taxable, mode-neutral commuting allowance	☐
	8.5	On-site amenities	
Better	8.5.1	(commuter travel) Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

Adopted from City of Ottawa TIA Guidelines TDM Measures Checklist:

https://documents.ottawa.ca/sites/documents/files/tdm_measures_checklist_en.pdf

APPENDIX L

Future Total Traffic Analysis

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey Total AM 2028 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	14	10.0	14	10.0	0.099	4.7	LOS A	0.4	3.1	0.43	0.29	0.43	52.3
8	T1	All MCs	30	9.0	30	9.0	0.099	4.6	LOS A	0.4	3.1	0.43	0.29	0.43	53.6
18	R2	All MCs	40	21.0	40	21.0	0.099	5.8	LOS A	0.4	3.1	0.43	0.29	0.43	52.5
Approach			84	14.9	84	14.9	0.099	5.2	LOS A	0.4	3.1	0.43	0.29	0.43	52.9
East: Cope															
1	L2	All MCs	9	0.0	9	0.0	0.136	3.9	LOS A	0.6	4.8	0.28	0.13	0.28	54.1
6	T1	All MCs	120	5.0	120	5.0	0.136	4.3	LOS A	0.6	4.8	0.28	0.13	0.28	54.9
16	R2	All MCs	30	0.0	30	0.0	0.136	3.9	LOS A	0.6	4.8	0.28	0.13	0.28	54.7
Approach			159	3.8	159	3.8	0.136	4.2	LOS A	0.6	4.8	0.28	0.13	0.28	54.9
North: Rouncey															
7	L2	All MCs	43	10.0	43	10.0	0.151	4.8	LOS A	0.7	5.3	0.32	0.16	0.32	52.5
4	T1	All MCs	55	3.0	55	3.0	0.151	4.3	LOS A	0.7	5.3	0.32	0.16	0.32	54.0
14	R2	All MCs	69	8.0	69	8.0	0.151	4.6	LOS A	0.7	5.3	0.32	0.16	0.32	53.3
Approach			166	6.9	166	6.9	0.151	4.6	LOS A	0.7	5.3	0.32	0.16	0.32	53.3
West: Cope															
5	L2	All MCs	69	10.0	69	10.0	0.241	5.6	LOS A	1.2	9.6	0.30	0.14	0.30	52.2
2	T1	All MCs	186	1.0	186	1.0	0.241	4.9	LOS A	1.2	9.6	0.30	0.14	0.30	53.7
12	R2	All MCs	30	9.0	30	9.0	0.241	5.5	LOS A	1.2	9.6	0.30	0.14	0.30	52.9
Approach			285	4.0	285	4.0	0.241	5.1	LOS A	1.2	9.6	0.30	0.14	0.30	53.2
All Vehicles			694	6.0	694	6.0	0.241	4.8	LOS A	1.2	9.6	0.31	0.16	0.31	53.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

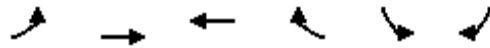
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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	42	671	669	66	27	41
Future Volume (vph)	42	671	669	66	27	41
Satd. Flow (prot)	1710	1731	1731	1500	1525	0
Flt Permitted	0.378				0.981	
Satd. Flow (perm)	680	1731	1731	1500	1525	0
Satd. Flow (RTOR)				51	41	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	4%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	671	669	66	68	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	57.1	57.1	57.1	57.1	7.2	
Actuated g/C Ratio	0.83	0.83	0.83	0.83	0.10	
v/c Ratio	0.07	0.47	0.47	0.05	0.35	
Control Delay	3.5	5.0	5.0	1.5	19.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.5	5.0	5.0	1.5	19.7	
LOS	A	A	A	A	B	
Approach Delay		4.9	4.7		19.7	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.2	30.1	30.0	0.4	3.5	
Queue Length 95th (m)	4.4	62.8	62.4	3.6	13.7	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	562	1431	1431	1249	537	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.47	0.47	0.05	0.13	
Intersection Summary						
Cycle Length: 69						
Actuated Cycle Length: 69						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 5.5

Intersection LOS: A

Intersection Capacity Utilization 51.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	292	281	2	200	88	362	285	7	74	270	131
Future Volume (vph)	108	292	281	2	200	88	362	285	7	74	270	131
Satd. Flow (prot)	1644	1800	1485	1710	1782	1378	1598	1757	0	1660	1765	1457
Flt Permitted	0.375			0.581			0.385			0.581		
Satd. Flow (perm)	641	1800	1453	1045	1782	1317	648	1757	0	1013	1765	1457
Satd. Flow (RTOR)			281			190		2				131
Confl. Peds. (#/hr)	12		1	1		12			2	2		
Confl. Bikes (#/hr)						4			1			
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 (%)	4%	0%	3%	0%	1%	11%	7%	2%	0%	3%	2%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	292	281	2	200	88	362	292	0	74	270	131
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.3
Total Split (s)	11.3	44.3	44.3	33.0	33.0	33.0	16.5	45.7		29.2	29.2	11.3
Total Split (%)	12.6%	49.2%	49.2%	36.7%	36.7%	36.7%	18.3%	50.8%		32.4%	32.4%	12.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	27.7	27.8	27.8	16.5	16.5	16.5	49.8	49.8		25.9	25.9	37.1
Actuated g/C Ratio	0.31	0.31	0.31	0.18	0.18	0.18	0.55	0.55		0.29	0.29	0.41
v/c Ratio	0.43	0.53	0.44	0.01	0.61	0.22	0.67	0.30		0.25	0.53	0.19
Control Delay	26.8	28.2	4.7	25.5	40.8	1.3	22.6	13.2		29.5	32.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	26.8	28.2	4.7	25.5	40.8	1.3	22.6	13.2		29.5	32.7	4.3
LOS	C	C	A	C	D	A	C	B		C	C	A
Approach Delay		18.3			28.7			18.4			24.4	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	14.8	44.4	0.0	0.3	34.3	0.0	34.5	25.6		10.8	43.1	0.0
Queue Length 95th (m)	22.5	56.5	14.5	1.9	48.1	0.0	#101.4	54.8		23.3	69.5	11.1
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	253	762	777	311	530	525	544	972		291	508	677
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.43	0.38	0.36	0.01	0.38	0.17	0.67	0.30		0.25	0.53	0.19
Intersection Summary												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 21.1

Intersection LOS: C

Intersection Capacity Utilization 78.0%

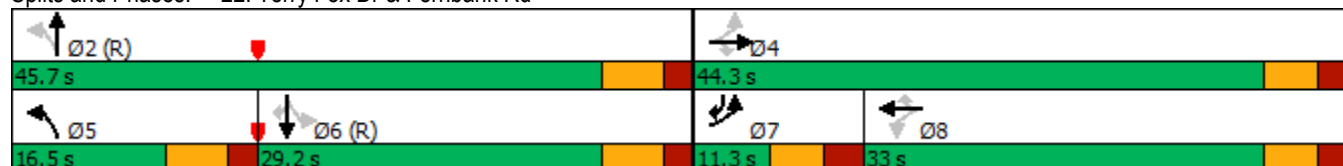
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	137	45	62	99	215	27	488	50	224	508	135
Future Volume (vph)	246	137	45	62	99	215	27	488	50	224	508	135
Satd. Flow (prot)	1541	1687	0	1629	1511	0	1710	1669	0	1710	1698	1471
Flt Permitted	0.171			0.643			0.477			0.197		
Satd. Flow (perm)	277	1687	0	1094	1511	0	854	1669	0	355	1698	1425
Satd. Flow (RTOR)		16			83			5				135
Confl. Peds. (#/hr)	2		4	4		2	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
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 (%)	11%	2%	2%	5%	7%	4%	0%	5%	17%	0%	6%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	182	0	62	314	0	27	538	0	224	508	135
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	20.0	52.4		32.4	32.4		50.6	50.6		17.0	67.6	67.6
Total Split (%)	16.7%	43.7%		27.0%	27.0%		42.2%	42.2%		14.2%	56.3%	56.3%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	43.3	42.8		22.8	22.8		47.4	47.4		64.9	64.7	64.7
Actuated g/C Ratio	0.36	0.36		0.19	0.19		0.40	0.40		0.54	0.54	0.54
v/c Ratio	0.99	0.30		0.30	0.89		0.08	0.81		0.70	0.56	0.16
Control Delay	85.5	25.8		44.3	60.7		25.5	44.4		29.1	21.9	3.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	85.5	25.8		44.3	60.7		25.5	44.4		29.1	21.9	3.0
LOS	F	C		D	E		C	D		C	C	A
Approach Delay		60.1			58.0			43.5			20.8	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	44.3	28.2		12.9	56.0		4.3	121.7		29.6	83.7	0.0
Queue Length 95th (m)	#94.0	46.2		26.4	#101.7		11.3	#186.2		#51.3	120.1	10.1
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	249	657		237	393		337	662		321	915	830
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	0.99	0.28		0.26	0.80		0.08	0.81		0.70	0.56	0.16
Intersection Summary												

Lanes, Volumes, Timings 25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 40.3

Intersection LOS: D

Intersection Capacity Utilization 97.8%

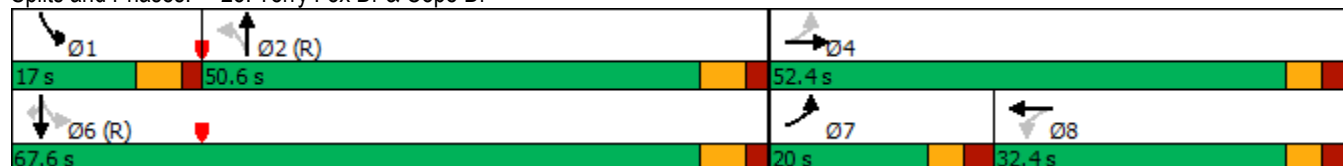
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

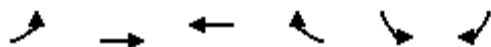
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

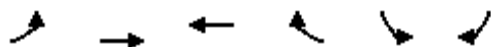


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	642	452	45	61	26
Future Volume (Veh/h)	7	642	452	45	61	26
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	642	452	45	61	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	497				1108	452
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	497				1108	452
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				73	96
cM capacity (veh/h)	1077				228	612
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	7	642	452	45	87	
Volume Left	7	0	0	0	61	
Volume Right	0	0	0	45	26	
cSH	1077	1700	1700	1700	280	
Volume to Capacity	0.01	0.38	0.27	0.03	0.31	
Queue Length 95th (m)	0.2	0.0	0.0	0.0	10.3	
Control Delay (s)	8.4	0.0	0.0	0.0	23.5	
Lane LOS	A				C	
Approach Delay (s)	0.1		0.0		23.5	
Approach LOS					C	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			47.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

