TOWN OF CALEDON
PLANNING
RECEIVED
November 18th, 2025

# TRANSPORTATION IMPACT STUDY

## BROCCOLINI AIRPORT ROAD INDUSTRIAL DEVELOPMENT

## TOWN OF CALEDON
## REGION OF PEEL

**PREPARED FOR:**

**BROCCOLINI AIRPORT ROAD LP**

**PREPARED BY:**

**C.F. CROZIER & ASSOCIATES INC.**
**211 YONGE STREET, SUITE 301**
**TORONTO, ON M5B 1M4**

**NOVEMBER 2025**

**CFCA FILE NO. 2778-7228**

The material in this report reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

CROZIER

| Revision Number | Date | Comments |
|---|---|---|
| Rev.0 | November 2025 | Internal Review |
| Rev.1 | November 2025 | Issued for First Submission |

## Executive Summary

Broccolini Airport Road LP (Broccolini) retained C.F. Crozier & Associates (Crozier) to prepare a Transportation Impact Study in support the Zoning By-Law Amendment and Site Plan Application for the proposed industrial warehouse development fronting Airport Road in the Town of Caledon, Region of Peel. The Proposed Development is located within the Tullamore Northwest Employment Area Secondary Plan.

The Subject Lands cover an area of 24.24 ha and currently consist of agricultural fields, forested areas, and natural heritage areas. The Subject Lands are bound by undeveloped greenfield lands to the north, south and west, and Airport Road to the east and Torbram Road to the west.

The Site Plan prepared by Powers Brown Architecture proposes 2 industrial warehouse buildings, with a total gross floor area of 71,385 $m^2$. To facilitate the development, 3 site accesses off Airport Road are proposed. The north and south site accesses are proposed to be right-in/right-out passenger car accesses, with the central site access being a full moves access used by passenger cars and left-turning passenger cars.

Existing Conditions

- The study road network is operating at a LOS "E" or better with lower to moderate control delays and volume-to-capacity (v/c) ratios. As such, these metrics indicate that the intersections are operating efficiently with reserve capacity for future growth.

- There are no major queueing concerns that are expected to cause significant impacts within the study area.

Future Background Conditions

- Future background traffic volumes were forecasted by application of corridor growth rates and inclusion of background development trip assignments as confirmed with the Region and Town during the terms of reference.

- While a traffic signal is not warranted for Airport Road & Perdue Court/Davis Lane, it is recommended that the intersection be signalized to support future background traffic operations.

- Under 2028 future background conditions, the signalized intersection of Airport Road & Old School Road/Healy Road is expected to operate at LOS "E" or better during the weekday peak hours with a maximum control delay and v/c ratio of 77 s and 1.13, respectively. The split signal timing plan contributes to the operational concerns expected, however, this split phasing increases the intersection safety due to the offset east and west approaches. Furthermore, the planned roundabout by 2031 is expected to mitigate these operational concerns noted.

- The remaining study intersections, under 2028 future background conditions, are expected to operate at a LOS "D" or better with low to moderate control delays and v/c ratios.

- Under 2033 and 2038 future background conditions, the study intersections are expected to operate acceptably at a LOS "D" or better during weekday peak periods, with low to moderate control delays and v/c ratios.

- The queues for the following movements are expected to exceed the effective storage length:
    - Mayfield Road & Airport Road (NBL)

Future Total Conditions

- The Proposed Development is expected to generate 110 and 117 two-way mode split adjusted vehicle trips during the weekday a.m. and p.m. peak hours, respectively. These trips consist of 15 and 23 two-way truck trips during the weekday a.m. and p.m. peak hours, respectively, as well as 95 and 94 two-way mode split adjusted passenger car trips during the weekday a.m. and p.m. peak hours, respectively.

- Under 2028 future total conditions, the intersection of Airport Road & Old School Road/Healy Road is expected to operate at a LOS "F", with a maximum increase in v/c ratio of 0.01. As outlined for future background conditions, these operations are impacted by the split phasing, which mitigates the offset east and west intersection approaches. Nevertheless, the planned roundabout by 2031 is expected to mitigate the expected operational concerns.

- The proposed site accesses are expected to operate efficiently at a LOS "B" or better under 2028, 2033 and 2038 future background conditions, with low control delays and v/c ratios.

- The remaining study intersections are expected to continue operating acceptably at a LOS "E" or better as well as low-to-moderate control delays and v/c ratios, for the 2028, 2033 and 2038 horizon years. These metrics indicated that the intersections are operating with reserve capacity to accommodate future traffic growth.

- The queues for the following movements are expected to exceed the effective storage length:
    - Mayfield Road & Airport Road (EBL, NBR)

- Overall, the site generated traffic is not expected to significantly impact the study road network, and the Proposed Development is supportable from a transportation operations and queueing perspective.

2044 Sensitivity Analysis – Site Accesses

- Under 2044 future total conditions, the proposed site accesses off Airport Road as well as Airport Road & E-W Collector Road are expected to operate at a LOS "C" or better during the weekday peak hours, with acceptable v/c ratios. Accordingly, the intersections are operating efficiently with reserve capacity to accommodate future traffic growth, and the Proposed Development is supportable from this perspective.

- There are no queueing concerns expected under 2044 future total conditions. Along Airport Road, there are no queueing issues anticipated associated with back-to-back left-turns along Airport Road, especially with regards to the intersection with E-W Collector Road.

Site Access Review

- To support the Subject Development, the following auxiliary turn lanes at the proposed site accesses should be implement, subject to confirmation with the Region:
    - Airport Road & North RIRO Access (SBR)
    - Airport Road & Full Moves Access (EBL, NBL, SBR)
    - Airport Road & South RIRO Access (SBR)
- The proposed site accesses off Airport Road meets the applicable sight distance requirements.
- The Region of Peel's intersection spacing requirements are met for the 3 site accesses proposed off Airport Road.

Corridor Access Management Review

- The available intersection spacing along Airport Road can support a full moves access between the Subject Lands and Old School Road. Restricted access(es) may also be supported along this frontage.
    - Several of these parcels have developable area west of the natural heritage system and Salt Creek, which allows for access opportunities via the potential future extension of Ionic Drive.
    - There may also be access opportunities along Old School Road for the lands with frontage to Old School Road.
- The lands south of the Proposed Development will have direct full moves access opportunities to the future E-W Collector Road.
- Overall, the proposed site accesses do not preclude access to the neighbouring lands along Airport Road once redevelopment is pursued.

Vehicle Maneuverability Review

- The Vehicle Turning Diagrams demonstrate that there are no vehicle maneuverability constraints expected within the Subject Development for heavy vehicles, emergency vehicles, and passenger vehicles.
    - It is noted that a detailed design for Airport Road & Full Moves Access will be required to confirm the curb geometry required to support safe heavy vehicle maneuvering.

Parking and Loading

- The Site Plan proposes 334 vehicle parking spaces, which is deficient to the Town of Caledon's vehicle parking requirements.
    - Approved vehicle parking rates for industrial developments with similar transportation contexts in the Town of Caledon propose an average parking

supply rate of 0.43 space/unit. Thus, the proposed parking rate of 0.47 space/unit is supportable when considering the parking rates proposed at similar sites.

- The Proposed Development meets the accessible parking, bicycle parking and loading requirements.

Transportation Demand Management Strategies

- Transportation Demand Management (TDM) strategies were identified and recommended to support the Subject Development.

Recommendations

**Table E1** summarizes the recommended improvements.

**Table E1: Recommended Improvements**

| Location | Improvement |
|---|---|
| **2028 Future Background** | |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (145 m). |
| | Monitor traffic operations and queues to determine if additional improvements are warranted, prior to Mayfield Road widening. |
| Airport Road & Old School Road/Helay Road | Monitor traffic operations and queues to determine if additional improvements are warranted, prior to implementation of a roundabout. |
| Airport Road & Perdue Court/Davis Lane | Implement signal control. |
| **2033 Future Background** | |
| Mayfield Road | Maintain schedule for planned road widening and associated improvements between Airport Road and Coleraine Drive. |
| Airport Road | Maintain schedule for planned road widening and associated improvements between Mayfield Road and King Street. |
| Torbram Road | Maintain schedule for planned road widening and urbanization between Mayfield Road and Old School Road. |
| Highway 413 | Maintain schedule for planned highway between Highway 401 to Highway 400. |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (190 m). |
| Airport Road & Old School Road/Healy Road | Maintain schedule for planned roundabout. |

| Location | Improvement |
|---|---|
| **2038 Future Background** | |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (225 m). |
| Torbram Road & Old School Road | Implement signal control. |
| **2028 Future Total** | |
| Mayfield Road & Airport Road | Continue to monitor traffic operations and queues to determine if additional improvements are warranted, prior to Mayfield Road widening. |
| Airport Road & Old School Road/Healy Road | Continue to monitor traffic operations to determine if additional improvements are warranted. |
| Airport Road & North RIRO Access | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| Airport Road & Full Moves Access | Implement the following auxiliary turn lanes:<br>• EBL: 25 m<br>• NBL: 30 m (within two-way left-turn lane)<br>• SBR: 30 m (minimum per Region Standard 5-1-4) |
| Airport Road & South RIRO Access | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| **2033 Future Total** | |
| Mayfield Road & Airport Road | Extend existing NBR auxiliary turn lane (100 m). |
| Airport Road & North RIRO Access[1] | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| Airport Road & Full Moves Access[1] | Implement the following auxiliary turn lanes:<br>• EBL: 25 m<br>• NBL: 30 m (within two-way left-turn lane, minimum per Region Standard 5-1-6)<br>• SBR: 30 m (minimum per Region Standard 5-1-4) |
| Airport Road & South RIRO Access[1] | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| **2038 Future Total** | |
| Mayfield Road & Airport Road | Extend planned EBL auxiliary turn lane (285 m). |

| Location | Improvement |
|---|---|
| **Other Site-Specific Recommendations** | |
| Transportation Demand Management Measures | Implement the following site-specific transportation demand management measures recommended:<br>• TDM Information Package<br>• Off-Peak Shift Changes<br>• Pre-Loaded PRESTO Cards<br>• Secure and Excess Bicycle Parking Spaces<br>• Shower and Change Room Facilities<br>• Electric Vehicle Parking Spaces<br>• Smart Commute |

*Note 1: Recommended to support 2044 future total conditions, however, to be implemented by the 2033 future total horizon as part of the Airport Road widening works.*

Summary

The Proposed Development is supportable from the transportation operation, safety, site circulation, parking and loading perspectives. The analysis undertaken herein was prepared using the most recent Site Plan. Any minor changes to the Site Plan will not materially affect the conclusions contained within this report.

# TABLE OF CONTENTS

**EXECUTIVE SUMMARY** ..... **II**

**1.0 INTRODUCTION** ..... **1**
**1.1 Development Lands** ..... **1**
**1.2 Development Proposal** ..... **1**
**1.3 Study Purpose and Scope** ..... **4**

**2.0 EXISTING TRANSPORTATION CONTEXT** ..... **4**
**2.1 Study Road Network** ..... **4**
**2.2 Transit Network** ..... **7**

**3.0 EXISTING TRANSPORTATION NETWORK REVIEW** ..... **7**
**3.1 Transportation Data** ..... **7**
**3.2 Existing Traffic Volumes** ..... **8**
**3.3 Traffic Modelling and Assumptions** ..... **10**
**3.4 Intersection Operations** ..... **10**
**3.5 Queueing Assessment** ..... **12**

**4.0 FUTURE TRANSPORTATION CONTEXT** ..... **13**
**4.1 Completed and Ongoing Planning Studies** ..... **14**
***4.1.1 Region of Peel 2051 Transportation Master Plan*** ..... ***14***
***4.1.2 Town of Caledon Multi-Modal Transportation Master Plan*** ..... ***15***
***4.1.3 Town of Caledon Active Transportation Master Plan*** ..... ***15***
**4.2 Planned Mobility Infrastructure** ..... **16**
***4.2.1 Mayfield Road*** ..... ***16***
***4.2.2 Airport Road*** ..... ***16***
***4.2.3 Torbram Road*** ..... ***17***
***4.2.4 Highway 413*** ..... ***18***
***4.2.5 Future East-West Collector*** ..... ***20***
***4.2.6 Summary*** ..... ***20***
**4.3 Secondary Plan Areas** ..... **21**
***4.3.1 Tullamore Northwest Employment Area*** ..... ***21***

**5.0 FUTURE BACKGROUND TRANSPORTATION NETWORK REVIEW** ..... **21**
**5.1 Corridor Growth Rates** ..... **21**
**5.2 Background Developments** ..... **22**
**5.3 Future Background Traffic Volumes** ..... **28**

**5.4 Warrants Assessment ..... 32**
**5.5 Traffic Modelling and Assumptions ..... 32**
***5.5.1 Road Geometry ..... 33***
***5.5.2 Modelling Parameters ..... 35***
***5.5.3 Roundabout Analysis ..... 35***
**5.6 Intersection Operations ..... 36**
***5.6.1 2028 Horizon Year ..... 36***
***5.6.2 2033 Horizon Year ..... 39***
***5.6.3 2038 Horizon Year ..... 42***
**5.7 Queueing Assessment ..... 44**
***5.7.1 2028 Horizon Year ..... 44***
***5.7.2 2033 Horizon Year ..... 45***
***5.7.3 2038 Horizon Year ..... 46***
***5.7.4 Summary ..... 47***
**5.8 Recommendations Summary ..... 47**
**6.0 SITE GENERATED TRAFFIC ..... 48**
**6.1 Trip Generation ..... 48**
***6.1.1 Baseline Trip Generation ..... 49***
***6.1.2 Mode Split Adjustment ..... 50***
***6.1.3 Summary ..... 50***
**6.2 Trip Distribution ..... 50**
***6.2.1 Passenger Car Trips ..... 51***
***6.2.2 Truck Trips ..... 52***
**6.3 Trip Assignment ..... 52**
**7.0 FUTURE TOTAL TRANSPORTATION NETWORK REVIEW ..... 57**
**7.1 Future Total Traffic Volumes ..... 57**
**7.2 Warrants Assessment ..... 61**
**7.3 Traffic Modelling and Assumptions ..... 61**
***7.3.1 Roadway Geometry ..... 61***
***7.3.2 Modelling Parameters ..... 64***
**7.4 Intersection Operations ..... 64**
***7.4.1 2028 Horizon Year ..... 64***
***7.4.2 2033 Horizon Year ..... 67***
***7.4.3 2038 Horizon Year ..... 69***
***7.4.4 Summary ..... 72***

**7.5 Queueing Assessment ..... 73**
*7.5.1 2028 Horizon Year ..... 73*
*7.5.2 2033 Horizon Year ..... 74*
*7.5.3 2038 Horizon Year ..... 76*
*7.5.4 Summary ..... 77*
**7.6 Recommendations Summary ..... 77**

**8.0 SITE ACCESSES SENSITIVITY ANALYSIS – 2044 FUTURE TOTAL ..... 77**
**8.1 2044 Future Total Traffic Volumes ..... 78**
**8.2 Traffic Modelling and Assumptions ..... 80**
**8.3 Intersection Operations ..... 82**
**8.4 Queueing Assessment ..... 83**

**9.0 SITE ACCESS REVIEW ..... 84**
**9.1 Auxiliary Turn-Lane Recommendations ..... 84**
*9.1.1 Ultimate 2044 Horizon ..... 85*
*9.1.2 Interim 2028 Horizon ..... 85*
*9.1.3 Summary ..... 86*
**9.2 Intersection Sight Distance ..... 86**
*9.2.1 Unsignalized Accesses ..... 87*
*9.2.2 Signalized Access ..... 88*
*9.2.3 Summary ..... 89*
**9.3 Intersection Spacing ..... 89**

**10.0 CORRIDOR ACCESS MANAGEMENT REVIEW ..... 90**

**11.0 VEHICLE MANEUVERABILITY REVIEW ..... 91**
**11.1 Heavy Vehicles ..... 91**
**11.2 Emergency Vehicles ..... 92**
**11.3 Passenger Vehicles ..... 92**
**11.4 Summary ..... 92**

**12.0 PARKING REVIEW ..... 92**
**12.1 Vehicle Parking ..... 92**
*12.1.1 Vehicle Parking Justification ..... 92*
**12.2 Accessible Parking ..... 93**
**12.3 Bicycle Parking ..... 93**

**13.0 LOADING REVIEW ..... 94**

**14.0 TRANSPORTATION DEMAND MANAGEMENT STRATEGIES ..... 94**

**15.0 CONCLUSIONS & RECOMMENDATIONS ..... 97**

**15.1 Conclusions ..... 97**

**15.2 Recommendations ..... 100**

## LIST OF TABLES

**Table 1: Development Proposal** ..... **2**
**Table 2: Airport Road Access Configuration** ..... **2**
**Table 3: Study Road Network** ..... **5**
**Table 4: Existing Transit Services** ..... **7**
**Table 5: Traffic Data** ..... **7**
**Table 6: Applied Annual Growth Rates (2024 to 2025)** ..... **8**
**Table 7: 2025 Existing Traffic Operations – Signalized Intersections** ..... **11**
**Table 8: 2025 Existing Traffic Operations – Unsignalized Intersections** ..... **12**
**Table 9: 2025 Existing Queuing Assessment** ..... **13**
**Table 10: 2041 Region of Peel Mode Share Targets** ..... **14**
**Table 11: Town of Caledon Mode Share Targets** ..... **15**
**Table 12: Planned Mobility Improvements** ..... **20**
**Table 13: Applied Annual Growth Rates** ..... **22**
**Table 14: Background Developments** ..... **22**
**Table 15: Future Background Signal Warrant Analysis** ..... **32**
**Table 16: Airport Road & Old School Road/Healy Road Roundabout Geometry** ..... **36**
**Table 17: 2028 Future Background Traffic Operations – Signalized Intersections** ..... **37**
**Table 18: 2028 Future Background Traffic Operations – Unsignalized Intersections** ..... **39**
**Table 19: 2033 Future Background Traffic Operations – Signalized Intersections** ..... **40**
**Table 20: 2033 Future Background Traffic Operations – Unsignalized Intersections** ..... **41**
**Table 21: 2033 Future Background Traffic Operations – Roundabout Intersections** ..... **41**
**Table 22: 2038 Future Background Traffic Operations – Signalized Intersections** ..... **42**
**Table 23: 2038 Future Background Traffic Operations – Roundabout Intersections** ..... **43**
**Table 24: 2028 Future Background Queueing Assessment** ..... **44**
**Table 25: 2033 Future Background Queueing Assessment** ..... **45**
**Table 26: 2038 Future Background Queueing Assessment** ..... **46**
**Table 27: Future Background Recommended Auxiliary Turn Lane Geometry** ..... **47**
**Table 28: Future Background Recommended Improvements** ..... **48**
**Table 29: Baseline Vehicle Trip Generation** ..... **49**
**Table 30: Mode Split Adjusted Passenger Car Trip Generation** ..... **50**
**Table 31: Vehicle Trip Generation** ..... **50**
**Table 32: Passenger Car Trip Distribution** ..... **51**
**Table 33: Future Total Signal Warrant Analysis** ..... **61**
**Table 34: 2028 Future Total Traffic Operations – Signalized Intersections** ..... **64**

**Table 35: 2028 Future Total Traffic Operations – Unsignalized Intersections ..... 66**
**Table 36: 2033 Future Total Traffic Operations – Signalized Intersections ..... 67**
**Table 37: 2033 Future Total Traffic Operations – Signalized Intersections ..... 68**
**Table 38: 2033 Future Total Traffic Operations – Roundabout Intersection ..... 69**
**Table 39: 2038 Future Total Traffic Operations – Signalized Intersections ..... 70**
**Table 40: 2038 Future Total Traffic Operations – Unsignalized Intersections ..... 72**
**Table 41: 2038 Future Total Traffic Operations – Roundabout Intersections ..... 72**
**Table 42: 2028 Future Total Queueing Assessment ..... 73**
**Table 43: 2033 Future Total Queueing Assessment ..... 75**
**Table 44: 2038 Future Total Queueing Assessment ..... 76**
**Table 45: Future Total Recommended Auxiliary Turn Lane Geometry ..... 77**
**Table 46: Future Total Recommended Improvements ..... 77**
**Table 47: 2044 Future Total Traffic Operations – Signalized Intersections (Sensitivity) ..... 82**
**Table 48: 2044 Future Total Sensitivity Traffic Operations – Unsignalized Intersections (Sensitivity) 83**
**Table 49: 2044 Future Total Queueing Assessment (Sensitivity) ..... 84**
**Table 50: Site Access Recommended Improvements ..... 86**
**Table 51: Sight Distance Assessment – Unsignalized Accesses ..... 88**
**Table 52: Sight Distance Assessment – Signalized Accesses ..... 89**
**Table 53: Access Spacing Review ..... 90**
**Table 54: Town of Caledon Zoning By-Law 2006-50 Minimum Vehicle Parking Requirements ..... 92**
**Table 55: Parking Approval and Proposal Trends in the Region of Peel ..... 93**
**Table 56: Integrated Accessibility Standards O.Reg. 191/11 Accessible Parking Requirements ..... 93**
**Table 57: Town of Caledon Active Transportation Master Plan Bicycle Parking Requirements ..... 94**
**Table 58: Town of Caledon Zoning By-Law 2006-50 Minimum Loading Requirements ..... 94**
**Table 59: Site Specific Transportation Demand Management Measures ..... 95**

## LIST OF FIGURES

**Figure 1: Subject Lands** ..... **1**
**Figure 2: Site Plan** ..... **3**
**Figure 3: Existing Study Road Network** ..... **6**
**Figure 4: Forecasted 2025 Existing Traffic Volumes** ..... **9**
**Figure 5: Proposed Mayfield Road Six-Lane Cross-Section (Region of Peel)** ..... **16**
**Figure 6: Proposed Airport Road Four-Lane Cross-Section (Region of Peel)** ..... **17**
**Figure 7: Proposed Airport Road Roundabout Approach Cross-Section (Region of Peel)** ..... **17**
**Figure 8: Urban Four-Lane Arterial Cross-Section (Town of Caledon)** ..... **18**
**Figure 9: Proposed Highway 413 Corridor** ..... **19**
**Figure 10: Background Developments Map** ..... **23**
**Figure 11: 2028 Background Development Traffic Volumes** ..... **26**
**Figure 12: 2033 & 2038 Background Development Traffic Volumes** ..... **27**
**Figure 13: 2028 Future Background Traffic Volumes** ..... **29**
**Figure 14: 2033 Future Background Traffic Volumes** ..... **30**
**Figure 15: 2038 Future Background Traffic Volumes** ..... **31**
**Figure 16: 2033 Future Background Study Road Network** ..... **34**
**Figure 17: 2028 Passenger Car Site Traffic Volumes** ..... **53**
**Figure 18: 2028 Heavy Truck Site Traffic Volumes** ..... **54**
**Figure 19: 2033 & 2038 Passenger Car Site Traffic Volumes** ..... **55**
**Figure 20: 2033 & 2038 Heavy Truck Site Traffic Volumes** ..... **56**
**Figure 21: 2028 Future Total Traffic Volumes** ..... **58**
**Figure 22: 2033 Future Total Traffic Volumes** ..... **59**
**Figure 23: 2038 Future Total Traffic Volumes** ..... **60**
**Figure 24: 2028 Future Total Study Road Network** ..... **62**
**Figure 25: 2033 Future Total Study Road Network** ..... **63**
**Figure 26: 2044 Future Total Traffic Volumes (Sensitivity)** ..... **79**
**Figure 27: 2044 Future Total Study Road Network (Sensitivity)** ..... **81**

## LIST OF APPENDICES

**Appendix B: Correspondence**

**Appendix C: Traffic Data**

**Appendix D: Tullamore Northwest Employment Area Secondary Plan Transportation Study Excerpts**

**Appendix E: Level of Service Definitions**

**Appendix F: Detailed Capacity Analyses**

**Appendix G: Detailed Queueing Analyses**

**Appendix H: Transportation Planning Policy Excerpts**

**Appendix I: Transportation Improvement Excerpts**

**Appendix J: Background Development Excerpts**

**Appendix K: Warrants Assessment Reports**

**Appendix L: Institute of Transportation Engineers' Trip Generation Manual Excerpts**

**Appendix M: Transportation Tomorrow Survey Data**

**Appendix N: Site Access Review Excerpts**

**Appendix O: Proposed Access Spacing Diagrams**

**Appendix P: Corridor Access Management Diagram**

**Appendix Q: Vehicle Turning Diagrams**

**Appendix R: Zoning By-Law Excerpts**

**Appendix S: Vehicle Parking Justification Excerpts**

# 1.0 Introduction

Broccolini Airport Road LP (Broccolini) retained C.F. Crozier & Associates (Crozier) to prepare a Transportation Impact Study in support the Zoning By-Law Amendment and Site Plan Application for the proposed industrial warehouse development fronting Airport Road in the Town of Caledon, Region of Peel. The Proposed Development is located within the Tullamore Northwest Employment Area Secondary Plan.

## 1.1 Development Lands

The Subject Lands cover an area of 24.24 ha and currently consist of agricultural fields, forested areas, and natural heritage areas. The Subject Lands are bound by undeveloped greenfield lands to the north, south and west, and Airport Road to the east and Torbram Road to the west.

**Figure 1** illustrates the Subject Lands.

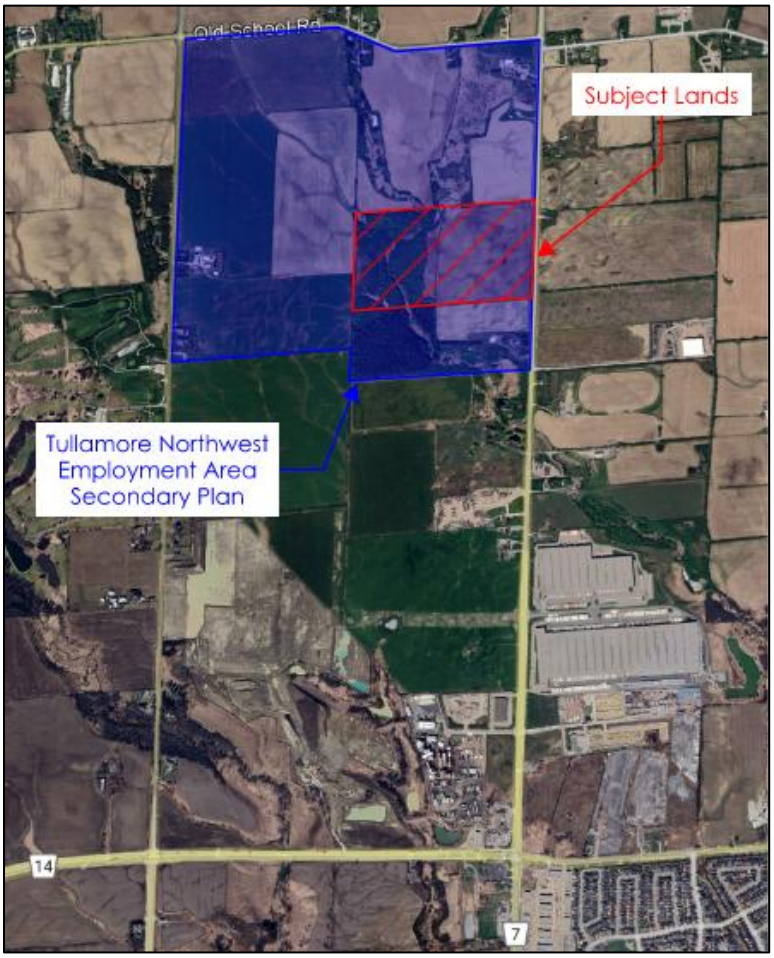



**Figure 1: Subject Lands**

## 1.2 Development Proposal

The Site Plan prepared by Powers Brown Architecture proposes 2 industrial warehouse buildings, with a total gross floor area of 71,385 m$^2$. To facilitate the development, 3 site accesses off Airport Road are proposed. The north and south site accesses are proposed to be right-in/right-

out (RIRO) passenger car accesses, with the central site access being a full moves access used by passenger cars and left-turning passenger cars.