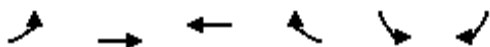


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	720	503	20	0	0
Future Volume (Veh/h)	0	720	503	20	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	720	503	20	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	523				1233	513
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	427				1207	416
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1021				184	580
Direction, Lane #	EB 1	WB 1				
Volume Total	720	523				
Volume Left	0	0				
Volume Right	0	20				
cSH	1021	1700				
Volume to Capacity	0.00	0.31				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		43.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	694	523	187	19	0
Future Volume (Veh/h)	25	694	523	187	19	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	25	694	523	187	19	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	710				1360	616
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	557				1333	445
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				86	100
cM capacity (veh/h)	858				139	517
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	719	710	19	0		
Volume Left	25	0	19	0		
Volume Right	0	187	0	0		
cSH	858	1700	139	1700		
Volume to Capacity	0.03	0.42	0.14	0.00		
Queue Length 95th (m)	0.7	0.0	3.7	0.0		
Control Delay (s)	0.8	0.0	34.9	0.0		
Lane LOS	A		D	A		
Approach Delay (s)	0.8	0.0	34.9			
Approach LOS			D			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			69.9%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

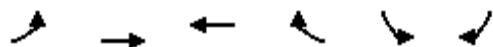
11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	292	29	99	172	22	205
Future Volume (Veh/h)	292	29	99	172	22	205
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	292	29	99	172	22	205
Pedestrians	1				9	
Lane Width (m)	3.6				3.6	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			330		686	316
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			330		686	316
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			92		94	71
cM capacity (veh/h)			1226		379	701
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	321	271	227			
Volume Left	0	99	22			
Volume Right	29	0	205			
cSH	1700	1226	648			
Volume to Capacity	0.19	0.08	0.35			
Queue Length 95th (m)	0.0	2.1	12.6			
Control Delay (s)	0.0	3.5	13.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	3.5	13.5			
Approach LOS			B			
Intersection Summary						
Average Delay		4.9				
Intersection Capacity Utilization		58.2%	ICU Level of Service	B		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

14: Atlas Ter/School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Traffic Volume (veh/h)	22	0	0	162	109	18
Future Volume (Veh/h)	22	0	0	162	109	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	22	0	0	162	109	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	162				125	81
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162				125	81
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				87	98
cM capacity (veh/h)	1429				861	985
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	22	162	127			
Volume Left	22	0	109			
Volume Right	0	162	18			
cSH	1429	1700	877			
Volume to Capacity	0.02	0.10	0.14			
Queue Length 95th (m)	0.4	0.0	4.0			
Control Delay (s)	7.6	0.0	9.8			
Lane LOS	A		A			
Approach Delay (s)	7.6	0.0	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			31.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	7	58	3	18	71
Future Volume (Veh/h)	11	7	58	3	18	71
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	7	58	3	18	71
Pedestrians	22		3			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	2		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	192	82			83	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	192	82			83	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	776	929			1499	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	18	61	89			
Volume Left	11	0	18			
Volume Right	7	3	0			
cSH	829	1700	1499			
Volume to Capacity	0.02	0.04	0.01			
Queue Length 95th (m)	0.5	0.0	0.3			
Control Delay (s)	9.4	0.0	1.6			
Lane LOS	A		A			
Approach Delay (s)	9.4	0.0	1.6			
Approach LOS	A					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		21.7%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	0	0	0	29	0	185	0	0	113	2
Future Volume (Veh/h)	14	0	0	0	0	29	0	185	0	0	113	2
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	14	0	0	0	0	29	0	185	0	0	113	2
Pedestrians	13			1								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	1			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	341	313	127	300	314	186	128				186	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	341	313	127	300	314	186	128				186	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	98	100	100	100	100	97	100				100	
cM capacity (veh/h)	584	598	919	650	598	861	1455				1399	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	29	185	115								
Volume Left	14	0	0	0								
Volume Right	0	29	0	2								
cSH	584	861	1455	1399								
Volume to Capacity	0.02	0.03	0.00	0.00								
Queue Length 95th (m)	0.6	0.8	0.0	0.0								
Control Delay (s)	11.3	9.3	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	11.3	9.3	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization				24.5%	ICU Level of Service			A				
Analysis Period (min)				15								

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey Total PM 2028 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed		
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h	
South: Rouncey																
3	L2	All MCs	12	30.0	12	30.0	0.090	6.4	LOS A	0.3	2.9	0.39	0.24	0.39	52.0	
8	T1	All MCs	41	9.0	41	9.0	0.090	4.5	LOS A	0.3	2.9	0.39	0.24	0.39	54.3	
18	R2	All MCs	33	4.0	33	4.0	0.090	4.1	LOS A	0.3	2.9	0.39	0.24	0.39	54.0	
Approach			86	10.0	86	10.0	0.090	4.6	LOS A	0.3	2.9	0.39	0.24	0.39	53.9	
East: Cope																
1	L2	All MCs	18	20.0	18	20.0	0.202	5.9	LOS A	1.0	7.6	0.28	0.13	0.28	52.5	
6	T1	All MCs	153	4.0	153	4.0	0.202	4.7	LOS A	1.0	7.6	0.28	0.13	0.28	54.5	
16	R2	All MCs	65	2.0	65	2.0	0.202	4.6	LOS A	1.0	7.6	0.28	0.13	0.28	54.1	
Approach			237	4.7	237	4.7	0.202	4.8	LOS A	1.0	7.6	0.28	0.13	0.28	54.2	
North: Rouncey																
7	L2	All MCs	36	10.0	36	10.0	0.104	4.7	LOS A	0.4	3.5	0.35	0.20	0.35	52.6	
4	T1	All MCs	33	0.0	33	0.0	0.104	3.9	LOS A	0.4	3.5	0.35	0.20	0.35	54.2	
14	R2	All MCs	45	0.0	45	0.0	0.104	3.9	LOS A	0.4	3.5	0.35	0.20	0.35	53.8	
Approach			113	3.2	113	3.2	0.104	4.2	LOS A	0.4	3.5	0.35	0.20	0.35	53.5	
West: Cope																
5	L2	All MCs	47	8.0	47	8.0	0.177	4.7	LOS A	0.8	6.6	0.25	0.11	0.25	52.9	
2	T1	All MCs	152	4.0	152	4.0	0.177	4.4	LOS A	0.8	6.6	0.25	0.11	0.25	54.2	
12	R2	All MCs	13	0.0	13	0.0	0.177	4.2	LOS A	0.8	6.6	0.25	0.11	0.25	53.9	
Approach			212	4.6	212	4.6	0.177	4.5	LOS A	0.8	6.6	0.25	0.11	0.25	53.9	
All Vehicles			648	5.1	648	5.1	0.202	4.6	LOS A	1.0	7.6	0.30	0.15	0.30	53.9	

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglöch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

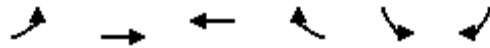
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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	74	534	779	163	120	148
Future Volume (vph)	74	534	779	163	120	148
Satd. Flow (prot)	1710	1782	1782	1530	1628	0
Flt Permitted	0.262				0.978	
Satd. Flow (perm)	472	1782	1782	1530	1628	0
Satd. Flow (RTOR)				109	97	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	534	779	163	268	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	44.4	44.4	44.4	44.4	13.0	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.19	
v/c Ratio	0.24	0.47	0.68	0.16	0.70	
Control Delay	9.6	9.1	13.5	3.1	25.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.6	9.1	13.5	3.1	25.5	
LOS	A	A	B	A	C	
Approach Delay		9.1	11.7		25.5	
Approach LOS		A	B		C	
Queue Length 50th (m)	3.6	31.6	57.4	2.3	21.2	
Queue Length 95th (m)	13.3	69.0	#135.0	11.1	39.7	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	303	1147	1147	1023	609	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.24	0.47	0.68	0.16	0.44	
Intersection Summary						
Cycle Length: 69						
Actuated Cycle Length: 69						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 82.6%

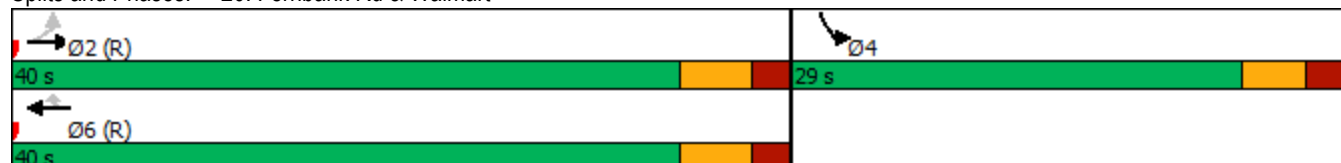
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	316	258	4	424	133	416	500	22	154	423	70
Future Volume (vph)	102	316	258	4	424	133	416	500	22	154	423	70
Satd. Flow (prot)	1693	1782	1485	1710	1800	1485	1676	1785	0	1693	1748	1485
Flt Permitted	0.121			0.569			0.179			0.471		
Satd. Flow (perm)	213	1782	1435	1015	1800	1399	316	1785	0	827	1748	1438
Satd. Flow (RTOR)			258			156		3				93
Confl. Peds. (#/hr)	19		7	7		19	5		13	13		5
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 (%)	1%	1%	3%	0%	0%	3%	2%	0%	0%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	316	258	4	424	133	416	522	0	154	423	70
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.3
Total Split (s)	11.4	44.4	44.4	33.0	33.0	33.0	29.0	65.6		36.6	36.6	11.4
Total Split (%)	10.4%	40.4%	40.4%	30.0%	30.0%	30.0%	26.4%	59.6%		33.3%	33.3%	10.4%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effect Green (s)	38.1	38.2	38.2	26.8	26.8	26.8	59.4	59.4		31.0	31.0	36.0
Actuated g/C Ratio	0.35	0.35	0.35	0.24	0.24	0.24	0.54	0.54		0.28	0.28	0.33
v/c Ratio	0.72	0.51	0.39	0.02	0.97	0.29	0.94	0.54		0.66	0.86	0.13
Control Delay	55.1	32.1	5.0	32.0	77.9	5.3	53.6	19.0		50.8	56.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	55.1	32.1	5.0	32.0	77.9	5.3	53.6	19.0		50.8	56.0	3.0
LOS	E	C	A	C	E	A	D	B		D	E	A
Approach Delay		25.2			60.3			34.3			49.0	
Approach LOS		C			E			C			D	
Queue Length 50th (m)	15.9	56.1	0.0	0.7	95.2	0.0	65.7	72.6		31.0	91.3	0.0
Queue Length 95th (m)	#34.3	84.2	17.4	3.7	#158.7	11.1	#126.3	104.1		#61.2	#147.8	5.8
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	142	618	666	247	438	458	452	965		233	493	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.72	0.51	0.39	0.02	0.97	0.29	0.92	0.54		0.66	0.86	0.13
Intersection Summary												
Cycle Length: 110												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Actuated Cycle Length: 110