**Table 1** outlines the proposed development statistics.

**Table 1: Development Proposal**

| Land Use | Building | Statistic |
|---|---|---|
| Warehouse | Building A | 23,576 $m^2$ |
| | Building B | 47,809 $m^2$ |
| | **Total** | **71,385 $m^2$** |
| **Parking & Loading** | | |
| Vehicle Parking | Building A | 128 spaces |
| | Building B | 206 spaces |
| | **Total** | **334 spaces** |
| Loading[1] | Building A | 36 spaces |
| | Building B | 67 spaces |
| | **Total** | **103 spaces** |

**Table 2** outlines the proposed access configuration.

**Table 2: Airport Road Access Configuration**

| Access Location | Access Type | Expected Vehicles |
|---|---|---|
| North | RIRO | Passenger Cars, Emergency Vehicles |
| Central | Full Moves | Heavy Vehicles, Passenger Cars, Emergency Vehicles |
| South | RIRO | Passenger Cars, Emergency Vehicles |

**Figure 2** includes the Site Plan.

# SITE PLAN AND BUILDING STATISTICS

**CURRENT ZONING:** AGRICULTURAL
**PARENT ZONING:** SERVICE INDUSTRIAL (MS)

**BY-LAW:** SECTION 8 OF THE TOWN OF CALEDON BY-LAW; REVISED: June, 03, 2022

**SITE STATISTICS**

| | |
|---|---|
| LOT AREA: | +/- 136,086.06 M² |
| LOT AREA AFTER ROAD WIDENING: | +/- 134,493.65 M² |
| BUILDING A GFA: | 253,771.24 FT² / 23,576.12 M² |
| BUILDING B GFA: | 514,608.89 FT² / 47,808.73 M² |
| LOT FRONTAGE: | 366.009 M (MIN. 30 M) |

| BUILDING HEIGHT & SETBACKS | REQUIRED | PROPOSED |
|---|---|---|
| **SETBACKS** | | |

**NOTE:** ALL SETBACKS ARE MEASURED FROM THE NEW PROPERTY LINE AFTER ROAD WIDENING.

| | | | |
|---|---|---|---|
| FRONT YARD | | | |
| BUILDING SETBACK: | | | |
| | BUILDING A | 9 M | 16.96 M |
| | BUILDING B | 9 M | 16.68 M |
| PARKING SETBACK | | | |
| | BUILDING A | 6 M | 44.49 M |
| | BUILDING B | 6 M | 28 M |
| SIDE YARD | | | |
| EXT. BUILDING SETBACK | | | |
| | BUILDING A | 7.5 M | N/A |
| | BUILDING B | 7.5 M | N/A |
| INT. BUILDING SETBACK | | | |
| | BUILDING A | 6 M & 3 M | 24.60 M |
| | BUILDING B | 6 M & 3 M | 24.45 M |
| PARKING SETBACK | | | |
| | BUILDING A | 3 M | 3 M |
| | BUILDING B | 3 M | 3 M |
| REAR YARD | | | |
| | BUILDING A | 7.5 M | 1.11 M |
| | BUILDING B | 7.5 M | 1.09 M |
| DRIVEWAY SETBACK | | 1.5 M | 9.08 M (NORTH)<br>8.93 M (SOUTH) |
| **MAX PERMITTED BLDG HEIGHT** | | | |
| | BUILDING A | 12.2 M | 12.617 M |
| | BUILDING B | 12.2 M | 14.909 M |
| **MAX PERMITTED BLDG AREA** | | 50% | 52% |
| **PARKING SPACE SIZES** | | | |
| STANDARD SIZE | | 2.75 X 6.0 M | YES |
| AISLE WIDTH | | 6.0 M | YES |
| FIRE TRUCK ENTRANCE WIDTH | | 9.0 M | 17 M |

**PARKING REQUIREMENTS**
*REQUIRED PER PROPOSED SITE SPECIFIC STANDARDS OF 1 SPACE PER 230 SM GFA*

| | | |
|---|---|---|
| BUILDING A | 102 SPACES | 128 SPACES |
| BUILDING B | 208 SPACES | 206 SPACES |
| **BARRIER FREE PARKING** | | |
| BUILDING A | 4 SPACES | 5 SPACES |
| BUILDING B | 6 SPACES | 7 SPACES |
| **EV PARKING** | | |
| BUILDING A | 5 SPACES | 6 SPACES |
| BUILDING B | 10 SPACES | 10 SPACES |

**LOADING REQUIREMENTS**
*ACCORDING TO 5.2.3 NON-RESIDENTIAL PARKING REQUIREMENTS, TOWN OF CALEDON ZONING BY-LAW; TABLE 5.3.2; 3 LOADING SPACES PLUS 1 ADDITIONAL LOADING SPACE FOR EACH ADDITIONAL 9,300 M2 OR PORTION THEREOF IN EXCESS OF 7,441 M2*

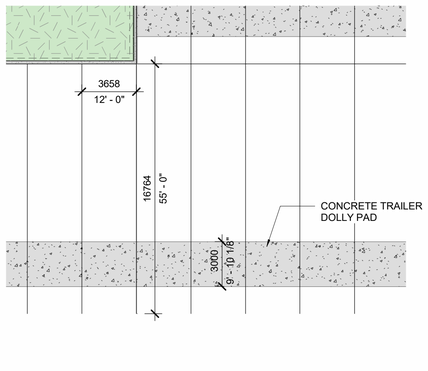
| | | |
|---|---|---|
| BUILDING A | 5 SPACES | 36 SPACES |
| BUILDING B | 8 SPACES | 67 SPACES |
| **TRAILER PARKING** | | |
| BUILDING A | | 16 SPACES |
| BUILDING B | | 65 SPACES |
| **BIKE PARKING REQUIREMENTS** | | |
| BUILDING A | 0 | 4 SPACES |
| BUILDING B | 0 | 4 SPACES |

| LANDSCAPE | REQUIRED | PROPOSED |
|---|---|---|
| LANDSCAPE AREA | 10% | 13.35% |
| PLANTING STRIP WIDTH | 9 M (*) | YES |
| PLANTING STRIP (INT. SIDE YARD) | 1.5 M | YES |
| PLANTING STRIP (TRUCK LOADING) | 12 M | YES |

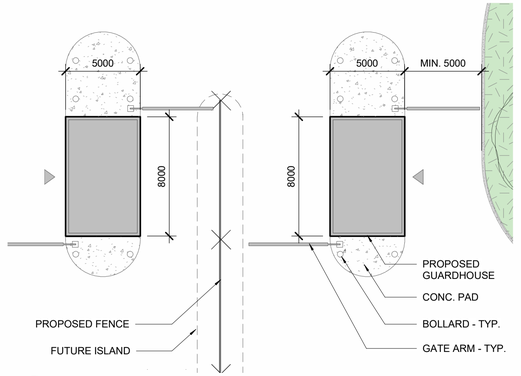
(*) PLANTING STRIP WIDTH IS LESS THAN 9 M IN FRONT OF BUILDING B

**NOTE**

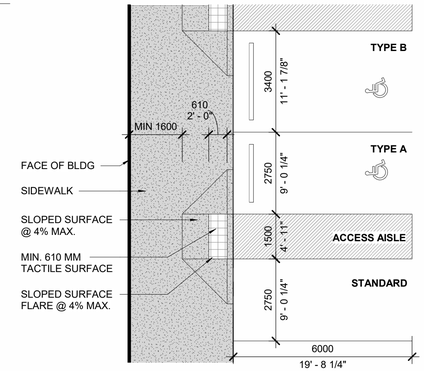
- 20 YEAR ROOFING WARRANTY
- ADD TRUCK GUARDS FOR DRIVE-IN DOORS
- 45,000lbs DOCKS & POWER TRUCK RESTRAINTS
- EXTERIOR WATER SPIGOT AT RAMPS
- BASIC TRUCK DOCKS (LAMINATED RUBBER BUMPERS)
- EXTERIOR WATER SPIGOTS
- WAREHOUSE INTERIOR LIGHTING AT 30 fc AT 36" AFF IN NARROW AISLE WITH MOTION SENSORS
- FILL FLOOR JOINTS WITH SEMI RIGID EPOXY, 80MM
- PROVIDE HVLS CEILING FANS
- WHITE BOX THE WAREHOUSE INTERIOR WALLS
- PAINT ROOF STRUCTURE AT SPEED BAY
- PAINT THE BUILDING COLUMNS AS WHITE AND SAFETY YELLOW TO A HEIGHT OF 12"
- FULLY FENCE THE TRUCK COURT AND INCLUDE AN ELECTRIC OPERATED GATE



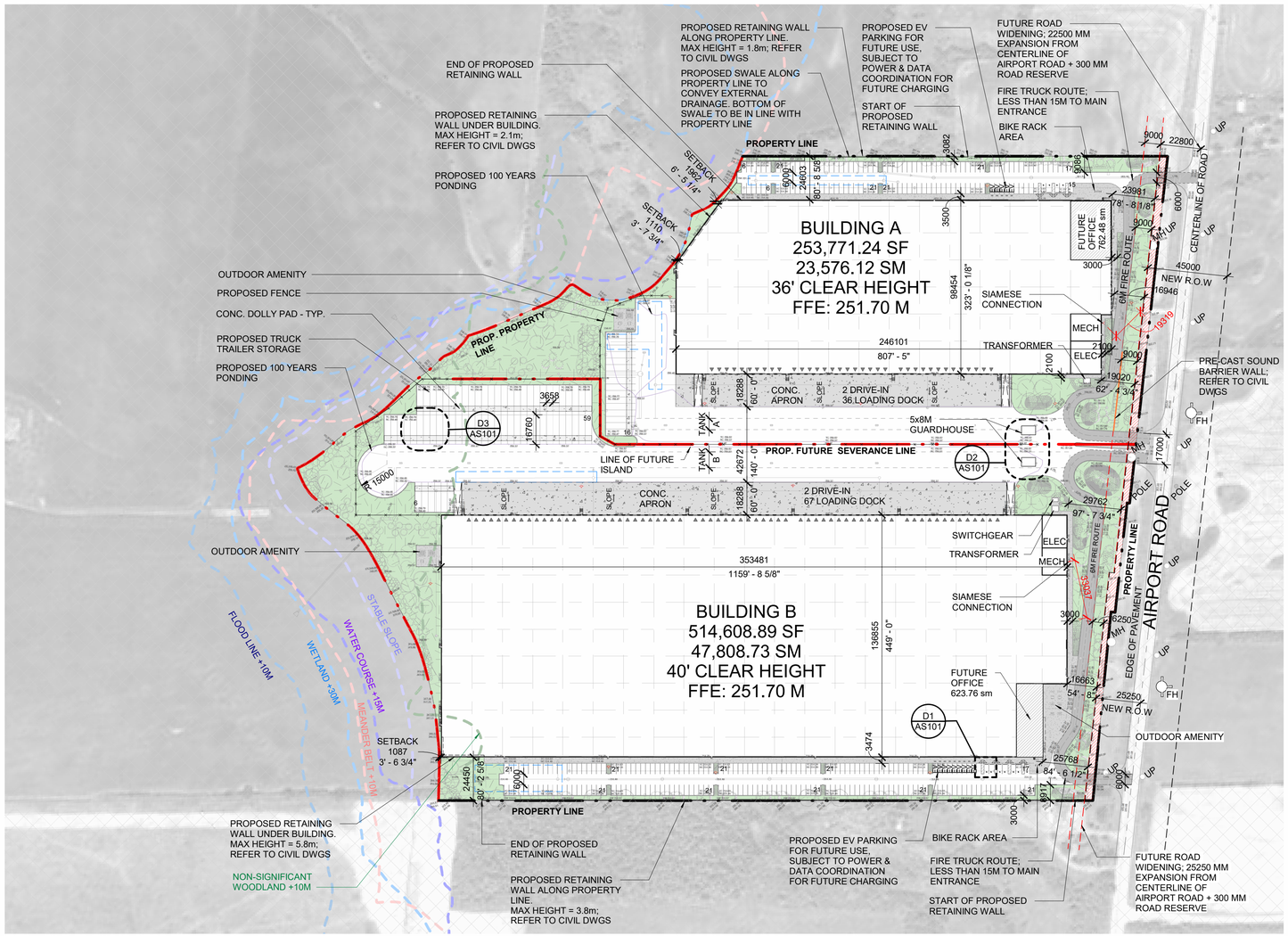

D3 PROP. TRUCK TRAILER STORAGE
SCALE: 1 : 200




D2 TRUCK GUARDHOUSE
SCALE: 1 : 200




D1 BARRIER-FREE PARKING & CURB RAMP
SCALE: 1 : 100




N

OVERALL SITE PLAN
SCALE: 1 : 1500


powers brown architecture
411 Richmond Street E
Suite 206
Toronto, Ontario M5A 3S5
647.931.9787
www.powersbrown.com


**PROJECT TITLE**

BROCCOLINI AIRPORT ROAD

A PROJECT FOR

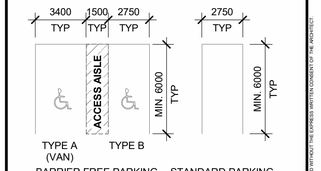
BROCCOLINI REAL ESTATE GROUP

**GENERAL NOTES**

- DESIGNATED FIRE ACCESS LANE - MINIMUM 6M
- NOT IN SCOPE
- LANDSCAPE
- SIDEWALK
- CONCRETE
- UP — UTILITY POLE
- MH — MANHOLE
- FH — EXIST. FIRE HYDRANT / PROP. FIRE HYDRANT
- R.O.W — RIGHT-OF-WAY
- PROPERTY LINE
- SETBACK
- INFILTRATION GALLERY

A PROVIDE FIRE LANE STRIPING PER LOCAL JURISDICTION

B FIRE LANE RADII TO BE 12 m @ CENTERLINE




| △ | DATE | REVISION |
|---|---|---|
| 1 | 2025-10-30 | ISSUE FOR COORDINATION |
| 2 | 2025-11-14 | ISSUE FOR SPA |

**PROJECT NO:** 255025
**DRAWN BY:** NM
**CHECKED BY:** LD

**SHEET NAME**

OVERALL SITE PLAN

**SEAL**

ONTARIO ASSOCIATION OF ARCHITECTS
AMANDA ALVARO SANABRIA
LICENCE 7712
2025-11-14

**SHEET NUMBER**

AS101


COPYRIGHT © 2025 POWERS BROWN ARCHITECTURE - THIS DRAWING AND THE INFORMATION SHOWN ON IT ARE THE SOLE PROPERTY OF POWERS BROWN ARCHITECTURE. NO PORTION OF THIS DRAWING MAY BE COPIED WITHOUT THE EXPRESS WRITTEN CONSENT OF THE ARCHITECT



Autodesk Docs://Broccolini Airport Road Caledon/255025_Broccolini Airport Road_C&S_R25.rvt
2025-11-14 5:50:15 PM

### 1.3 Study Purpose and Scope

The purpose of the study is to evaluate the transportation-related impacts of the Proposed Development on the study road network and to recommend or confirm any required mitigation measures, if warranted.

The study has been completed in accordance with the agreed upon Terms of Reference with the Town of Caledon and Region of Peel staff as well as the following municipal guidelines:

- Region of Peel's Transportation Impact Study Guidelines (n.d.)
- Region of Peel's Synchro 9 Guidelines (December 2016)

The study horizons to be assessed as part of the network review will include an evaluation of the 2025 (existing), 2028 (buildout), 2033 (5-years post buildout), and 2038 (10-years post buildout) horizons, as confirmed with Town and Region staff. It is noted that a sensitivity analysis of the proposed site accesses under the ultimate 2044 future total conditions is also included herein, per the Region and Town's request.