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 40.7

Intersection LOS: D

Intersection Capacity Utilization 98.1%

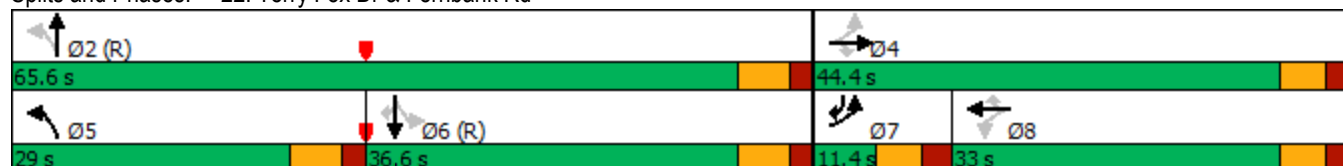
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	167	51	95	168	249	70	561	41	269	597	111
Future Volume (vph)	225	167	51	95	168	249	70	561	41	269	597	111
Satd. Flow (prot)	1676	1640	0	1644	1591	0	1613	1713	0	1693	1748	1485
Flt Permitted	0.121			0.622			0.411			0.084		
Satd. Flow (perm)	214	1640	0	1044	1591	0	689	1713	0	150	1748	1402
Satd. Flow (RTOR)		15			58			3				111
Confl. Peds. (#/hr)	1		18	18		1	12		2	2		12
Confl. Bikes (#/hr)			6			6			2			6
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 (%)	2%	1%	15%	4%	1%	1%	6%	3%	15%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	218	0	95	417	0	70	602	0	269	597	111
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	18.4	52.0		33.6	33.6		48.0	48.0		20.0	68.0	68.0
Total Split (%)	15.3%	43.3%		28.0%	28.0%		40.0%	40.0%		16.7%	56.7%	56.7%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	46.2	45.7		27.3	27.3		41.8	41.8		62.0	61.8	61.8
Actuated g/C Ratio	0.38	0.38		0.23	0.23		0.35	0.35		0.52	0.52	0.52
v/c Ratio	0.96	0.34		0.40	1.03		0.29	1.01		1.05	0.66	0.14
Control Delay	79.8	26.4		45.4	91.4		32.6	77.7		101.2	25.9	3.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	79.8	26.4		45.4	91.4		32.6	77.7		101.2	25.9	3.2
LOS	E	C		D	F		C	E		F	C	A
Approach Delay		53.6			82.8			73.0			44.1	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	40.1	35.3		20.1	~98.3		12.5	~149.6		~56.4	105.1	0.0
Queue Length 95th (m)	#91.1	56.3		37.8	#163.4		26.0	#228.5		#112.0	147.3	9.1
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	235	633		237	406		240	598		257	900	775
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	0.96	0.34		0.40	1.03		0.29	1.01		1.05	0.66	0.14
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 60.8

Intersection LOS: E

Intersection Capacity Utilization 108.5%

ICU Level of Service G

Analysis Period (min) 15

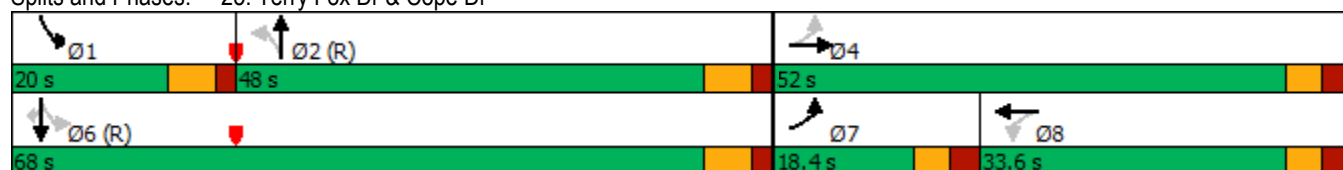
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

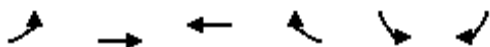
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

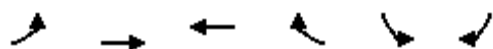


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	563	747	94	41	35
Future Volume (Veh/h)	14	563	747	94	41	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	14	563	747	94	41	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	841				1338	747
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841				1338	747
tC, single (s)	4.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.7	3.3
p0 queue free %	98				72	91
cM capacity (veh/h)	803				149	411
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	14	563	747	94	76	
Volume Left	14	0	0	0	41	
Volume Right	0	0	0	94	35	
cSH	803	1700	1700	1700	211	
Volume to Capacity	0.02	0.33	0.44	0.06	0.36	
Queue Length 95th (m)	0.4	0.0	0.0	0.0	12.4	
Control Delay (s)	9.6	0.0	0.0	0.0	31.4	
Lane LOS	A				D	
Approach Delay (s)	0.2		0.0		31.4	
Approach LOS					D	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			52.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

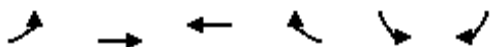


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	604	926	0	0	0
Future Volume (Veh/h)	0	604	926	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	604	926	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.69				0.69	0.69
vC, conflicting volume	926				1530	926
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	666				1544	666
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	642				88	319
Direction, Lane #	EB 1	WB 1				
Volume Total	604	926				
Volume Left	0	0				
Volume Right	0	0				
cSH	642	1700				
Volume to Capacity	0.00	0.54				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		54.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	604	926	0	8	0
Future Volume (Veh/h)	0	604	926	0	8	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	604	926	0	8	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.69				0.69	0.69
vC, conflicting volume	926				1530	926
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	672				1543	672
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	100
cM capacity (veh/h)	643				89	318
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	604	926	8	0		
Volume Left	0	0	8	0		
Volume Right	0	0	0	0		
cSH	643	1700	89	1700		
Volume to Capacity	0.00	0.54	0.09	0.00		
Queue Length 95th (m)	0.0	0.0	2.3	0.0		
Control Delay (s)	0.0	0.0	49.6	0.0		
Lane LOS			E	A		
Approach Delay (s)	0.0	0.0	49.6			
Approach LOS			E			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			61.4%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

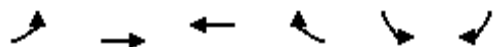
11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	281	2	41	330	9	108
Future Volume (Veh/h)	281	2	41	330	9	108
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	281	2	41	330	9	108
Pedestrians	4			3	10	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			293		708	295
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			293		708	295
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		98	85
cM capacity (veh/h)			1269		387	741
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	283	371	117			
Volume Left	0	41	9			
Volume Right	2	0	108			
cSH	1700	1269	692			
Volume to Capacity	0.17	0.03	0.17			
Queue Length 95th (m)	0.0	0.8	4.8			
Control Delay (s)	0.0	1.2	11.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	11.3			
Approach LOS			B			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			54.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

14: Atlas Ter/School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↗		↘	
Traffic Volume (veh/h)	30	0	0	64	0	7
Future Volume (Veh/h)	30	0	0	64	0	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	0	0	64	0	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	64				92	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64				92	32
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1526				895	1048
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	30	64	7			
Volume Left	30	0	0			
Volume Right	0	64	7			
cSH	1526	1700	1048			
Volume to Capacity	0.02	0.04	0.01			
Queue Length 95th (m)	0.5	0.0	0.2			
Control Delay (s)	7.4	0.0	8.5			
Lane LOS	A		A			
Approach Delay (s)	7.4	0.0	8.5			
Approach LOS			A			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			18.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	3	117	11	18	66
Future Volume (Veh/h)	3	3	117	11	18	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	3	117	11	18	66
Pedestrians	14		5			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	244	136			142	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	244	136			142	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			99	
cM capacity (veh/h)	728	907			1400	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	6	128	84			
Volume Left	3	0	18			
Volume Right	3	11	0			
cSH	808	1700	1400			
Volume to Capacity	0.01	0.08	0.01			
Queue Length 95th (m)	0.2	0.0	0.3			
Control Delay (s)	9.5	0.0	1.7			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	1.7			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			27.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	0	0	0	11	0	94	0	0	22	13
Future Volume (Veh/h)	7	0	0	0	0	11	0	94	0	0	22	13
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	7	0	0	0	0	11	0	94	0	0	22	13
Pedestrians	16			1			2			1		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	1			0			0			0		
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	150	140	46	126	146	96	51				95	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	150	140	46	126	146	96	51				95	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	100	100	100	99	100				100	
cM capacity (veh/h)	792	745	1013	842	738	964	1547				1510	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	7	11	94	35								
Volume Left	7	0	0	0								
Volume Right	0	11	0	13								
cSH	792	964	1547	1510								
Volume to Capacity	0.01	0.01	0.00	0.00								
Queue Length 95th (m)	0.2	0.3	0.0	0.0								
Control Delay (s)	9.6	8.8	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	9.6	8.8	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				1.1								
Intersection Capacity Utilization				20.7%	ICU Level of Service				A			
Analysis Period (min)				15								

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey Total AM 2033 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	15	10.0	15	10.0	0.113	5.0	LOS A	0.4	3.5	0.46	0.32	0.46	52.1
8	T1	All MCs	34	9.0	34	9.0	0.113	4.9	LOS A	0.4	3.5	0.46	0.32	0.46	53.3
18	R2	All MCs	44	21.0	44	21.0	0.113	6.2	LOS A	0.4	3.5	0.46	0.32	0.46	52.3
Approach			93	14.8	93	14.8	0.113	5.5	LOS A	0.4	3.5	0.46	0.32	0.46	52.6
East: Cope															
1	L2	All MCs	9	0.0	9	0.0	0.149	4.1	LOS A	0.7	5.3	0.30	0.15	0.30	54.0
6	T1	All MCs	130	5.0	130	5.0	0.149	4.5	LOS A	0.7	5.3	0.30	0.15	0.30	54.8
16	R2	All MCs	34	0.0	34	0.0	0.149	4.1	LOS A	0.7	5.3	0.30	0.15	0.30	54.6
Approach			173	3.8	173	3.8	0.149	4.4	LOS A	0.7	5.3	0.30	0.15	0.30	54.7
North: Rouncey															
7	L2	All MCs	48	10.0	48	10.0	0.170	5.0	LOS A	0.8	6.1	0.33	0.18	0.33	52.4
4	T1	All MCs	61	3.0	61	3.0	0.170	4.5	LOS A	0.8	6.1	0.33	0.18	0.33	53.8
14	R2	All MCs	76	8.0	76	8.0	0.170	4.9	LOS A	0.8	6.1	0.33	0.18	0.33	53.1
Approach			185	6.9	185	6.9	0.170	4.8	LOS A	0.8	6.1	0.33	0.18	0.33	53.1
West: Cope															
5	L2	All MCs	76	10.0	76	10.0	0.270	5.9	LOS A	1.4	11.0	0.32	0.16	0.32	51.9
2	T1	All MCs	203	2.0	203	2.0	0.270	5.3	LOS A	1.4	11.0	0.32	0.16	0.32	53.4
12	R2	All MCs	34	9.0	34	9.0	0.270	5.8	LOS A	1.4	11.0	0.32	0.16	0.32	52.6
Approach			313	4.7	313	4.7	0.270	5.5	LOS A	1.4	11.0	0.32	0.16	0.32	52.9
All Vehicles			763	6.2	763	6.2	0.270	5.1	LOS A	1.4	11.0	0.34	0.18	0.34	53.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

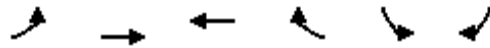
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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	47	738	717	73	29	46
Future Volume (vph)	47	738	717	73	29	46
Satd. Flow (prot)	1710	1731	1731	1500	1521	0
Flt Permitted	0.346				0.981	
Satd. Flow (perm)	623	1731	1731	1467	1521	0
Satd. Flow (RTOR)				53	46	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	4%	4%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	738	717	73	75	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	53.5	53.5	53.5	53.5	7.3	
Actuated g/C Ratio	0.78	0.78	0.78	0.78	0.11	
v/c Ratio	0.10	0.55	0.53	0.06	0.37	
Control Delay	3.9	6.5	6.3	1.7	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.9	6.5	6.3	1.7	19.6	
LOS	A	A	A	A	B	
Approach Delay		6.4	5.9		19.6	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.4	35.5	33.9	0.6	3.7	
Queue Length 95th (m)	5.0	75.9	72.0	4.0	14.4	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	483	1342	1342	1149	539	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.55	0.53	0.06	0.14	
Intersection Summary						
Cycle Length: 69						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

Actuated Cycle Length: 69

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 6.7

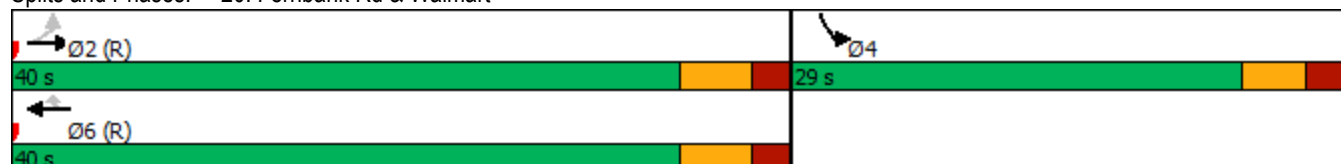
Intersection LOS: A

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	322	308	2	220	97	387	315	8	82	298	138
Future Volume (vph)	120	322	308	2	220	97	387	315	8	82	298	138
Satd. Flow (prot)	1644	1800	1485	1710	1782	1378	1598	1757	0	1660	1765	1457
Flt Permitted	0.352			0.566			0.321			0.565		
Satd. Flow (perm)	602	1800	1453	1018	1782	1317	540	1757	0	985	1765	1457
Satd. Flow (RTOR)			308			190		2				138
Confl. Peds. (#/hr)	12		1	1		12			2	2		
Confl. Bikes (#/hr)						4			1			
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 (%)	4%	0%	3%	0%	1%	11%	7%	2%	0%	3%	2%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	322	308	2	220	97	387	323	0	82	298	138
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.3
Total Split (s)	11.3	44.3	44.3	33.0	33.0	33.0	16.0	45.7		29.7	29.7	11.3
Total Split (%)	12.6%	49.2%	49.2%	36.7%	36.7%	36.7%	17.8%	50.8%		33.0%	33.0%	12.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	28.5	28.6	28.6	17.3	17.3	17.3	49.0	49.0		23.5	23.5	34.7
Actuated g/C Ratio	0.32	0.32	0.32	0.19	0.19	0.19	0.54	0.54		0.26	0.26	0.39
v/c Ratio	0.48	0.56	0.46	0.01	0.64	0.24	0.74	0.34		0.32	0.65	0.21
Control Delay	28.1	28.6	4.6	25.0	41.3	1.4	27.2	14.0		31.0	37.2	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	28.1	28.6	4.6	25.0	41.3	1.4	27.2	14.0		31.0	37.2	4.3
LOS	C	C	A	C	D	A	C	B		C	D	A
Approach Delay		18.7			29.1			21.2			27.4	
Approach LOS		B			C			C			C	
Queue Length 50th (m)	16.2	49.1	0.0	0.3	37.7	0.0	38.8	29.8		12.1	48.2	0.0
Queue Length 95th (m)	24.7	62.7	15.1	1.9	52.8	0.0	#127.6	61.1		25.3	76.5	11.3
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	248	762	792	303	530	525	520	957		257	460	646
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.48	0.42	0.39	0.01	0.42	0.18	0.74	0.34		0.32	0.65	0.21
Intersection Summary												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 22.9

Intersection LOS: C

Intersection Capacity Utilization 82.5%

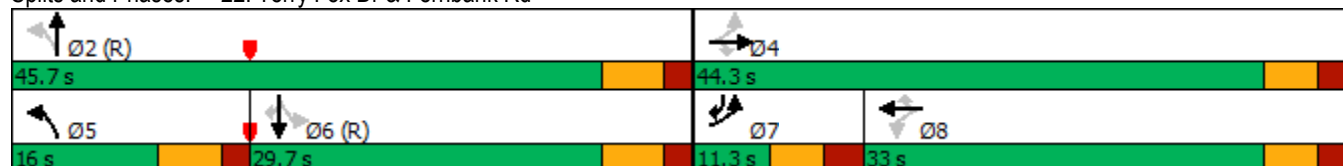
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	149	49	68	109	238	29	539	55	246	554	141
Future Volume (vph)	256	149	49	68	109	238	29	539	55	246	554	141
Satd. Flow (prot)	1541	1687	0	1629	1506	0	1710	1669	0	1710	1698	1471
Flt Permitted	0.146			0.633			0.442			0.099		
Satd. Flow (perm)	236	1687	0	1078	1506	0	792	1669	0	178	1698	1425
Satd. Flow (RTOR)		16			84			5				141
Confl. Peds. (#/hr)	2		4	4		2	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
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 (%)	11%	2%	2%	5%	8%	4%	0%	5%	17%	0%	6%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	256	198	0	68	347	0	29	594	0	246	554	141
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	21.7	54.0		32.3	32.3		49.0	49.0		17.0	66.0	66.0
Total Split (%)	18.1%	45.0%		26.9%	26.9%		40.8%	40.8%		14.2%	55.0%	55.0%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	46.7	46.2		24.5	24.5		42.8	42.8		61.5	61.3	61.3
Actuated g/C Ratio	0.39	0.38		0.20	0.20		0.36	0.36		0.51	0.51	0.51
v/c Ratio	0.97	0.30		0.31	0.93		0.10	0.99		0.98	0.64	0.18
Control Delay	79.5	24.5		44.1	67.2		27.2	73.9		81.7	26.0	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	79.5	24.5		44.1	67.2		27.2	73.9		81.7	26.0	3.1
LOS	E	C		D	E		C	E		F	C	A
Approach Delay		55.5			63.4			71.7			37.1	
Approach LOS		E			E			E			D	
Queue Length 50th (m)	46.6	30.2		14.2	65.4		4.8	144.5		~48.5	99.0	0.0
Queue Length 95th (m)	#100.5	49.2		28.4	#121.3		12.2	#224.1		#102.0	139.7	10.5
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	264	680		233	392		282	598		251	867	796
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	0.97	0.29		0.29	0.89		0.10	0.99		0.98	0.64	0.18
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 53.9

Intersection LOS: D

Intersection Capacity Utilization 104.7%

ICU Level of Service G

Analysis Period (min) 15

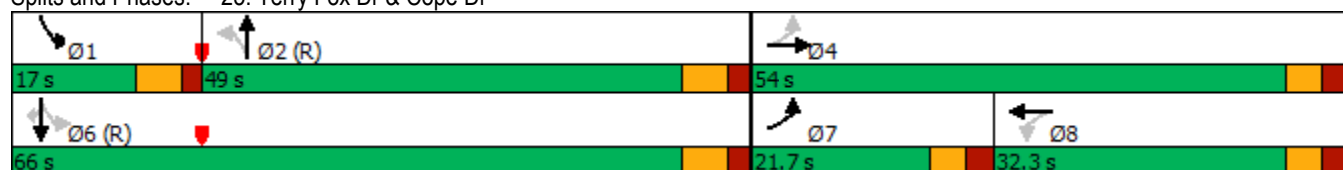
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

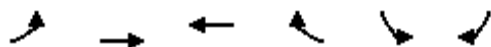
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

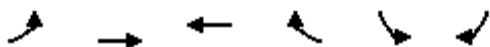


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	706	499	50	67	29
Future Volume (Veh/h)	7	706	499	50	67	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	706	499	50	67	29
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	549				1219	499
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	549				1219	499
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				66	95
cM capacity (veh/h)	1031				195	576
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	7	706	499	50	96	
Volume Left	7	0	0	0	67	
Volume Right	0	0	0	50	29	
cSH	1031	1700	1700	1700	244	
Volume to Capacity	0.01	0.42	0.29	0.03	0.39	
Queue Length 95th (m)	0.2	0.0	0.0	0.0	14.2	
Control Delay (s)	8.5	0.0	0.0	0.0	29.1	
Lane LOS	A				D	
Approach Delay (s)	0.1		0.0		29.1	
Approach LOS					D	
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			51.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

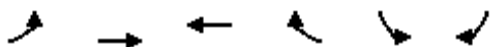


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	25	792	555	20	0	0
Future Volume (Veh/h)	25	792	555	20	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	25	792	555	20	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.87				0.87	0.87
vC, conflicting volume	575				1407	565
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436				1393	425
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	100
cM capacity (veh/h)	986				134	551
Direction, Lane #	EB 1	WB 1				
Volume Total	817	575				
Volume Left	25	0				
Volume Right	0	20				
cSH	986	1700				
Volume to Capacity	0.03	0.34				
Queue Length 95th (m)	0.6	0.0				
Control Delay (s)	0.7	0.0				
Lane LOS	A					
Approach Delay (s)	0.7	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		68.6%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	766	575	187	19	0
Future Volume (Veh/h)	25	766	575	187	19	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	25	766	575	187	19	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.80				0.80	0.80
vC, conflicting volume	762				1484	668
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	579				1481	462
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				82	100
cM capacity (veh/h)	805				108	484
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	791	762	19	0		
Volume Left	25	0	19	0		
Volume Right	0	187	0	0		
cSH	805	1700	108	1700		
Volume to Capacity	0.03	0.45	0.18	0.00		
Queue Length 95th (m)	0.8	0.0	4.8	0.0		
Control Delay (s)	0.8	0.0	45.2	0.0		
Lane LOS	A		E	A		
Approach Delay (s)	0.8	0.0	45.2			
Approach LOS			E			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			73.9%		ICU Level of Service	D
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