As confirmed in the Terms of Reference, the Transportation Impact Study considers the following existing study intersections:

- Mayfield Road & Airport Road
- Torbram Road & Old School Road
- Airport Road & Old School Road/Healy Road
- Airport Road & 12333 Airport Road Access
- Airport Road & Perdue Court/Davis Lane

**Appendix A** outlines the Terms of Reference correspondence.

## 2.0 Existing Transportation Context

This section outlines the current conditions of the transportation network in the vicinity of the site. Details of the study road network, including traffic controls, lane configurations, speed limits, transit routes and stops, active transportation infrastructure and other relevant transportation elements are identified. The existing traffic operations are also summarized.

### 2.1 Study Road Network

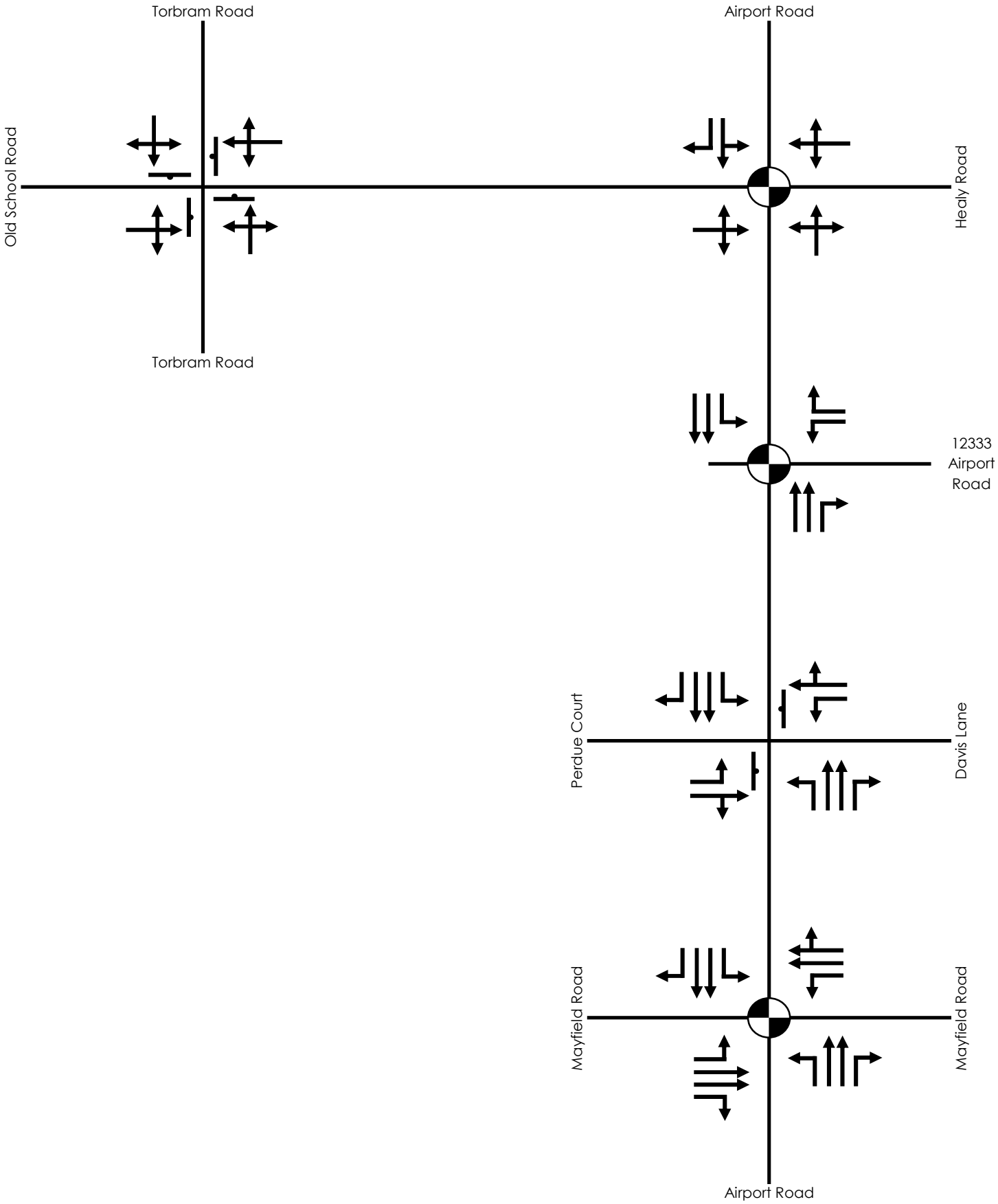
The study road network consists of the existing road network near the site, which includes the study intersections and the adjoining roadway segments. **Table 3** summarizes the study roadways, including road and active transportation network features.

**Table 3: Study Road Network**

| Feature | Airport Road | Old School Road/ Healy Road | Perdue Court/Davis Lane |
|---|---|---|---|
| Direction | Two-Way (North-South) | Two-Way (East-West) | Two-Way (East-West) |
| Span | North Region Boundary to Hwy 427 | Winston Churchill Blvd to Queen St S | N/A |
| Classification | Arterial | Arterial | Local |
| Jurisdiction | Region | Town | Town |
| Speed Limit | 60-80 km/h[2] (Posted) | 70 km/h (Posted) | 50 km/h (Assumed) |
| Number of Travel Lanes | 4 Lanes | 2 Lanes | 2 Lanes |
| Median Type | Concrete[5] | None | None |
| Pedestrian Facilities | Multi-Use Path[5] (East Side) | None | Sidewalk (South Side) |
| Cycling Facilities | Multi-Use Path[5] (East Side) | None | None |

*Note 1: Mayfield Road has a posted speed limit of 60 km/h for eastbound traffic beginning approximately 460 m west of Airport Road, and 60 km/h posted speed limit for westbound traffic ending approximately 450 m west of Airport road. 80 km/h posted speed limit elsewhere on the boundary road network.*
*Note 2: Airport Road has a speed limit of 60 km/h both directions, south of Purdue Court/Davis Lane, 80 km/h elsewhere*
*Note 3: Mayfield Road has four travel lanes, east of Airport Road and 6 travel lanes, west of Torbram Road.*
*Note 4: Torbram Road has four travel lanes and a multi-use path on the west side and sidewalk on the east side, south of Mayfield Road.*
*Note 5: Airport Road has a multi-use path on the east side and a concrete median, south of 12333 Airport Road Access.*

**Figure 3** illustrates the existing study road network.




| Legend | Broccolini Airport Road | | Figure 3 |
|---|---|---|---|
| Signal Control<br>Stop Control<br>Roundbout Control | 2025 Existing Study Road Network | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

### 2.2 Transit Network

The Town does not currently have its own transit system, but areas that abut Mayfield Road, the border between Caledon and Brampton, currently benefit from extensions of Brampton Transit routes through service agreements between the Town and Brampton Transit.

**Table 4** outlines the existing transit routes, direction, days of operation, peak hour headways, and the location of bus stops in the study area as of August 2025.

**Table 4: Existing Transit Services**

| Route | Direction | Limits | Days of Operation | Peak Hour Headway[1] | Transit Stops in Study Area |
|---|---|---|---|---|---|
| 30 Airport | Two-Way (North-South) | Mayfield Rd/12333 Airport Rd to Westwood Mall | Monday to Sunday[2] | 8-10 min[2] | 12203 Airport Rd |

*Note 1: Frequency and operations may have changed due to change in travel demands.*
*Note 2: Brampton Transit extension into Caledon is limited service from Monday to Saturday with longer headways.*

Brampton Transit only operates one bus route within the study area. The closest transit stop at 12203 Airport Road is located approximately 1.2 km from the Subject Development. It is noted that that the extension into the Town of Caledon along Brampton Transit Route 30 is limited service from Monday to Saturday with longer headways.

The existing bus stops along Airport Road, north of Mayfield Road provides limited access to the Subject Lands, with transit users required to walk to and from the existing bus stops and the Proposed Development. Furthermore, with limited service in the Town of Caledon, there is the opportunity to improve transit frequency as the study area is developed.

## 3.0 Existing Transportation Network Review

### 3.1 Transportation Data

The turning movement counts (TMCs) utilized in the Tullamore Northwest Employment Area Secondary Plan Transportation Study was also used herein. The TMCs were conducted by Spectrum Traffic on Wednesday November 20, 2024, between 6:00 a.m. to 10:00 a.m., and 3:00 p.m. to 7:00 p.m. to reflect typical commuter peak hours.

**Table 5** summarizes the TMCs and signal timing plans. **Appendix B** contains the relevant traffic count and signal timing plan data.

**Table 5: Traffic Data**

| Intersection | TMCs | | Signal Timing Plans | |
|---|---|---|---|---|
| | Date | Source | Date | Source |
| Airport Road & Old School Road/Healey Road | November 20, 2024 | Spectrum | November 7, 2024 | Region |
| Airport Road & 12333 Airport Road Access | | | October 16, 2024 | Region |
| Airport Road & Perdue Court/Davis Lane | | | N/A | N/A |

### 3.2 Existing Traffic Volumes

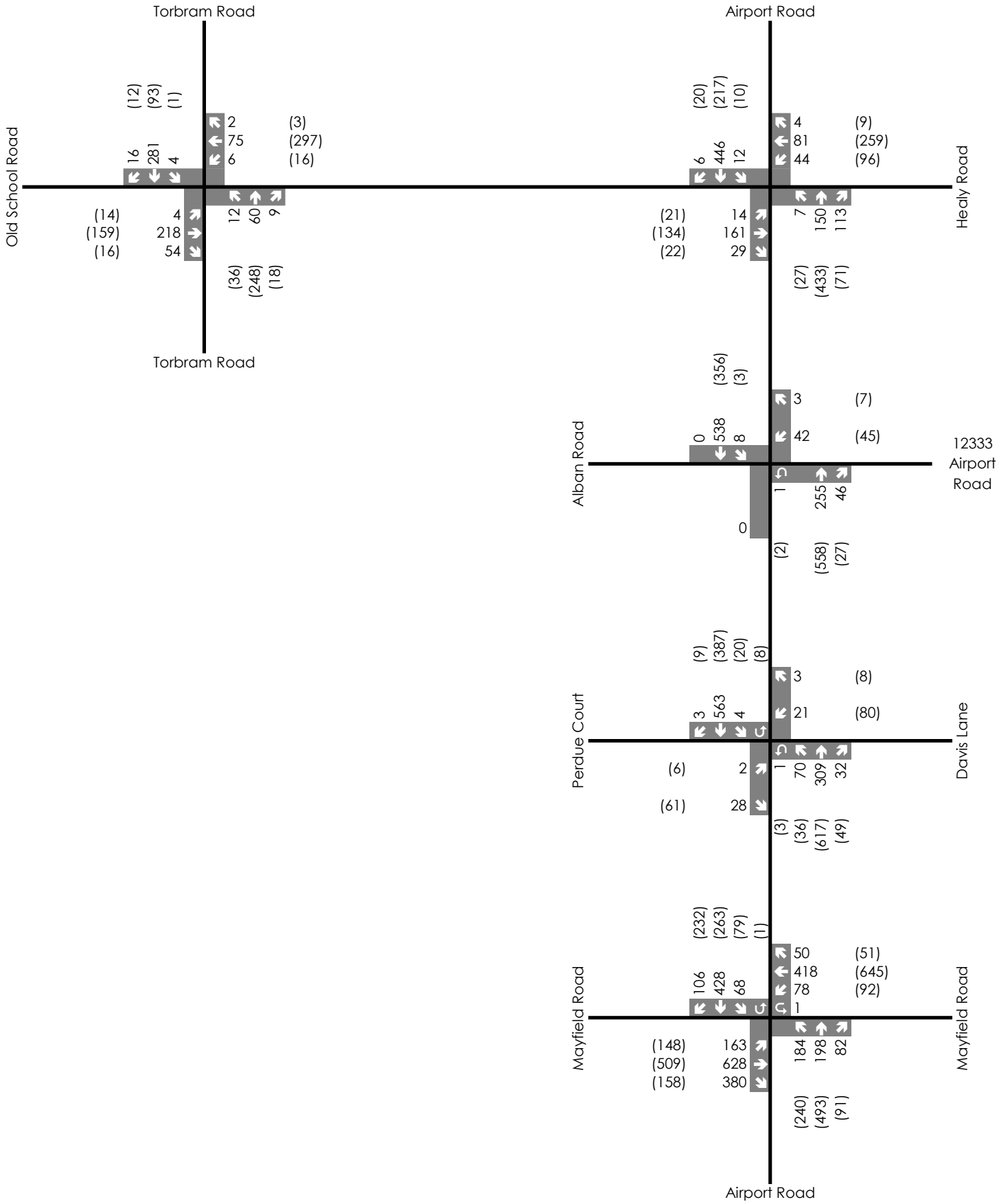
The 2024 traffic volumes were grown to 2025 volumes based on the corridor growth rates established in the Tullamore Northwest Employment Area Secondary Plan Transportation Study (Crozier, May 2025). **Appendix C** includes the Tullamore Northwest Employment Area Secondary Plan Transportation Study excerpts.

**Table 6** summarizes the growth rates applied to the study roadways.

**Table 6: Applied Annual Growth Rates (2024 to 2025)**

| Roadway | 2024 to 2025 |
|---|---|
| Mayfield Road | 1.0% |
| Airport Road | 1.5% |
| Torbram Road | 2.0% |
| Old School Road/Healy Road | 2.0% |
| Perdue Court/Davis Lane | 0.0% |

**Figure 4** outlines the forecasted 2025 existing traffic volumes used in assessing the existing conditions.




| Legend | Broccolini Airport Road | | Figure 4 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | Forecasted 2025 Existing Traffic Volumes | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

### 3.3 Traffic Modelling and Assumptions

The intersection operations were modelled in conformance with the Region of Peel's Traffic Impact Study guidelines (n.d.). For parameters where guidelines were not provided, default values were used for the modelling of existing conditions.

Consistent with the Region's guidelines, a peak hour factor of 1.00 was used as well as a lane width of 3.5 m for exclusive movements, and 3.7 m for through and shared movements.

The signal timing plans identified in **Section 3.1** were incorporated into the model for the signalized study intersections, while stop control was applied in the model to the remaining study intersections. For the signalized intersections, no lost time adjustments were applied, consistent with the Region's guidelines.

The assessment of the study intersections was conducted using Synchro methodology for signalized intersections, Highway Capacity Manual (HCM) 2000 for two-way stop controlled intersections and HCM 2010 for all-way stop controlled intersections. **Appendix D** outlines the LOS definitions.

Finally, queuing was analyzed using SimTraffic software. The SimTraffic modelling was run using 3 simulations with 15 min seeding and 60 min recording periods.