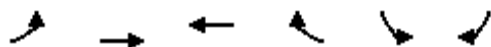
11-28-2025

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↰	↰	
Traffic Volume (veh/h)	322	29	101	190	23	208
Future Volume (Veh/h)	322	29	101	190	23	208
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	322	29	101	190	23	208
Pedestrians	1				9	
Lane Width (m)	3.6				3.6	
Walking Speed (m/s)	1.2				1.2	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			360		738	346
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			360		738	346
tC, single (s)			4.1		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			92		93	69
cM capacity (veh/h)			1195		352	675
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	351	291	231			
Volume Left	0	101	23			
Volume Right	29	0	208			
cSH	1700	1195	618			
Volume to Capacity	0.21	0.08	0.37			
Queue Length 95th (m)	0.0	2.2	13.8			
Control Delay (s)	0.0	3.4	14.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	3.4	14.3			
Approach LOS			B			
Intersection Summary						
Average Delay		4.9				
Intersection Capacity Utilization		61.2%	ICU Level of Service	B		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

14: Atlas Ter/School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Traffic Volume (veh/h)	25	0	0	162	109	20
Future Volume (Veh/h)	25	0	0	162	109	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	25	0	0	162	109	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	162				131	81
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162				131	81
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				87	98
cM capacity (veh/h)	1429				853	985
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	25	162	129			
Volume Left	25	0	109			
Volume Right	0	162	20			
cSH	1429	1700	871			
Volume to Capacity	0.02	0.10	0.15			
Queue Length 95th (m)	0.4	0.0	4.2			
Control Delay (s)	7.6	0.0	9.9			
Lane LOS	A		A			
Approach Delay (s)	7.6	0.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			4.6			
Intersection Capacity Utilization		31.6%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	8	64	4	20	79
Future Volume (Veh/h)	12	8	64	4	20	79
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	12	8	64	4	20	79
Pedestrians	22		3			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	2		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	210	88			90	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210	88			90	
tC, single (s)	6.4	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.2	
p0 queue free %	98	99			99	
cM capacity (veh/h)	756	921			1490	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	20	68	99			
Volume Left	12	0	20			
Volume Right	8	4	0			
cSH	815	1700	1490			
Volume to Capacity	0.02	0.04	0.01			
Queue Length 95th (m)	0.6	0.0	0.3			
Control Delay (s)	9.5	0.0	1.6			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	1.6			
Approach LOS	A					
Intersection Summary						
Average Delay		1.9				
Intersection Capacity Utilization		22.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	0	0	0	29	0	187	0	0	113	2
Future Volume (Veh/h)	15	0	0	0	0	29	0	187	0	0	113	2
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	15	0	0	0	0	29	0	187	0	0	113	2
Pedestrians	13			1								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	1			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	343	315	127	302	316	188	128				188	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	343	315	127	302	316	188	128				188	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	97	100	100	100	100	97	100				100	
cM capacity (veh/h)	583	597	919	648	596	858	1455				1397	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	15	29	187	115								
Volume Left	15	0	0	0								
Volume Right	0	29	0	2								
cSH	583	858	1455	1397								
Volume to Capacity	0.03	0.03	0.00	0.00								
Queue Length 95th (m)	0.6	0.8	0.0	0.0								
Control Delay (s)	11.3	9.3	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	11.3	9.3	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization				24.7%	ICU Level of Service			A				
Analysis Period (min)				15								

MOVEMENT SUMMARY

 Site: 101 [Cope / Rouncey Total PM 2033 (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Rouncey															
3	L2	All MCs	13	30.0	13	30.0	0.101	6.7	LOS A	0.4	3.2	0.41	0.27	0.41	51.8
8	T1	All MCs	45	9.0	45	9.0	0.101	4.7	LOS A	0.4	3.2	0.41	0.27	0.41	54.1
18	R2	All MCs	36	4.0	36	4.0	0.101	4.3	LOS A	0.4	3.2	0.41	0.27	0.41	53.8
Approach			93	10.0	93	10.0	0.101	4.8	LOS A	0.4	3.2	0.41	0.27	0.41	53.7
East: Cope															
1	L2	All MCs	197	20.0	197	20.0	0.399	8.0	LOS A	2.3	18.9	0.38	0.18	0.38	49.6
6	T1	All MCs	168	4.0	168	4.0	0.399	6.8	LOS A	2.3	18.9	0.38	0.18	0.38	51.4
16	R2	All MCs	72	2.0	72	2.0	0.399	6.6	LOS A	2.3	18.9	0.38	0.18	0.38	51.0
Approach			437	10.9	437	10.9	0.399	7.3	LOS A	2.3	18.9	0.38	0.18	0.38	50.5
North: Rouncey															
7	L2	All MCs	40	10.0	40	10.0	0.146	6.5	LOS A	0.6	4.7	0.52	0.39	0.52	51.6
4	T1	All MCs	36	0.0	36	0.0	0.146	5.3	LOS A	0.6	4.7	0.52	0.39	0.52	53.0
14	R2	All MCs	49	0.0	49	0.0	0.146	5.3	LOS A	0.6	4.7	0.52	0.39	0.52	52.6
Approach			125	3.2	125	3.2	0.146	5.7	LOS A	0.6	4.7	0.52	0.39	0.52	52.4
West: Cope															
5	L2	All MCs	52	8.0	52	8.0	0.249	6.6	LOS A	1.1	9.0	0.49	0.34	0.49	51.5
2	T1	All MCs	168	4.0	168	4.0	0.249	6.2	LOS A	1.1	9.0	0.49	0.34	0.49	52.8
12	R2	All MCs	14	0.0	14	0.0	0.249	5.8	LOS A	1.1	9.0	0.49	0.34	0.49	52.5
Approach			235	4.6	235	4.6	0.249	6.3	LOS A	1.1	9.0	0.49	0.34	0.49	52.5
All Vehicles			890	8.1	890	8.1	0.399	6.5	LOS A	2.3	18.9	0.43	0.26	0.43	51.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if $v/c > 1$ irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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

Gap-Acceptance Capacity Formula: Sieglösch M1 implied by US HCM 6 Roundabout Capacity Model.

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.

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Project: C:\Users\Ahowell\OneDrive - Robinson Consultants\Working - Projects\25085 Fernbank HS TIA\04 Analysis\Fernbank HS TIA Roundabouts.sip9

Lanes, Volumes, Timings
20: Fernbank Rd & Walmart

11-28-2025



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	82	588	860	180	132	163
Future Volume (vph)	82	588	860	180	132	163
Satd. Flow (prot)	1710	1782	1782	1530	1628	0
Flt Permitted	0.202				0.978	
Satd. Flow (perm)	364	1782	1782	1530	1628	0
Satd. Flow (RTOR)				109	97	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	588	860	180	295	0
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		2	6		4	
Permitted Phases	2			6		
Detector Phase	2	2	6	6	4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	
Minimum Split (s)	22.7	22.7	22.7	22.7	28.9	
Total Split (s)	40.0	40.0	40.0	40.0	29.0	
Total Split (%)	58.0%	58.0%	58.0%	58.0%	42.0%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.3	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.9	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	
Act Effect Green (s)	43.3	43.3	43.3	43.3	14.1	
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.20	
v/c Ratio	0.36	0.53	0.77	0.18	0.72	
Control Delay	14.3	10.6	17.9	3.7	26.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.3	10.6	17.9	3.7	26.3	
LOS	B	B	B	A	C	
Approach Delay		11.1	15.4		26.3	
Approach LOS		B	B		C	
Queue Length 50th (m)	4.7	38.7	73.3	3.3	24.7	
Queue Length 95th (m)	19.1	83.6	#178.4	13.3	43.6	
Internal Link Dist (m)		173.2	219.3		267.3	
Turn Bay Length (m)	135.0			32.0		
Base Capacity (vph)	228	1117	1117	999	609	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.36	0.53	0.77	0.18	0.48	
Intersection Summary						
Cycle Length: 69						
Actuated Cycle Length: 69						

Lanes, Volumes, Timings

20: Fernbank Rd & Walmart

11-28-2025

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 88.8%

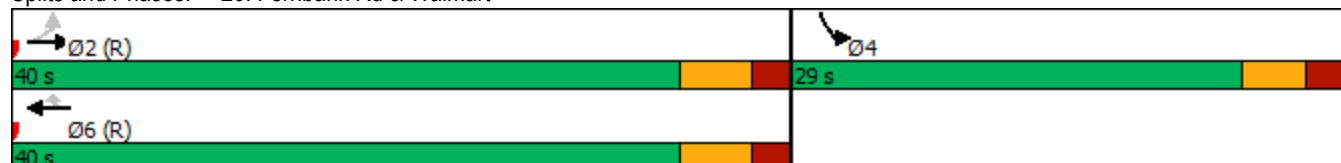
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 20: Fernbank Rd & Walmart



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	349	284	5	469	146	459	551	25	170	467	77
Future Volume (vph)	112	349	284	5	469	146	459	551	25	170	467	77
Satd. Flow (prot)	1693	1782	1485	1710	1800	1485	1676	1783	0	1693	1748	1485
Flt Permitted	0.107			0.533			0.104			0.448		
Satd. Flow (perm)	191	1782	1428	950	1800	1378	184	1783	0	786	1748	1435
Satd. Flow (RTOR)			284			146		3				85
Confl. Peds. (#/hr)	19		7	7		19	5		13	13		5
Confl. Bikes (#/hr)			3			8			2			1
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 (%)	1%	1%	3%	0%	0%	3%	2%	0%	0%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	349	284	5	469	146	459	576	0	170	467	77
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.2	33.2	33.2	33.2	33.2	11.2	29.2		29.2	29.2	11.3
Total Split (s)	11.4	48.6	48.6	37.2	37.2	37.2	33.0	71.4		38.4	38.4	11.4
Total Split (%)	9.5%	40.5%	40.5%	31.0%	31.0%	31.0%	27.5%	59.5%		32.0%	32.0%	9.5%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	42.3	42.4	42.4	31.0	31.0	31.0	65.2	65.2		32.2	32.2	37.2
Actuated g/C Ratio	0.35	0.35	0.35	0.26	0.26	0.26	0.54	0.54		0.27	0.27	0.31
v/c Ratio	0.85	0.55	0.41	0.02	1.01	0.31	1.06	0.59		0.81	1.00	0.15
Control Delay	79.1	35.3	5.0	33.8	88.6	7.5	94.4	21.6		64.2	77.5	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	79.1	35.3	5.0	33.8	88.6	7.5	94.4	21.6		64.2	77.5	5.7
LOS	E	D	A	C	F	A	F	C		E	E	A
Approach Delay		30.4			69.1			53.9			66.6	
Approach LOS		C			E			D			E	
Queue Length 50th (m)	19.1	69.0	0.0	0.9	~118.4	0.0	~109.6	91.9		27.2	93.4	0.4
Queue Length 95th (m)	#46.1	100.1	18.6	4.4	#188.5	16.5	#176.7	128.4		m#70.0	#184.4	m4.3
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	131	629	688	245	465	464	433	970		210	469	505
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.85	0.55	0.41	0.02	1.01	0.31	1.06	0.59		0.81	1.00	0.15
Intersection Summary												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 54.2