### 3.4 Intersection Operations

The section herein reviews the intersection operations under 2025 existing conditions. This assessment includes key metrics including level of service (LOS), control delay and volume-to-capacity (v/c) ratio. **Appendix E** contains the detailed capacity analysis worksheets.

Signalized Intersections

**Table 7** details the 2025 existing traffic operations for the signalized study intersections.

**Table 7: 2025 Existing Traffic Operations – Signalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Mayfield Road & Airport Road | **Overall** | **C** | **C** | **25** | **31** | **0.74** | **0.79** |
| | EBL | B | B | 11 | 13 | 0.32 | 0.40 |
| | EBT | B | B | 18 | 19 | 0.35 | 0.30 |
| | EBR | A | A | 3 | 3 | 0.40 | 0.18 |
| | WBL | B | B | 11 | 11 | 0.21 | 0.19 |
| | WBTR | B | C | 20 | 22 | 0.31 | 0.40 |
| | NBL | D | E | 51 | 58 | 0.74 | 0.77 |
| | NBT | D | E | 43 | 61 | 0.31 | 0.79 |
| | NBR | A | B | 9 | 11 | 0.28 | 0.32 |
| | SBL | C | D | 33 | 42 | 0.23 | 0.47 |
| | SBT | E | D | 55 | 50 | 0.74 | 0.42 |
| | SBR | B | A | 18 | 10 | 0.36 | 0.53 |
| Airport Road & Old School Road/Healy Road | **Overall** | **C** | **D** | **30** | **40** | **0.77** | **0.84** |
| | EBLTR | E | E | 65 | 63 | 0.77 | 0.70 |
| | WBLTR | E | E | 59 | 60 | 0.61 | 0.84 |
| | NBLT | B | C | 14 | 29 | 0.19 | 0.58 |
| | NBR | A | A | 1 | 2 | 0.10 | 0.06 |
| | SBLT | B | C | 18 | 24 | 0.49 | 0.33 |
| | SBR | A | A | 0 | 2 | 0.01 | 0.02 |
| Airport Road & 12333 Airport Road Access | **Overall** | **A** | **A** | **6** | **6** | **0.35** | **0.34** |
| | NBT | E | E | 58 | 58 | 0.35 | 0.34 |
| | NBR | C | C | 31 | 27 | 0.02 | 0.04 |
| | SBL | A | A | 2 | 4 | 0.11 | 0.21 |
| | SBT | A | A | 1 | 1 | 0.05 | 0.03 |
| | WBL | A | A | 4 | 3 | 0.01 | 0.01 |
| | WBR | A | A | 4 | 3 | 0.20 | 0.14 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The signalized study intersections are currently operating at a LOS "D" or better with low to moderate control delays and v/c ratios. As such, these intersections are operating efficiently with reserve capacity for future growth.

Unsignalized Intersections

**Table 8** details the 2025 existing traffic operations for the unsignalized study intersections.

**Table 8: 2025 Existing Traffic Operations – Unsignalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Torbram Road & Old School Road** | **Overall** | **B** | **B** | **11** | **13** | **0.45** | **0.48** |
| | EBLTR | B | B | 11 | 11 | 0.38 | 0.30 |
| | WBLTR | A | B | 9 | 14 | 0.12 | 0.48 |
| | NBLTR | A | B | 9 | 13 | 0.13 | 0.47 |
| | SBLTR | B | B | 13 | 13 | 0.45 | 0.22 |
| **Airport Road & Perdue Court/Davis Lane** | **Overall** | **D** | **E** | **27** | **44** | **0.17** | **0.50** |
| | EBL | E | C | 35 | 20 | 0.02 | 0.02 |
| | EBTR | B | A | 12 | 10 | 0.05 | 0.08 |
| | WBL | D | E | 29 | 48 | 0.12 | 0.50 |
| | WBTR | B | B | 11 | 11 | 0.00 | 0.01 |
| | NBL | A | A | 10 | 10 | 0.08 | 0.04 |
| | NBT | A | A | 0 | 0 | 0.09 | 0.18 |
| | NBR | A | A | 0 | 0 | 0.02 | 0.03 |
| | SBL | A | B | 9 | 13 | 0.00 | 0.04 |
| | SBT | A | A | 0 | 0 | 0.17 | 0.11 |
| | SBR | A | A | 0 | 0 | 0.00 | 0.01 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*

*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The unsignalized study intersections are currently operating at a LOS "E" or better with moderate control delays and v/c ratios. As such, these intersections are operating efficiently with reserve capacity for future growth.

### 3.5 Queueing Assessment

SimTraffic was used to assess the queues within the study road network. The 95th percentile queues were compared against the available storage length to determine if any queues are expected to extend beyond the auxiliary turn lanes. **Appendix F** contains the detailed queueing analysis worksheets.

**Table 9** outlines the results of the 2025 existing queueing assessment.

**Table 9: 2025 Existing Queuing Assessment**

| Intersection | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|
| | | A.M. | P.M. | |
| Mayfield Road & Airport Road | EBL | 55 | 55 | 200 |
| | WBL | 40 | 45 | 50 |
| | WBTR | 55 | 80 | 70 |
| | NBL | 70 | 125 | 95 |
| | NBR | 25 | 25 | 60 |
| | SBL | 45 | 45 | 100 |
| | SBR | 35 | 45 | 105 |
| Airport Road & Old School Road/Healy Road | NBR | 20 | 30 | 15 |
| | SBR | 5 | 10 | 50 |
| Airport Road & 12333 Airport Road Access | WBR | 10 | 10 | 100 |
| | NBR | 10 | 10 | 145 |
| | SBL | 10 | 5 | 75 |
| Airport Road & Perdue Court/Davis Lane | WBL | 25 | 25 | 30 |
| | NBL | 25 | 15 | 70 |
| | NBR | - | - | 65 |
| | SBL | 5 | 25 | 70 |
| | SBR | - | 5 | 60 |

*Note 1: Rounded up to the nearest 5 m.*

The queues for some movements are expected to extend beyond the storage length. However, these queues for the following movements and intersections can be accommodated within the provided taper length or two-way left-turn lane, accordingly:

- Mayfield Road & Airport Road (WBTR, NBL)
- Airport Road & Old School Road/Healy Road (NBR)

No other queueing concerns are observed at the study intersections. Overall, queuing is not expected to result in notable operational impacts within the study road network.

## 4.0 Future Transportation Context

The study area is expected to experience significant changes from a transportation perspective with the development of existing greenfield lands. The following documents, including relevant environmental assessments (EA) are reviewed in the subsequent sections:

Completed and Ongoing Planning Studies

- Region of Peel 2051 Transportation Master Plan (2019)
- Town of Caledon Official Plan (March 2024)
- Town of Caledon Multi-Modal Transportation Master Plan (June 2024)
- Town of Caledon Active Transportation Master Plan (June 2024)

Planned Mobility Infrastructure

- Airport Road EA

- Highway 413 Individual EA

Secondary Plan Areas

- Tullamore Northwest Employment Area

## 4.1 Completed and Ongoing Planning Studies

### *4.1.1 Region of Peel 2051 Transportation Master Plan*

The Region is currently undertaking an update to their Transportation Master Plan, a key aspect of which will be the target of 50% sustainable mode share by 2041 Region-wide. This is envisioned by taking a balanced approach to put strategic investment in active transportation and transit infrastructure.

A key approach to this target is that new developments will have to surpass this target to counteract the lower sustainable mode shares associated with existing developments. Therefore, new developments have to be designed to be more walkable, transit oriented complete communities, that help to balance peak hour trip demand via more sustainable modes.

The Region of Peel's Long Range Transportation Plan (LRTP) (2019) outlined mode share targets for the entire Region of Peel as well as each individual municipality. **Table 10** outlines the Region of Peel's mode share targets for both the entire Region as well as the Town of Caledon.

**Table 10: 2041 Region of Peel Mode Share Targets**

| Mode | Region of Peel | Town of Caledon |
|---|---|---|
| Automobile Driver | 50% | 68% |
| Automobile Passenger (Carpool) | 18% | 10% |
| Transit | 17% | 3% |
| Walk | 9% | 4% |
| Cycle | 2% | 1% |
| Other[1] | 4% | 15% |
| **Total** | **100%** | **100%** |
| *Sustainable Transportation* | *50%* | *32%* |

*Note 1: Includes school buses, taxis, and motorcycles.*

The Region's mode share targets outlined herein are appropriate for the study area given the planned transit route extensions as well as the proximity to the future transit station at the Highway 413 Airport Road interchange and Highway 413 transit corridor.

**Appendix G** includes Region of Peel LRTP excerpts.

### *4.1.2 Town of Caledon Multi-Modal Transportation Master Plan*

The Town of Caledon's Multi-Modal Transportation Master Plan (MMTMP) (June 2024) was adopted by Town Council on June 25, 2024. The MMTMP outlines the future transportation infrastructure, services and policies to support the Town's growth.

The MMTMP also outlines road improvements to be completed by the 2031, 2041 and 2051 horizon years. Future active transportation and transit networks were also proposed with the implementation left for further studies.

It is noted that the Town has initiated an addendum to the MMTMP, and the work is currently ongoing. Nevertheless, the information outlined the MMTMP is used herein as the details outlined in the addendum were not finalized at the time of writing. The improvements pertinent to the Subject Lands are discussed further in **Section 4.2**

In the effort to transition to more sustainable modes of transportation, the MMTMP also outlines future mode share targets within the Town. **Table 11** outlines the Town of Caledon's mode share targets for the 2041 and 2051 horizon years per the MMTMP.

**Table 11: Town of Caledon Mode Share Targets**

| Mode | 2041 Vision[1] | 2051 Vision |
|---|---|---|
| Automobile Driver | 68% | 60% |
| Automobile Passenger (Carpool) | 10% | 13% |
| Transit | 3% | 6% |
| Walk | 4% | 6% |
| Cycle | 1% | 1% |
| Other[2] | 15% | 14% |
| **Total** | **100%** | **100%** |
| *Sustainable Mode Share* | *32%* | *40%* |

*Note 1: Consistent with the Region of Peel's LRTP (2019).*
*Note 2: Other includes motorcycle and school bus.*

**Appendix G** includes the relevant Town of Caledon MMTMP excerpts.

### *4.1.3 Town of Caledon Active Transportation Master Plan*

The Town of Caledon recently completed the Active Transportation Master Plan (ATMP) (June 2024), which supplements the Town's MMTMP by providing more details and policies objectives

concerning sidewalks, dedicated cycling facilities and trails. Notably, the plan identifies a recommended Active Transportation Network for on-road and off-road facilities. In addition, a sidewalk policy, identifying sidewalk framework for when sidewalks should be implemented on one or both sides of roadways, has also been developed as part of this report.

**Appendix G** contains relevant Town of Caledon ATMP.

## 4.2 Planned Mobility Infrastructure

The section herein outlines the planned mobility infrastructure within the study area and horizon.

### *4.2.1 Mayfield Road*

Mayfield Road is planned to be widened to 6 lanes between Airport Road and Coleraine Drive. Auxiliary turn lanes/centre turn lanes are also proposed at major intersections. The widening will occur in stages, with the entire widening to be built out by 2031. The Region has completed the EA, and the project is in the Detailed Design & Construction phase.

As identified in the EA, a reduction in the speed limit along Mayfield Road to 60 km/h is proposed. A sidewalk and multi-use trail are also proposed on the north and south sides of Mayfield Road, respectively.

**Figure 5** highlights the proposed six-lane cross-section for Mayfield Road, east of Airport Road.

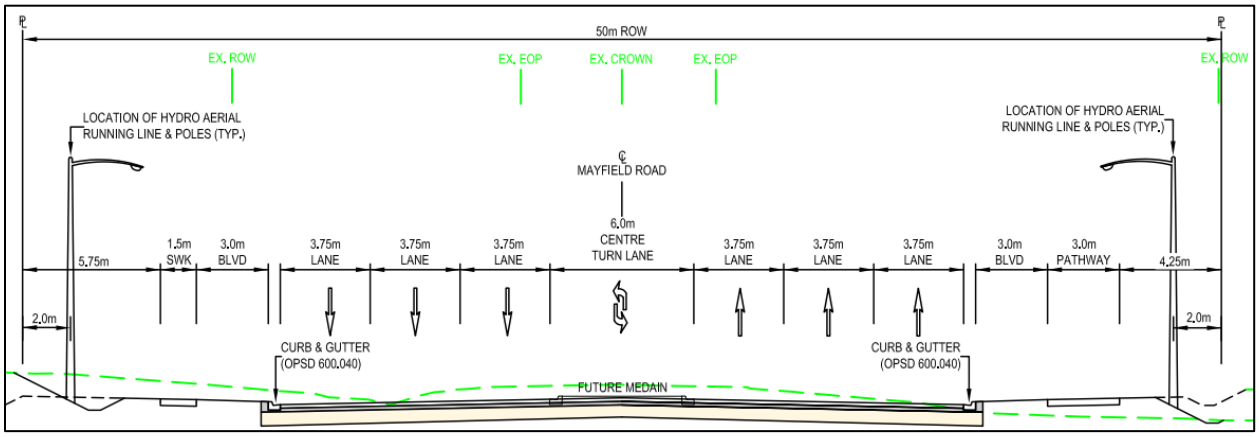



**Figure 5: Proposed Mayfield Road Six-Lane Cross-Section (Region of Peel)**

**Appendix H** includes the relevant Mayfield Road improvement excerpts.

### *4.2.2 Airport Road*

Airport Road is planned to be widened to four lanes from approximately 1000 m north of Mayfield Road to 600 m north of King Street. Auxiliary turn lanes/centre turn lanes are also proposed at major intersections. The widening is expected to be built out by 2031. The Region has completed the EA, and the project is in the Detailed Design & Construction phase.