Intersection LOS: D

Intersection Capacity Utilization 106.1%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

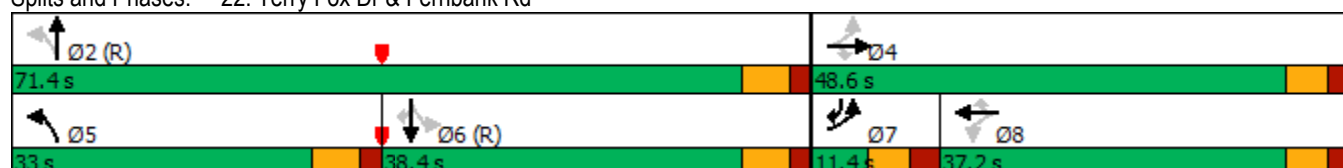
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	183	56	105	185	275	77	619	45	293	660	123
Future Volume (vph)	243	183	56	105	185	275	77	619	45	293	660	123
Satd. Flow (prot)	1676	1640	0	1644	1591	0	1613	1712	0	1693	1748	1485
Flt Permitted	0.121			0.487			0.346			0.079		
Satd. Flow (perm)	213	1640	0	820	1591	0	581	1712	0	141	1748	1402
Satd. Flow (RTOR)		14			57			3				123
Confl. Peds. (#/hr)	1		18	18		1	12		2	2		12
Confl. Bikes (#/hr)			6			6			2			6
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 (%)	2%	1%	15%	4%	1%	1%	6%	3%	16%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	239	0	105	460	0	77	664	0	293	660	123
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	17.0	50.0		33.0	33.0		51.0	51.0		19.0	70.0	70.0
Total Split (%)	14.2%	41.7%		27.5%	27.5%		42.5%	42.5%		15.8%	58.3%	58.3%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lag			Lead	Lead		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	44.2	43.7		26.7	26.7		44.8	44.8		64.0	63.8	63.8
Actuated g/C Ratio	0.37	0.36		0.22	0.22		0.37	0.37		0.53	0.53	0.53
v/c Ratio	1.13	0.39		0.58	1.16		0.36	1.04		1.21	0.71	0.15
Control Delay	145.0	29.0		55.8	131.9		24.8	73.3		155.3	26.5	2.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	145.0	29.0		55.8	131.9		24.8	73.3		155.3	26.5	2.9
LOS	F	C		E	F		C	E		F	C	A
Approach Delay		87.5			117.8			68.3			58.8	
Approach LOS		F			F			E			E	
Queue Length 50th (m)	~54.5	40.9		23.4	~123.3		12.9	~178.4		~72.8	118.3	0.0
Queue Length 95th (m)	#108.0	64.0		43.8	#190.4		m22.7	m#250.7		#130.0	165.5	9.2
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	215	606		182	398		216	641		243	929	803
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	1.13	0.39		0.58	1.16		0.36	1.04		1.21	0.71	0.15
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 77.7

Intersection LOS: E

Intersection Capacity Utilization 117.0%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

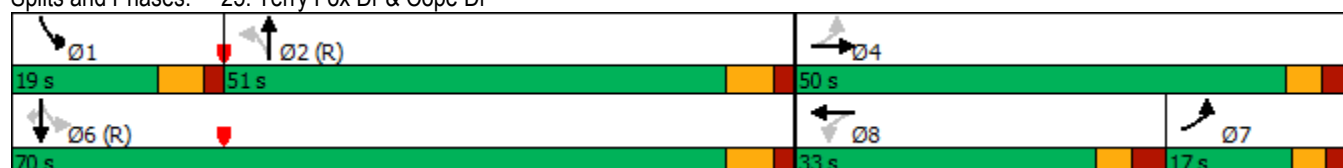
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

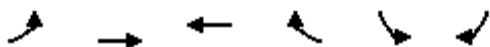
Splits and Phases: 25: Terry Fox Dr & Cope Dr



HCM Unsignalized Intersection Capacity Analysis

5: Fernbank Rd & Rouncey Rd

11-28-2025

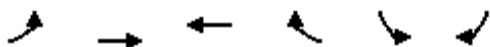


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	16	622	825	104	45	39
Future Volume (Veh/h)	16	622	825	104	45	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	16	622	825	104	45	39
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	929				1479	825
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	929				1479	825
tC, single (s)	4.1				6.6	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.7	3.3
p0 queue free %	98				63	89
cM capacity (veh/h)	744				121	371
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	16	622	825	104	84	
Volume Left	16	0	0	0	45	
Volume Right	0	0	0	104	39	
cSH	744	1700	1700	1700	176	
Volume to Capacity	0.02	0.37	0.49	0.06	0.48	
Queue Length 95th (m)	0.5	0.0	0.0	0.0	18.3	
Control Delay (s)	9.9	0.0	0.0	0.0	42.9	
Lane LOS	A				E	
Approach Delay (s)	0.2		0.0		42.9	
Approach LOS					E	
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			57.7%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Fernbank Rd & Bus Access

11-28-2025

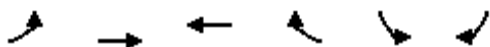


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Traffic Volume (veh/h)	0	667	1023	0	0	0
Future Volume (Veh/h)	0	667	1023	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	667	1023	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)			241			
pX, platoon unblocked	0.60				0.60	0.60
vC, conflicting volume	1023				1690	1023
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	702				1818	702
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	541				52	264
Direction, Lane #	EB 1	WB 1				
Volume Total	667	1023				
Volume Left	0	0				
Volume Right	0	0				
cSH	541	1700				
Volume to Capacity	0.00	0.60				
Queue Length 95th (m)	0.0	0.0				
Control Delay (s)	0.0	0.0				
Lane LOS						
Approach Delay (s)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		60.2%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

12: Fernbank Rd & School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	667	1023	0	8	0
Future Volume (Veh/h)	0	667	1023	0	8	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	667	1023	0	8	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)			197			
pX, platoon unblocked	0.61				0.61	0.61
vC, conflicting volume	1023				1690	1023
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	713				1813	713
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				85	100
cM capacity (veh/h)	543				53	264
Direction, Lane #	EB 1	WB 1	SB 1	SB 2		
Volume Total	667	1023	8	0		
Volume Left	0	0	8	0		
Volume Right	0	0	0	0		
cSH	543	1700	53	1700		
Volume to Capacity	0.00	0.60	0.15	0.00		
Queue Length 95th (m)	0.0	0.0	3.9	0.0		
Control Delay (s)	0.0	0.0	85.0	0.0		
Lane LOS			F	A		
Approach Delay (s)	0.0	0.0	85.0			
Approach LOS			F			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			66.8%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

13: Atlas Terr & Cope Dr

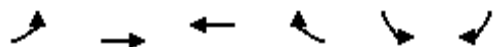
11-28-2025

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	310	2	46	364	10	112
Future Volume (Veh/h)	310	2	46	364	10	112
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	310	2	46	364	10	112
Pedestrians	3			4	10	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			322		780	325
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			322		780	325
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		97	84
cM capacity (veh/h)			1239		349	712
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	312	410	122			
Volume Left	0	46	10			
Volume Right	2	0	112			
cSH	1700	1239	656			
Volume to Capacity	0.18	0.04	0.19			
Queue Length 95th (m)	0.0	0.9	5.4			
Control Delay (s)	0.0	1.2	11.7			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	11.7			
Approach LOS			B			
Intersection Summary						
Average Delay		2.3				
Intersection Capacity Utilization		59.2%		ICU Level of Service		B
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

14: Atlas Ter/School Access

11-28-2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Traffic Volume (veh/h)	33	0	0	64	0	8
Future Volume (Veh/h)	33	0	0	64	0	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	33	0	0	64	0	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	64				98	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64				98	32
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	99
cM capacity (veh/h)	1526				886	1048
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	33	64	8			
Volume Left	33	0	0			
Volume Right	0	64	8			
cSH	1526	1700	1048			
Volume to Capacity	0.02	0.04	0.01			
Queue Length 95th (m)	0.5	0.0	0.2			
Control Delay (s)	7.4	0.0	8.5			
Lane LOS	A		A			
Approach Delay (s)	7.4	0.0	8.5			
Approach LOS			A			
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			18.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

15: Rouncey Rd & Atlas Ter

11-28-2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	4	129	12	20	73
Future Volume (Veh/h)	4	4	129	12	20	73
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	4	129	12	20	73
Pedestrians	14		5			
Lane Width (m)	3.6		3.6			
Walking Speed (m/s)	1.2		1.2			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	267	149			155	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	267	149			155	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			99	
cM capacity (veh/h)	705	892			1403	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	8	141	93			
Volume Left	4	0	20			
Volume Right	4	12	0			
cSH	788	1700	1403			
Volume to Capacity	0.01	0.08	0.01			
Queue Length 95th (m)	0.2	0.0	0.3			
Control Delay (s)	9.6	0.0	1.7			
Lane LOS	A		A			
Approach Delay (s)	9.6	0.0	1.7			
Approach LOS	A					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			28.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Atlas Ter/Atlas Terr & Arosa Wy/School Access

11-28-2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	0	0	0	11	0	97	0	0	25	14
Future Volume (Veh/h)	8	0	0	0	0	11	0	97	0	0	25	14
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
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
Hourly flow rate (vph)	8	0	0	0	0	11	0	97	0	0	25	14
Pedestrians	16			1			2			1		
Lane Width (m)	3.6			3.6			3.6			3.6		
Walking Speed (m/s)	1.2			1.2			1.2			1.2		
Percent Blockage	1			0			0			0		
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	157	146	50	132	153	99	55				98	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	157	146	50	132	153	99	55				98	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	100	100	100	99	100				100	
cM capacity (veh/h)	784	738	1009	834	732	961	1542				1507	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	11	97	39								
Volume Left	8	0	0	0								
Volume Right	0	11	0	14								
cSH	784	961	1542	1507								
Volume to Capacity	0.01	0.01	0.00	0.00								
Queue Length 95th (m)	0.2	0.3	0.0	0.0								
Control Delay (s)	9.6	8.8	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	9.6	8.8	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				1.1								
Intersection Capacity Utilization				21.6%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	322	308	2	220	97	387	315	8	82	298	138
Future Volume (vph)	120	322	308	2	220	97	387	315	8	82	298	138
Satd. Flow (prot)	1644	1800	1485	1710	1782	1378	1598	3339	0	1660	3353	1457
Flt Permitted	0.352			0.566			0.461			0.556		
Satd. Flow (perm)	605	1800	1466	1018	1782	1341	776	3339	0	969	3353	1457
Satd. Flow (RTOR)			308			190		4				138
Confl. Peds. (#/hr)	12		1	1		12			2	2		
Confl. Bikes (#/hr)						4			1			
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 (%)	4%	0%	3%	0%	1%	11%	7%	2%	0%	3%	2%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	322	308	2	220	97	387	323	0	82	298	138
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	4.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.0	33.0	33.0	33.0	33.0	10.2	29.0		29.0	29.0	11.3
Total Split (s)	11.3	44.3	44.3	33.0	33.0	33.0	16.2	45.7		29.5	29.5	11.3
Total Split (%)	12.6%	49.2%	49.2%	36.7%	36.7%	36.7%	18.0%	50.8%		32.8%	32.8%	12.6%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	28.5	28.6	28.6	17.3	17.3	17.3	49.0	49.0		26.4	26.4	37.6
Actuated g/C Ratio	0.32	0.32	0.32	0.19	0.19	0.19	0.54	0.54		0.29	0.29	0.42
v/c Ratio	0.48	0.56	0.46	0.01	0.64	0.24	0.68	0.18		0.29	0.30	0.20
Control Delay	28.0	28.6	4.6	25.0	41.3	1.4	23.0	11.7		30.0	26.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	28.0	28.6	4.6	25.0	41.3	1.4	23.0	11.7		30.0	26.9	4.2
LOS	C	C	A	C	D	A	C	B		C	C	A
Approach Delay		18.7			29.1			17.8			21.3	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	16.2	49.1	0.0	0.3	37.7	0.0	38.8	14.1		12.1	23.2	0.0
Queue Length 95th (m)	24.7	62.7	15.1	1.9	52.8	0.0	#105.9	27.4		25.5	35.0	11.3
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	249	762	798	303	530	532	572	1819		283	983	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.48	0.42	0.39	0.01	0.42	0.18	0.68	0.18		0.29	0.30	0.20
Intersection Summary												

Lanes, Volumes, Timings

22: Terry Fox Dr & Fernbank Rd

11-28-2025

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 11 (12%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 20.4

Intersection LOS: C

Intersection Capacity Utilization 74.6%

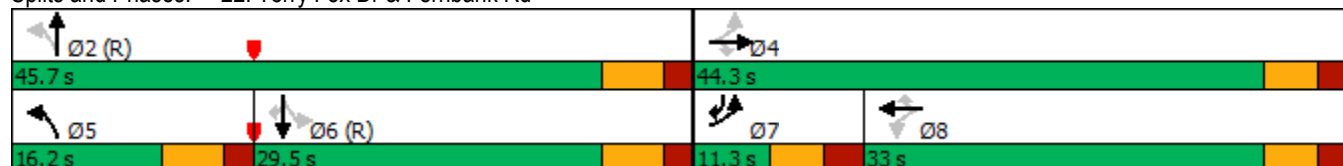
ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	149	49	68	109	238	29	539	55	246	554	141
Future Volume (vph)	256	149	49	68	109	238	29	539	55	246	554	141
Satd. Flow (prot)	1541	1692	0	1629	1518	0	1710	3171	0	1710	3226	1471
Flt Permitted	0.166			0.633			0.445			0.257		
Satd. Flow (perm)	269	1692	0	1081	1518	0	797	3171	0	462	3226	1425
Satd. Flow (RTOR)		18			88			9				141
Confl. Peds. (#/hr)	2		4	4		2	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
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 (%)	11%	2%	2%	5%	8%	4%	0%	5%	17%	0%	6%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	256	198	0	68	347	0	29	594	0	246	554	141
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	25.0	62.0		37.0	37.0		37.0	37.0		21.0	58.0	58.0
Total Split (%)	20.8%	51.7%		30.8%	30.8%		30.8%	30.8%		17.5%	48.3%	48.3%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	50.7	50.2		25.7	25.7		37.1	37.1		57.5	57.3	57.3
Actuated g/C Ratio	0.42	0.42		0.21	0.21		0.31	0.31		0.48	0.48	0.48
v/c Ratio	0.82	0.28		0.29	0.88		0.12	0.60		0.67	0.36	0.19
Control Delay	47.5	20.7		41.2	57.2		35.5	39.4		30.3	21.7	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	47.5	20.7		41.2	57.2		35.5	39.4		30.3	21.7	3.9
LOS	D	C		D	E		D	D		C	C	A
Approach Delay		35.8			54.6			39.3			21.3	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	41.7	27.7		14.0	63.2		5.5	68.5		37.4	46.0	0.0
Queue Length 95th (m)	#78.9	42.9		26.9	#104.9		14.2	91.5		60.2	63.7	12.0
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	317	795		276	453		246	985		381	1540	754
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	0.81	0.25		0.25	0.77		0.12	0.60		0.65	0.36	0.19
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 34.3

Intersection LOS: C

Intersection Capacity Utilization 89.6%

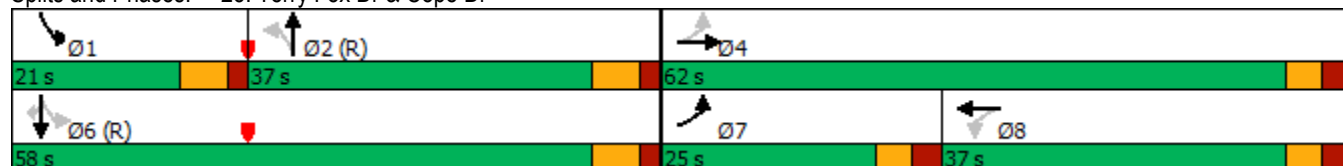
ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 25: Terry Fox Dr & Cope Dr



Lanes, Volumes, Timings
22: Terry Fox Dr & Fernbank Rd

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	349	284	5	469	146	459	551	25	170	467	77
Future Volume (vph)	112	349	284	5	469	146	459	551	25	170	467	77
Satd. Flow (prot)	1693	1782	1485	1710	1800	1485	1676	3388	0	1693	3320	1485
Flt Permitted	0.107			0.552			0.327			0.435		
Satd. Flow (perm)	191	1782	1451	988	1800	1422	574	3388	0	763	3320	1435
Satd. Flow (RTOR)			284			146		6				85
Confl. Peds. (#/hr)	19		7	7		19	5		13	13		5
Confl. Bikes (#/hr)			3			8			2			1
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 (%)	1%	1%	3%	0%	0%	3%	2%	0%	0%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	349	284	5	469	146	459	576	0	170	467	77
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA		Perm	NA	pm+ov
Protected Phases	7	4			8		5	2			6	7
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	8	8	8	5	2		6	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	5.0	5.0	10.0		10.0	10.0	5.0
Minimum Split (s)	11.3	33.2	33.2	33.2	33.2	33.2	11.2	29.2		29.2	29.2	11.3
Total Split (s)	12.0	52.0	52.0	40.0	40.0	40.0	27.0	68.0		41.0	41.0	12.0
Total Split (%)	10.0%	43.3%	43.3%	33.3%	33.3%	33.3%	22.5%	56.7%		34.2%	34.2%	10.0%
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2		4.2	4.2	3.7
All-Red Time (s)	2.6	2.5	2.5	2.5	2.5	2.5	2.0	2.0		2.0	2.0	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2		6.2	6.2	6.3
Lead/Lag	Lead			Lag	Lag	Lag	Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		C-Max	C-Max	None
Act Effct Green (s)	44.9	45.0	45.0	33.0	33.0	33.0	62.6	62.6		35.1	35.1	40.7
Actuated g/C Ratio	0.37	0.38	0.38	0.28	0.28	0.28	0.52	0.52		0.29	0.29	0.34
v/c Ratio	0.78	0.52	0.39	0.02	0.95	0.29	0.93	0.33		0.76	0.48	0.14
Control Delay	62.7	32.4	4.5	31.6	72.6	6.9	48.0	17.1		46.0	23.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.7	32.4	4.5	31.6	72.6	6.9	48.0	17.1		46.0	23.6	1.3
LOS	E	C	A	C	E	A	D	B		D	C	A
Approach Delay		26.3			56.8			30.8			26.5	
Approach LOS		C			E			C			C	
Queue Length 50th (m)	18.2	65.8	0.0	0.9	113.0	0.0	73.4	41.8		17.0	24.4	0.5
Queue Length 95th (m)	#41.6	95.3	17.7	4.2	#177.7	15.9	#141.9	54.5		#76.6	31.2	1.8
Internal Link Dist (m)		219.3			255.4			132.6			371.3	
Turn Bay Length (m)	72.0		80.0	40.0		93.0	90.0			95.0		120.0
Base Capacity (vph)	143	680	729	278	507	505	495	1771		223	970	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.78	0.51	0.39	0.02	0.93	0.29	0.93	0.33		0.76	0.48	0.14
Intersection Summary												

Lanes, Volumes, Timings 22: Terry Fox Dr & Fernbank Rd

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 33.9

Intersection LOS: C

Intersection Capacity Utilization 99.4%

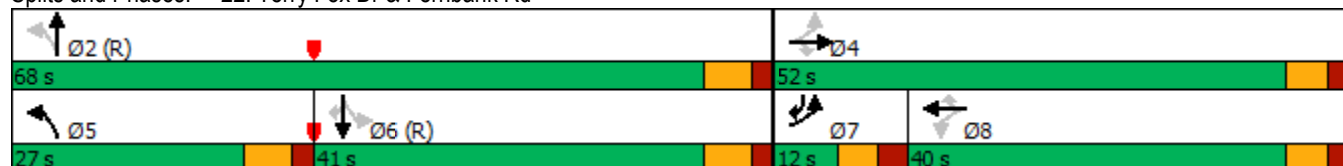
ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 22: Terry Fox Dr & Fernbank Rd