**Figure 6** highlights the proposed four-lane cross-section for Airport Road.

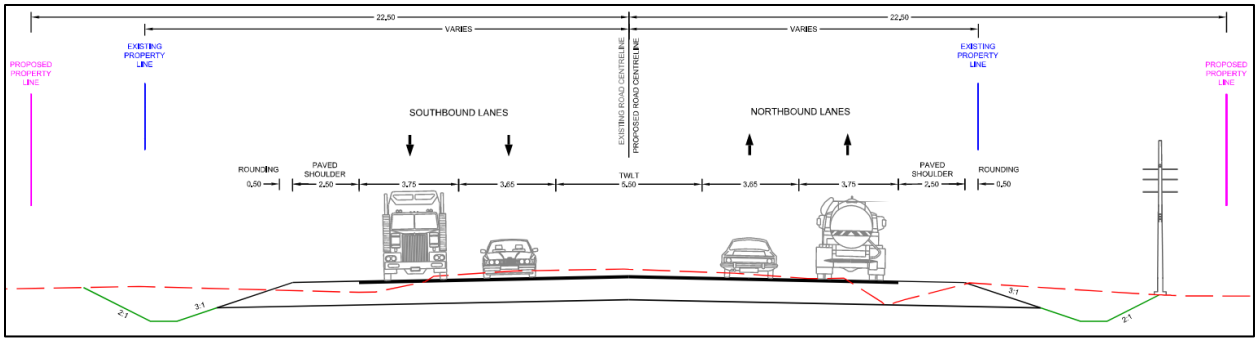



**Figure 6: Proposed Airport Road Four-Lane Cross-Section (Region of Peel)**

It is noted that the EA identifies Airport Road between Mayfield Road & Airport Road as a rural cross-section without any active transportation elements. Airport Road, between approximately 100 m north of Mayfield Road and 610 m south of King Street, is identified as a rural segment. As such, the posted speed limit of 80 km/h north of Airport Road & Perdue Court/Davis Lane is expected to remain unchanged.

As part of the capital improvements along Airport Road, the intersection of Airport Road & Old School Road/Healy Road will be converted to a two-lane roundabout.

**Figure 7** outlines the proposed Airport Road cross section approaching the proposed roundabout.

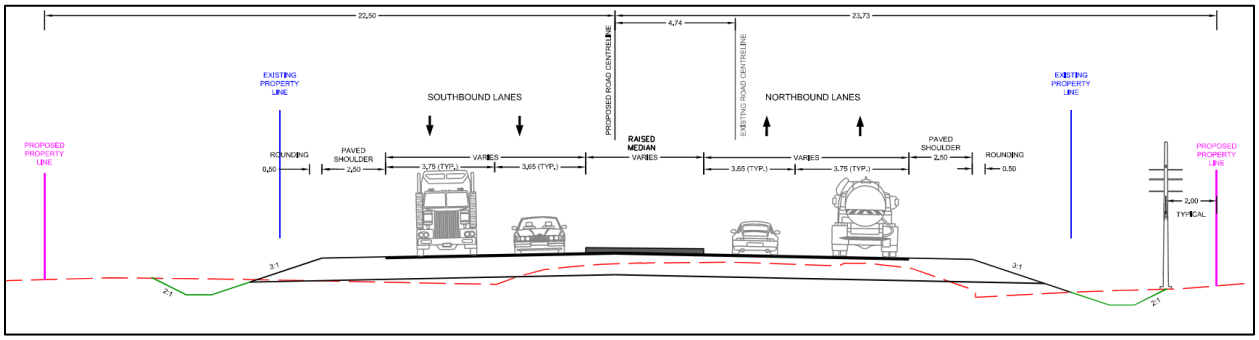



**Figure 7: Proposed Airport Road Roundabout Approach Cross-Section (Region of Peel)**

**Appendix H** includes the relevant Airport Road improvement excerpts.

### *4.2.3 Torbram Road*

As outlined in the Town of Caledon Multi-Modal Transportation Master Plan (MMTMP) (June 2024), Torbram Road is planned to be widened to four travel lanes by 2031. The road widening will span from Mayfield Road to Old School Road, and the roadway will also be urbanized.

At the time of writing, no design of Torbram Road has been prepared, and the full cross-section details will be determined at a later date. Nevertheless, the Town's MMTMP outlines a planned right-of-way of 36 m. The recommended 36 m cross-section per the MMTMP for urban four-lane arterials includes a 4.0 m multi-use path on both sides as well as auxiliary turn lanes/centre turn lanes.

**Figure 8** highlights the Town's recommended cross-section for urban four-lane arterials, as outlined in the Town's MMTMP.

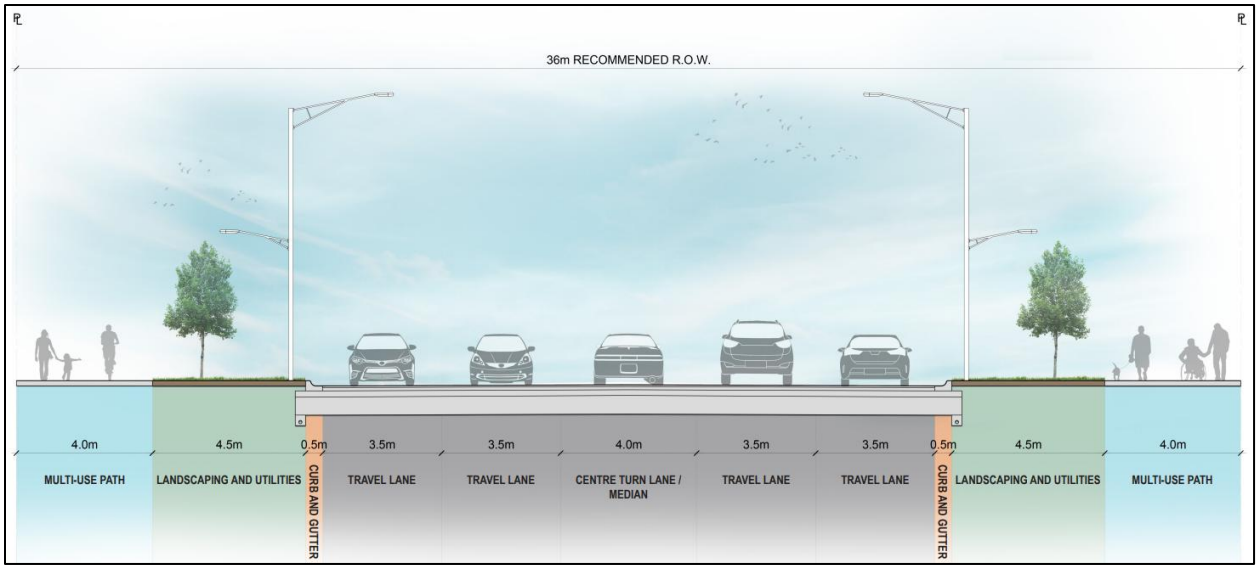



**Figure 8: Urban Four-Lane Arterial Cross-Section (Town of Caledon)**

**Appendix G** includes the relevant Town of Caledon MMTMP excerpts.

### *4.2.4 Highway 413*

Highway 413 is a planned 400-series highway under MTO's jurisdiction along a 52-kilometre corridor in the Greater Toronto Area. In addition to the highway, a transitway is also proposed which will be a separate corridor alongside the highway which will be for exclusive public transit use via bus rapid transit or light rail transit. The corridor will span from a southern terminus at the Highway 401 and Highway 401 interchange in Halton Hills to an eastern terminus at Highway 400 between of Kirby Road and King-Vaughan Road in the City of Vaughan. As a new significant corridor, Highway 413 will connect Halton Region, Peel Region, and York Region.

At the time of writing of this report, the project is in the latter parts of Stage 2 of the Individual EA with Preliminary Design ongoing of the preferred route. Field studies as well as public and Indigenous engagement are also being performed.

Based on the draft preliminary design, as of May 9, 2025, a partial cloverleaf interchange is planned at Airport Road, north of the Airport Road & Old School Road/Healey Road intersection. A transitway station is also proposed at the Airport Road interchange. It is noted that the draft preliminary design for Highway 413 has been prepared, however, no design drawings, beyond the interactive map outlined online, are publicly available at the time of writing.

**Appendix H** includes the relevant Highway 413 excerpts. **Figure 9** outlines the proposed Highway 413 corridor.

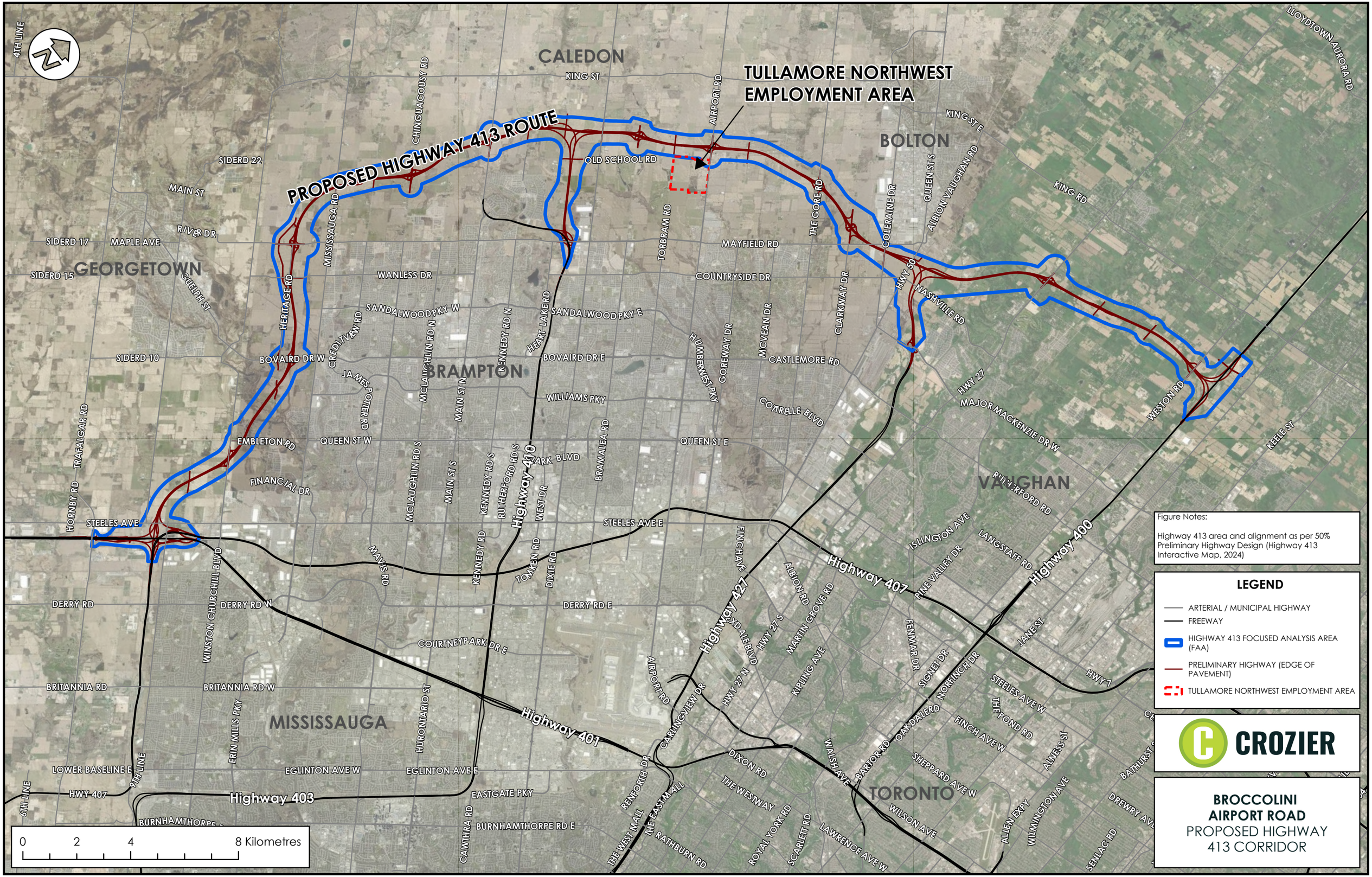



Figure Notes:

Highway 413 area and alignment as per 50% Preliminary Highway Design (Highway 413 Interactive Map, 2024)

## LEGEND

- ARTERIAL / MUNICIPAL HIGHWAY
- FREEWAY
- HIGHWAY 413 FOCUSED ANALYSIS AREA (FAA)
- PRELIMINARY HIGHWAY (EDGE OF PAVEMENT)
- TULLAMORE NORTHWEST EMPLOYMENT AREA

CROZIER

**BROCCOLINI**
**AIRPORT ROAD**
PROPOSED HIGHWAY 413 CORRIDOR

### *4.2.5 Future East-West Collector*

As outlined in **Section 4.1.2**, the Town of Caledon is currently undertaking an Addendum to the previously completed Multi-Modal Transportation Master Plan (Town of Caledon, June 2024). The preliminary MMTMP Addendum materials identify an east-west collector road (herein referred to as E-W Collector Road). This roadway is anticipated to be generally continuous throughout the Town, providing additional east-west connectivity. The roadway is expected to be an extension of Dougall Avenue with a 26 m cross-section.

A portion of the E-W Collector Road will be located within the Tullamore Northwest Employment Area Secondary Plan. Based on conversations with Town staff, it is understood that the preferred alignment of the E-W Collector Road will be located south of the Proposed Development, despite the alignment previously identified in the publicly available MMTMP Addendum materials.

**Appendix G** includes the Town of Caledon MMTMP Addendum excerpts.

### *4.2.6 Summary*

**Table 12** summarizes the planned mobility improvements within the study area and study horizon.

**Table 12: Planned Mobility Improvements**

| Roadway | Segment | Improvement | Year |
|---|---|---|---|
| Mayfield Road | Airport Road to Coleraine Drive | Widening from 2 to 6 Lanes | 2031 |
| Airport Road | Mayfield Road to King Street | Widening from 2 to 4 Lanes | 2031 |
| Airport Road & Old School Road/Healy Road | | Roundabout | 2031 |
| Torbram Road | Mayfield Road to Old School Road | Widening from 2 to 4 Lanes | 2031 |
| Highway 413 | Highway 401 to Highway 400 | New 400-Series Highway | By 2031[1] |
| E-W Collector Road | N/A[2] | New Collector Roadway | By 2041[3] |

*Note 1: Construction is scheduled to start in 2026. Assumed to be built out by the 2031 horizon year.*
*Note 2: The E-W Collector Road is not finalized, at the time of writing, with the roadway span being confirmed as part of future work by the Town.*
*Note 3: The E-W Collector Road does not currently have an anticipated buildout timeline. Nevertheless, it is assumed that the roadway will be built out by the 2041 horizon year.*

It is noted that all other mobility improvements within the study area, beyond those identified in **Table 12**, are assumed to be built out beyond the 2038 horizon and is not included in the transportation review outlined herein.

### 4.3 Secondary Plan Areas

#### *4.3.1 Tullamore Northwest Employment Area*

The Proposed Development is located within the proposed Tullamore Northwest Employment Area, which is bound by Old School Road to the north, the Tullamore Industrial Business Park to the south, Airport Road to the east and Torbram Road to the west. As part of the Secondary Plan works, potential connections to the external boundary network, including to Airport Road, were identified, however, the final location is yet determined yet. Nevertheless, it is understood that the Proposed Development will be built our prior to the remainder of the Tullamore Northwest Employment Area, including any roadways connections. As such, no collector roads that may be implemented as part of the fulsome Tullamore Northwest Employment Area are not included in the future transportation review herein.

## 5.0 Future Background Transportation Network Review

This section summarizes the future background conditions of the study road network and provides details relating to growth rates and background developments within the study area. As outlined in **Section 1.3**, the study herein considers the 2028 and 2033 horizon years for future analysis.

### 5.1 Corridor Growth Rates

Region of Peel staff provided growth rates for regional roads between 2025 and 2033. These growth rates were applied to through movements along the regional study roadways.

An industry standard annual 2.0% corridor growth rate was applied to through movements along Town collector roads, consistent with the Tullamore Industrial Business Park Transportation Impact Study Update (April 2024). As discussed with Town staff, a review of the applied growth rate along Town Roads will be included as part of the Tullamore Northwest Employment Area Secondary Plan development application.

No growth was applied along the local roadways planned as part of future developments. Based on the configuration of these roadways, any corridor traffic growth would be attributed to the planned buildout of future developments and associated trip assignments. Moreover, future traffic growth on these roadways is expected to be captured by the background development traffic assignment, as applicable.

**Table 13** summarizes the growth rates applied to the study roadways.

**Table 13: Applied Annual Growth Rates**

| Corridor | 2025 to 2031 | 2031 to 2038 |
|---|---|---|
| Mayfield Road | 1.0% | 0.5% |
| Airport Road | 1.5% | 0.5% |
| Torbram Road | 2.0% | 2.0% |
| Old School Road/Healy Road | 2.0% | 2.0% |
| Perdue Court/Davis Lane | 0.0% | 0.0% |

## 5.2 Background Developments

**Table 14** outlines the noted developments proposed near the Subject Site and are included as background developments.

**Table 14: Background Developments**

| Development | Land Use | Statistic | Report |
|---|---|---|---|
| Tullamore Industrial Business Park | Industrial Warehouse | 568,557 $m^2$ | Transportation Impact Study Update (Crozier, March 2025) |
| 6034 Mayfield Road | Industrial | 44,535 $m^2$ | Transportation Impact Study (WSP, July 2021) |
| Countryside Villages Block 48-2 | Residential | 3,391 units | Revised Transportation Impact Study (Cole Engineering, May 2017) |
| | Mixed Use & Commercial | 12,715 $m^2$ | |
| | Retail | 9.34 ha | |
| | School | 5 schools | |
| | Place of Worship | 2 places | |
| 13846 & 13940 Airport Road | Commercial | 19,741 $m^2$ | Transportation Impact Study (Trans-Plan, January 2022) |
| Mayfield-Tullamore Secondary Plan | Residential | 7,806 units | Transportation Study (BA Group, August 2024) |
| | School | 4 schools | |
| | Retail | ~40,000 $m^2$ | |

**Figure 10** illustrates the background development locations. **Appendix I** includes the relevant background development excerpts.

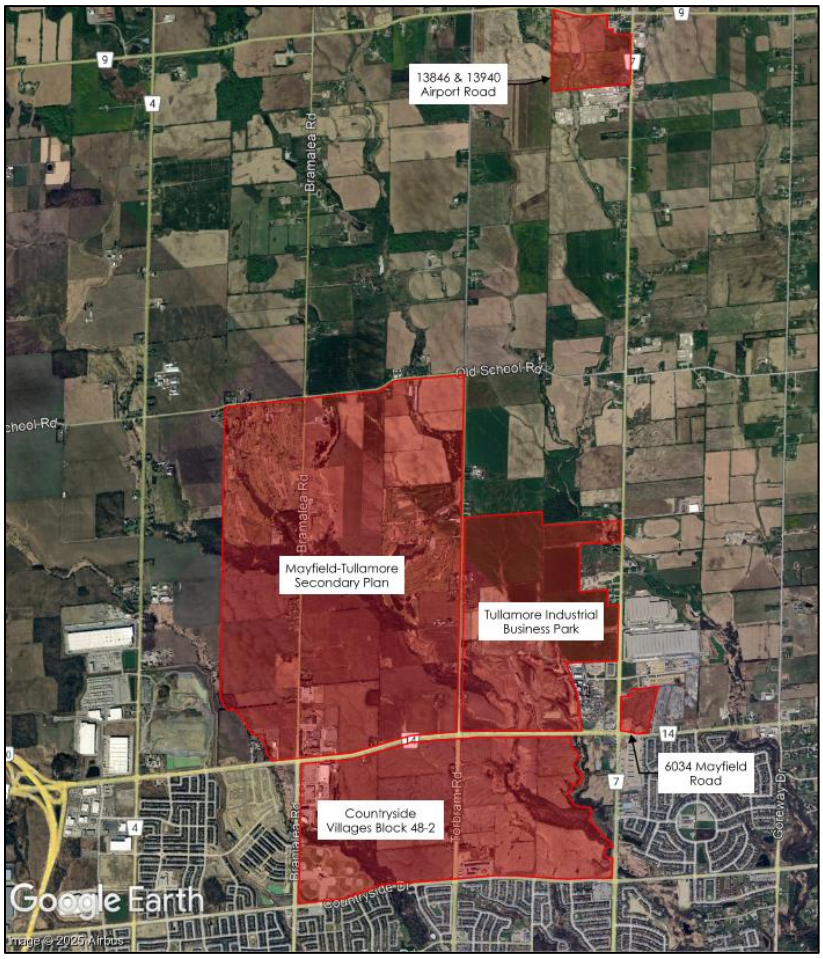



**Figure 10: Background Developments Map**

Tullamore Industrial Business Park

The Tullamore Industrial Business Park, located at 0 & 12245 Torbram Road, proposes an industrial park with 8 buildings comprised of a combined industrial warehouse gross floor area (GFA) of 568,557 m$^2$.

As outlined in the Transportation Impact Study Update (Crozier, March 2025), the background development is expected to generate 923 and 947 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

It is noted that the Tullamore Industrial Business Park also proposes an internal collector road network. An east-west collector road, Alban Road, is proposed, forming the west approach of the existing Airport Road & 12333 Airport Road Access study intersection. Alban Road will span from Airport Road to Ionic Drive, a proposed north-south collector road.

6304 Mayfield Road

The background development at 6304 Mayfield Road proposes 2 industrial buildings with a combined GFA of 44,535 $m^2$.

The Transportation Impact Study (WSP, July 2021) outlines that the background development is expected to generate 142 and 109 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

The Transportation Impact Study did not assign trips north of the proposed accesses, located south of Airport Road & Perdue Court/Davis Lane. As such, it is assumed that all trips travelling to/from the north along Airport Road will continue as through movements.

Countryside Villages Block 48-2

The Countryside Villages Block 48-2 proposes a new community with 3,391 residential units, 12,715 $m^2$ of mixed use and commercial GFA, and 5 schools as well as a 9.34 ha retail district and 2 places of worship.

The Revised Transportation Impact Study (Cole Engineering, May 2017) outlines that the proposed community is expected to generate 4,452 and 3,880 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

Since Cole Engineering's report did not assign trips north of Mayfield Road, it is assumed that all trips to/from the north will continue as through movements along Airport Road.

The Revised Transportation Impact Study identified a full buildout horizon of 2021; however, based on current conditions, beyond the special policy areas, construction has not started on the development. Given the size of Countryside Villages Block 48-2, it is assumed that only one-third (33%) of the development yield will be built out by the 2028 horizon year and full build out will be by the 2033 horizon year. Accordingly, for the 2028 horizon year, an adjustment was made to the site generated traffic volumes outlined in the Revised Transportation Impact Study.

13846 & 13940 Airport Road

The background development at 13846 & 13940 Airport Road proposes a commercial development comprised of 8 buildings with a combined commercial GFA of 19,741 $m^2$. It is noted that the exact land use for each building is not yet determined.

Based on the Transportation Impact Study (Trans-Plan, January 2022), the development is expected to generate 258 and 627 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

Trans-Plan's report did not assign trips south of Old School Road/Healy Road nor west of Airport Road. It is assumed that all trips travelling to/from the south of Airport Road & Old School Road/Healy Road will continue as through movements along Airport Road. Similarly, it is assumed that all trips travelling to/from the west of Airport Road & Old School Road/Healy Road will continue as through movements along Old School Road.

Mayfield-Tullamore Secondary Plan

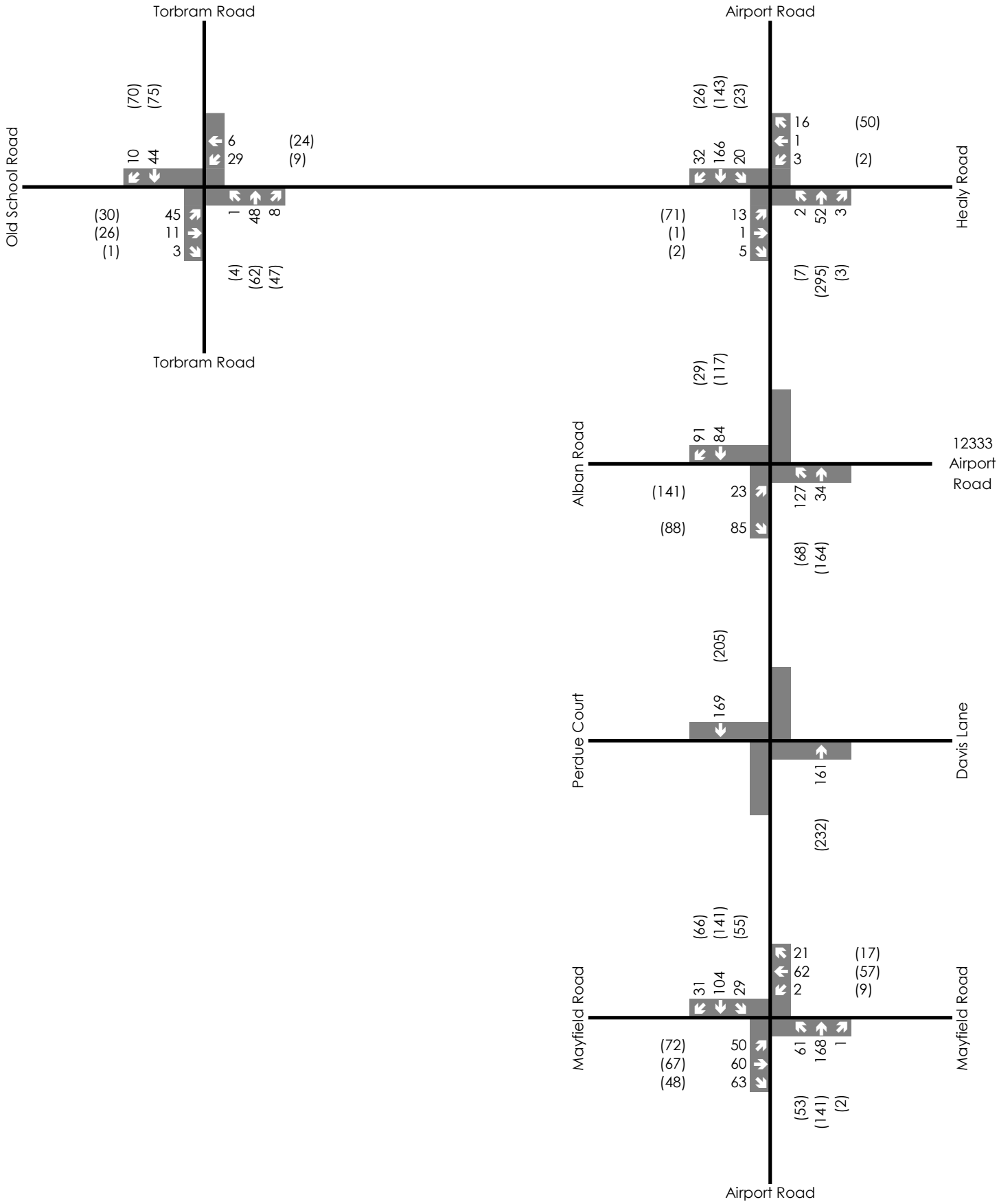
The proposed Mayfield-Tullamore Secondary Plan proposes a community consisting of 7,806 units with supporting institutional, recreational and non-residential uses.

BA Group's Transportation Study (August 2024) in support of the Secondary Plan outlines that the background development is expected to generate 4,050 and 5,025 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

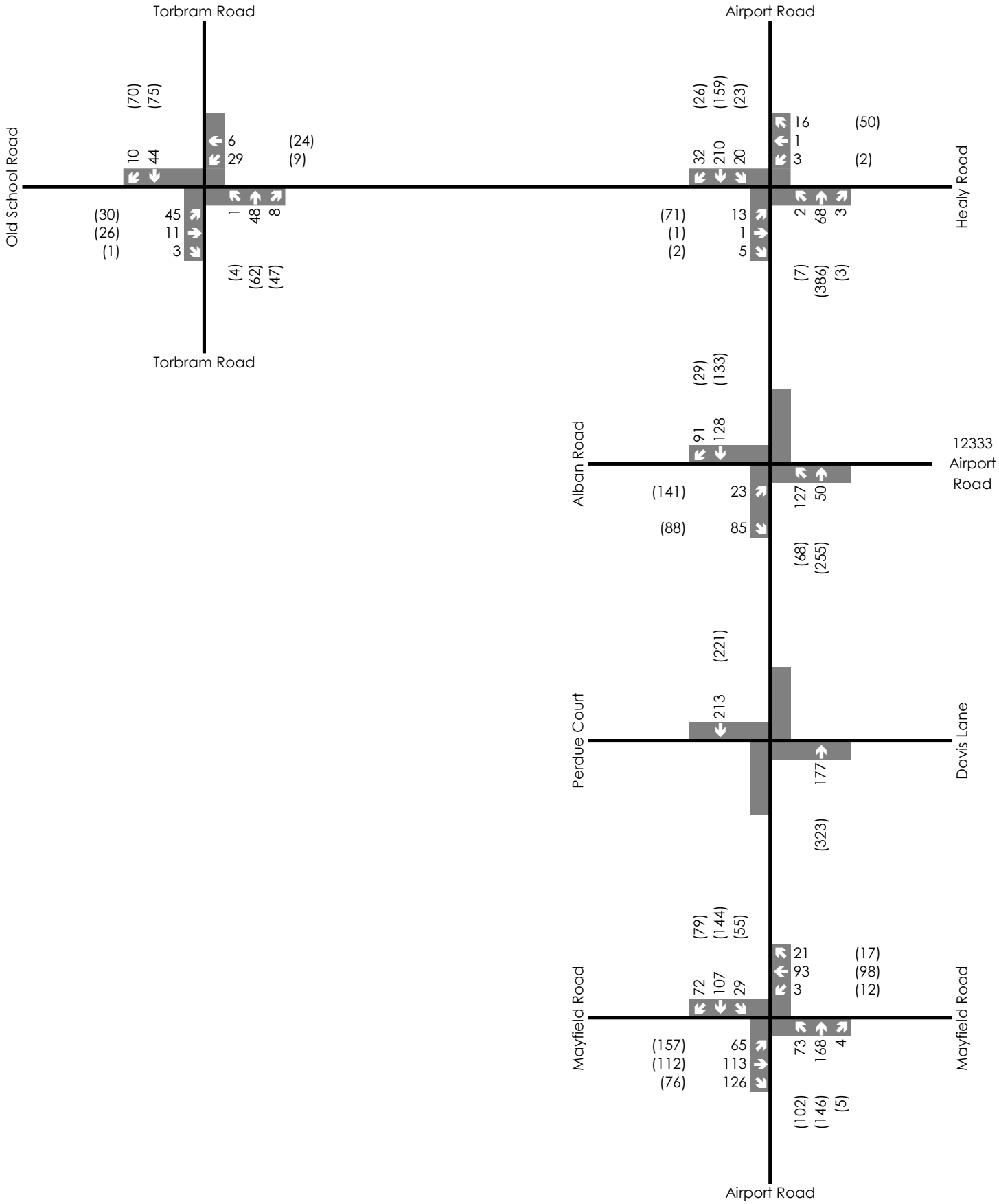
It is noted that the entirety of the site generated trips were included as part of background traffic, despite the transportation study having an ultimate 2051 horizon year. While the Mayfield-Tullamore Secondary Plan may not actually be fully built out by the initial 2028 horizon year, for conservative analysis, it is assumed the entire development is built out.