Lanes, Volumes, Timings
25: Terry Fox Dr & Cope Dr

11-28-2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	183	56	105	185	275	77	619	45	293	660	123
Future Volume (vph)	243	183	56	105	185	275	77	619	45	293	660	123
Satd. Flow (prot)	1676	1650	0	1644	1604	0	1613	3253	0	1693	3320	1485
Flt Permitted	0.201			0.537			0.401			0.192		
Satd. Flow (perm)	355	1650	0	914	1604	0	672	3253	0	342	3320	1401
Satd. Flow (RTOR)		17			63			6				123
Confl. Peds. (#/hr)	1		18	18		1	12		2	2		12
Confl. Bikes (#/hr)			6			6			2			6
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 (%)	2%	1%	15%	4%	1%	1%	6%	3%	16%	1%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	239	0	105	460	0	77	664	0	293	660	123
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8			2			6		6
Detector Phase	7	4		8	8		2	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		10.0	10.0		4.0	10.0	10.0
Minimum Split (s)	10.8	32.3		32.3	32.3		28.2	28.2		10.0	32.2	32.2
Total Split (s)	20.0	61.0		41.0	41.0		39.0	39.0		20.0	59.0	59.0
Total Split (%)	16.7%	50.8%		34.2%	34.2%		32.5%	32.5%		16.7%	49.2%	49.2%
Yellow Time (s)	3.2	3.3		3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	2.6	3.0		3.0	3.0		2.0	2.0		1.8	2.0	2.0
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)	5.8	6.3		6.3	6.3		6.2	6.2		6.0	6.2	6.2
Lead/Lag	Lag			Lead	Lead		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	C-Max
Act Effct Green (s)	53.5	53.0		33.1	33.1		33.7	33.7		54.7	54.5	54.5
Actuated g/C Ratio	0.45	0.44		0.28	0.28		0.28	0.28		0.46	0.45	0.45
v/c Ratio	0.78	0.32		0.42	0.94		0.41	0.72		0.91	0.44	0.17
Control Delay	56.6	21.1		40.8	65.6		35.3	36.2		57.2	23.9	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	56.6	21.1		40.8	65.6		35.3	36.2		57.2	23.9	4.1
LOS	E	C		D	E		D	D		E	C	A
Approach Delay		39.0			61.0			36.1			30.7	
Approach LOS		D			E			D			C	
Queue Length 50th (m)	37.1	33.9		20.9	97.0		16.6	80.9		48.1	58.9	0.0
Queue Length 95th (m)	#64.5	53.4		38.7	#160.9		m31.6	104.0		#98.9	75.7	11.3
Internal Link Dist (m)		381.1			64.2			371.3			152.5	
Turn Bay Length (m)	68.0			40.0			34.0			36.0		56.0
Base Capacity (vph)	316	761		264	508		188	917		322	1507	703
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	0.77	0.31		0.40	0.91		0.41	0.72		0.91	0.44	0.17
Intersection Summary												

Lanes, Volumes, Timings

25: Terry Fox Dr & Cope Dr

11-28-2025

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 39.5

Intersection LOS: D

Intersection Capacity Utilization 99.3%

ICU Level of Service F

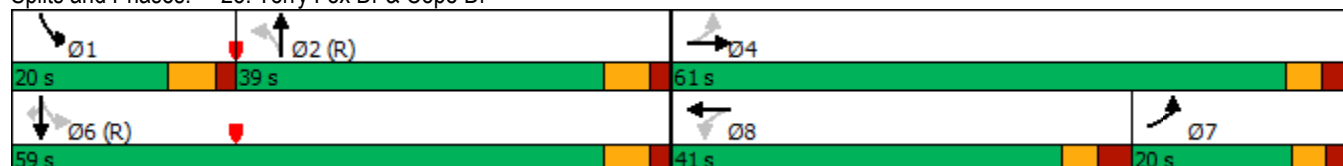
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Terry Fox Dr & Cope Dr



APPENDIX M
Fernbank / Rouncey Signal Warrant and Roundabout Screening

Analysis Sheet

Input Sheet

Results Sheet

Proposed Collision

GO TO Justification:



Intersection: Fernbank Road / Rouncey Road

Count Date: 2023-03-07

Justification 1: Minimum Vehicle Volumes

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☒	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	10:00	12:30	13:30	16:00	17:00	18:00		
1A	480	720	600	900	962	1,163	959	850	811	1,201	1,470	1,398		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	180	255	180	255	90	89	72	37	33	42	70	74		
	COMPLIANCE %				35	35	28	15	13	16	27	29	199	25
Restricted Flow Signal Justification 1:					Both 1A and 1B 100% Fulfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes ☐ Yes ☐	No ☒ No ☒

Justification 2: Delay to Cross Traffic

Restricted Flow Urban Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☒	FREE FLOW ☐	RESTR. FLOW ☐	8:00	9:00	10:00	12:30	13:30	16:00	17:00	18:00		
2A	480	720	600	900	872	1,074	887	813	778	1,159	1,400	1,324		
	COMPLIANCE %				100	100	100	100	100	100	100	100		
2B	50	75	50	75	72	60	51	29	22	25	40	46		
	COMPLIANCE %				96	80	68	39	29	33	53	61	460	58
Restricted Flow Signal Justification 2:					Both 2A and 2B 100% fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes ☐	No ☒
													Yes ☐	No ☒

Justification 3: Combination

Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimum Vehicle Volume	YES ☐	NO ☒	YES ☐	NO ☒
Justification 2	Delay Cross Traffic	YES ☐	NO ☒		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	9:00	1,074	89	89	100 %	83 %
	16:00	1,159	42	80	53 %	
	17:00	1,400	70	80	88 %	
	18:00	1,324	74	80	93 %	



Justification 5: Collision Experience

Justification	Preceding Months	% Fulfillment	Overall % Compliance
Justification 5	1-12	80 %	73 %
	13-24	60 %	
	25-36	80 %	

Justification 6: Pedestrian Volume

Pedestrian Volume Analysis

8 Hour Vehicular Volume V_8		Net 8 Hour Pedestrian Volume				
		< 200	200 - 275	276 - 475	476 - 1000	>1000
Justification 6A	< 1440					
	1440 - 2600					
	2601 - 7000	Not Justified				
	> 7000					

Pedestrian Delay Analysis

Net Total 8 Hour Volume of Total Pedestrians		Net Total 8 Hour Volume of Delayed Pedestrians		
		< 75	75 - 130	> 130
Justification 6B	< 200	Not Justified		
	200 - 300			
	> 300			

City of Ottawa Roundabout Initial Feasibility Screening Tool

The intent of this screening tool is to provide a relatively quick assessment of the feasibility of a roundabout at a particular intersection in comparison to other appropriate forms of traffic control or road modifications including all-way stop control, traffic signals, auxiliary lanes, etc. The intended outcome of this tool is to provide enough information to assist staff in deciding whether or not to proceed with an Intersection Control Study to investigate the feasibility of a roundabout in more detail.

- | | | |
|---|---|--|
| 1 | Project Name: | Fernbank High School TIA |
| 2 | Intersection: | Fernbank Road / Rouncey Road |
| 3 | Location and Description of Intersection:
Lane configuration, total or approach AADT, distance to nearby intersection(s), etc. Attach or sketch a diagram and include existing and/or horizon-year turning movements. If an existing intersection then indicate type of control. | This is an existing unsignalized T-intersection with free flow E-W along Fernbank Road and stop control on the SB approach. Existing AADT volumes are approximately 13,000 on Fernbank Road and 1,700 on Rouncey Road. Refer to TIA study for detailed turning movement volumes. |
| 4 | What traditional modifications are proposed?
All-way stop control, traffic signals, auxiliary lanes, etc. Attach or sketch a diagram if necessary. | Traffic signals are not warranted under future volumes, signal warrants only satisfied to 53% under projected 2033 background volumes. |
| 5 | What size of roundabout is being considered?
Describe, and attach a Roundabout Traffic Flow Worksheet. | A one-lane roundabout is being considered for this intersection. |
| 6 | Why is a roundabout being considered? | Signal warrants are not met under projected 2033 volumes, but future background operations analysis indicates delays corresponding to LOS D-E under future volumes for SB approach. |

- 7 Are there contra-indications for a roundabout? If "Yes" is indicated for one or more of the contra-indications then a roundabout may be problematic at the subject intersection. That is not to say that a roundabout is not possible, just that there may be difficulties or high costs.

No.	Contra-Indication	Outcome
1	Is there insufficient property at the intersection (i.e. less than 44 metres diameter if considering a single-lane roundabout, and less than 60 metres if considering a two-lane roundabout) or property constraints that would require demolition of adjacent structures?	Yes ☒ No ☐
2	Are there any instances where stopping sight distance (SSD) of a roundabout yield line may not be attainable (i.e. the intersection is on a crest vertical curve)?	Yes ☐ No ☒
3	Is there an existing uncontrolled approach with a grade in excess of 4 percent?	Yes ☐ No ☒
4	Is the intersection located within a coordinated signal system?	Yes ☐ No ☒
5	Is there a closely-spaced traffic signal or railway crossing that could not be controlled with a nearby roundabout?	Yes ☐ No ☒
6	Are significant differences in directional flows or any situations of sudden high demand expected?	Yes ☐ No ☒
7	Are there known visually-impaired pedestrians that cross this intersection?	Yes ☐ No ☒

ROW protection
27m plus 8m
utility corridor

- 8 Are there suitability factors for a roundabout? If "Yes" is indicated for two or more of the suitability factors then a roundabout should be technically feasible at the subject intersection.

No.	Suitability Factor	Outcome
1	Does the intersection currently experience an average collision frequency of more than 1.5 injury crashes per year, or a collision rate in excess of 1 injury crash per 1 million vehicles entering (MVE)?	Yes ☐ No ☒
2	Has there been a fatal crash at the intersection in the last 10 years?	Yes ☐ No ☒
3	Are capacity problems currently being experienced, or expected in the future?	Yes ☒ No ☐
4	Are traffic signals warranted, or expected to be warranted in the future?	Yes ☐ No ☒
5	Does the intersection have more than 4 legs, or unusual geometry?	Yes ☐ No ☒
6	Will planned modifications to the intersection require that nearby structures be widened (i.e. to accommodate left-turn lanes)?	Yes ☐ No ☒
7	Is the intersection located at a transition between rural and urban environments (i.e. an urban boundary) such that a roundabout could act as a means of speed transition?	Yes ☒ No ☐

9 Conclusions/recommendation whether to proceed with an Intersection Control Study:

Projected volumes on will increase the delays and difficulty of turning movements from the stop-controlled neighbourhood roads onto Fernbank Road. The only contra-indication for a roundabout in this location is property - development on the north may be a constraint but the lands to the south are rural (outside the urban boundary) and would provide additional room if acquired. Roundabout would be anticipated to reduce delays for SB approach, and could act as a speed transition as Fernbank lies on the Ottawa urban boundary.

Criteria	Weight	Signalised Intersection	Roundabout	Rationale
Construction Cost	2	5	1	Roundabout construction costs more than signalised intersections
Safety	4	2	4	A roundabout provides a higher level of safety then a protected intersection. This is due to low operating speeds through the intersection and reduced conflict points
Capacity	3	2	4	Roundabouts have a higher capacity then a signalised intersection.
Pedestrians and Cyclists	4	3	3	Signalised intersections provide a higher level of safety compared to roundabouts, however roundabouts provide lower crossing distances and pedestrian priority at crossings.
Environmental	1	2	4	Due to the reduction in overall delay for drivers, resulting in reduced idling, and lack of electrical requirements, roundabouts have a smaller environmental impact then signalised intersections
Property Impacts	4	3	3	As the surrounding properties are mostly city-owned, there are no property impacts for either of the intersection options.
Total		50	58	