Summary

**Figure 11** and **Figure 12** illustrates the 2028 and 2033 & 2038 future background development traffic volumes, respectively.




| Legend | Broccolini Airport Road | | Figure 11 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | **2028 Background Development Traffic Volumes** | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |



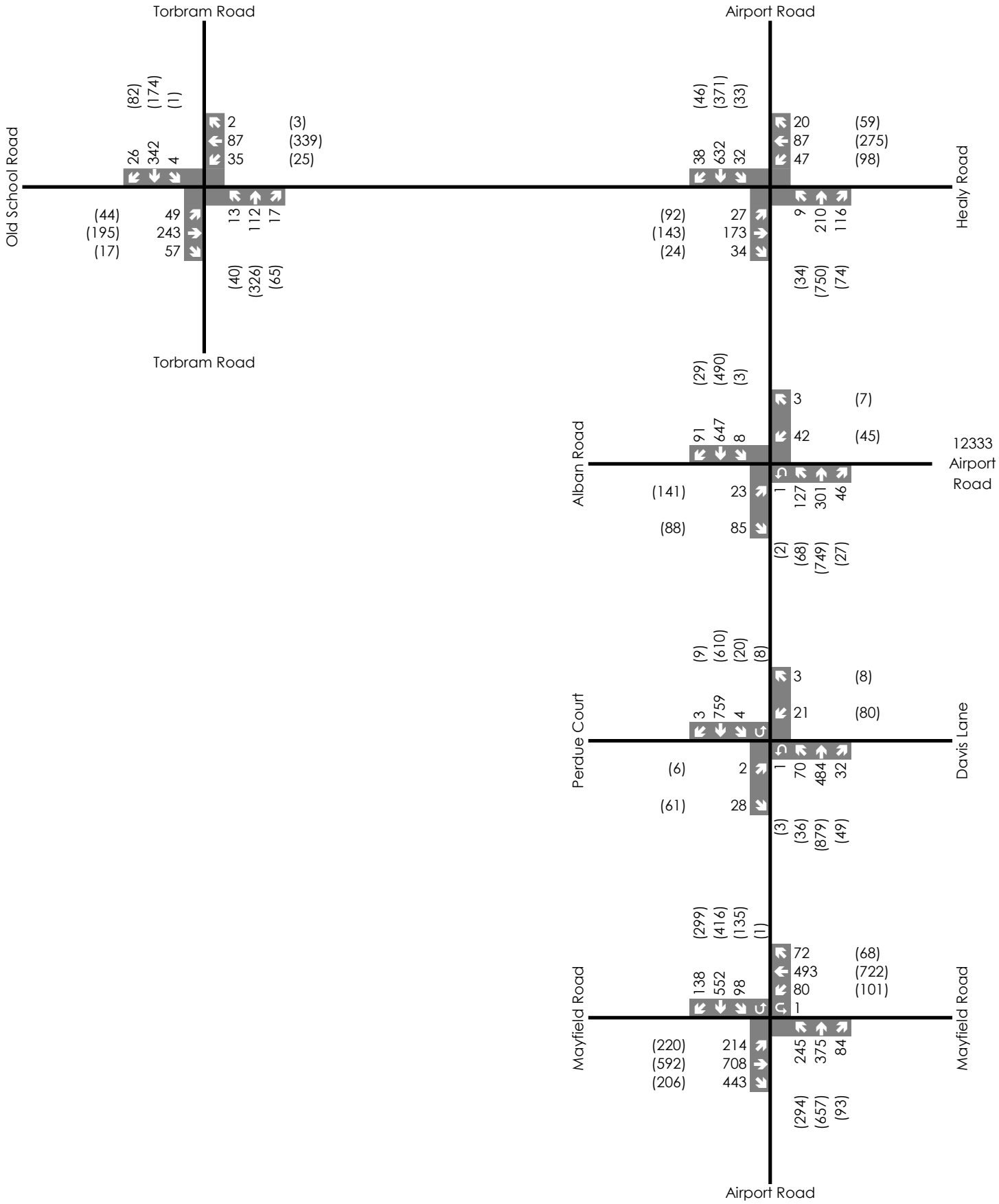

| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 12 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2033 & 2038 Background Development Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

### 5.3 Future Background Traffic Volumes

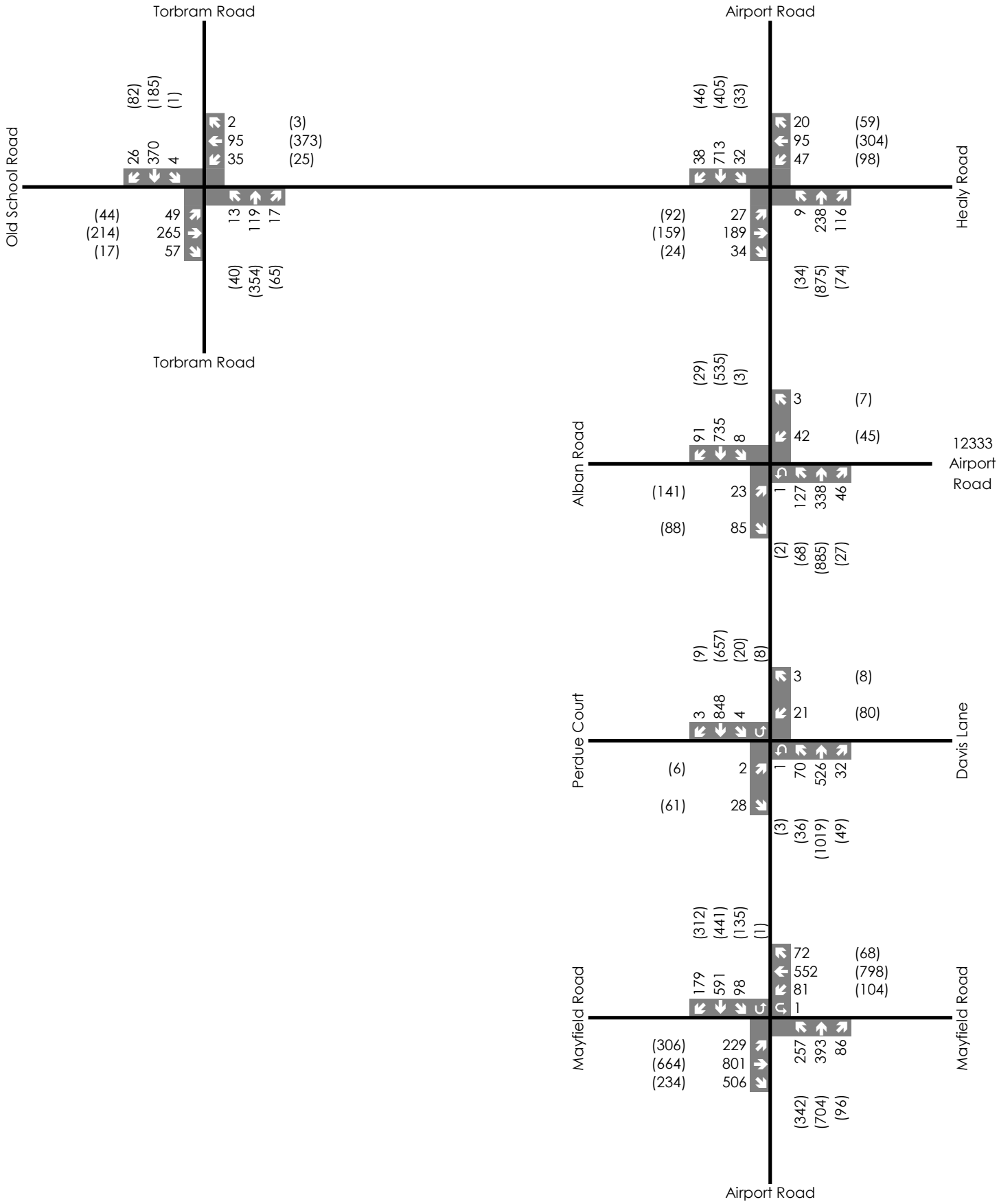
The future total traffic volumes for the horizon years consist of the following components:

- Grown Traffic Volumes
- Background Development Traffic Volumes

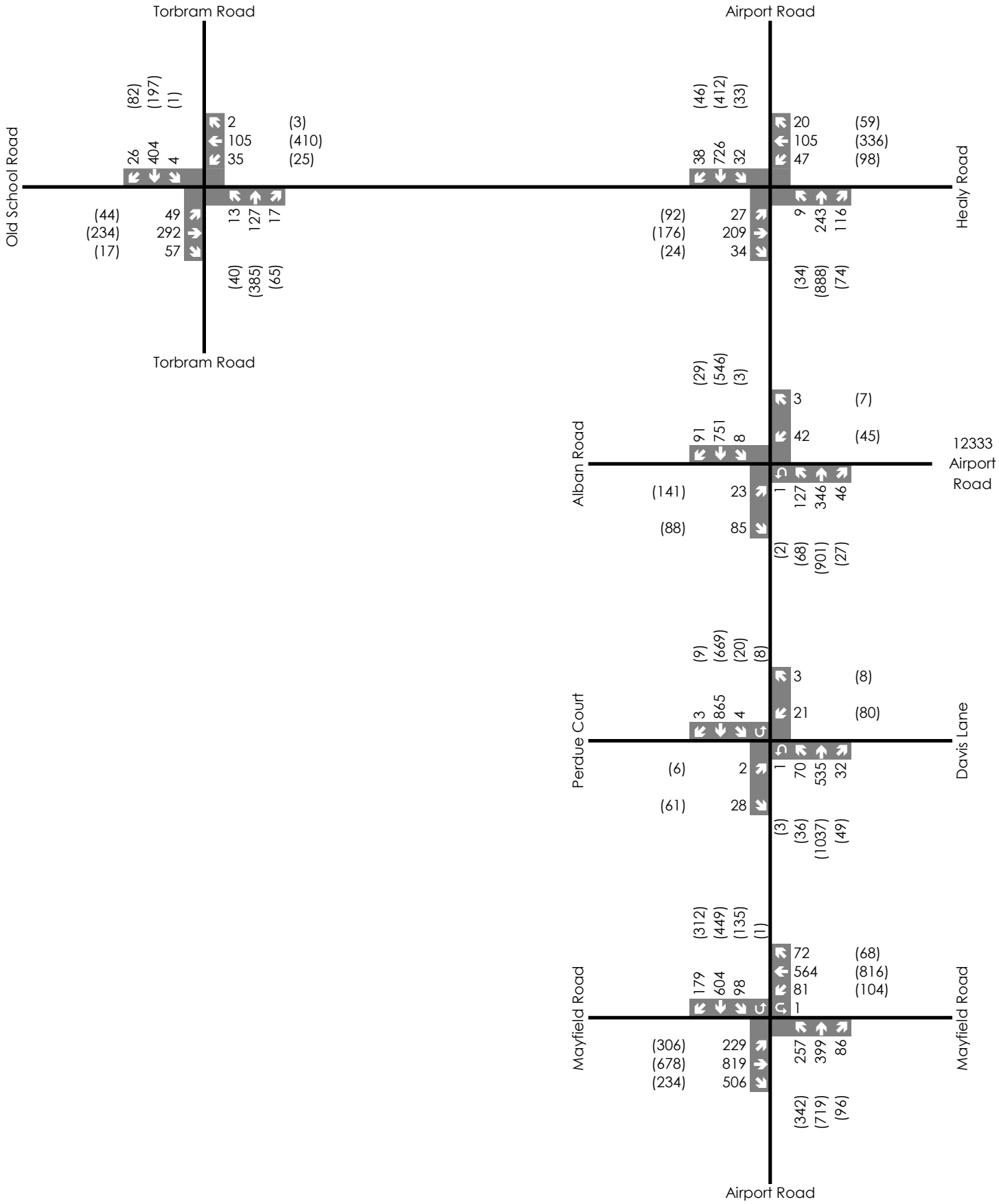
**Figure 13**, **Figure 14** and **Figure 15** illustrates the resulting 2028, 2033 and 2038 future background traffic volumes, respectively.




| Legend | Broccolini Airport Road | | Figure 13 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | **2028 Future Background Traffic Volumes** | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |




| Legend | Broccolini Airport Road | | Figure 14 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2033 Future Background Traffic Volumes | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 15 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | **2038 Future Background Traffic Volumes** | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

## 5.4 Warrants Assessment

Signal warrants were assessed for the unsignalized study intersections under 2028 and 2033 future background conditions.

The analysis was conducted based on Chapter 4 of the Ontario Traffic Manual Book 12: Traffic Signals (MTO, March 2012). As only peak hour volumes were available, Justification 7: Projected Volumes was selected as the most appropriate warrant to assess the unsignalized study intersections.

The average hour volume was determined using the following formula from Ontario Traffic Manual Book 12:

$$AHV = (amPHV + pmPHV) / 4$$

Where:

AHV = average hour volume
amPHV = a.m. peak hour volume
pmPHV = p.m. peak hour volume

For roadways with operational speeds of 60 km/h or lower, restricted flow was used. Conversely, unrestricted flow was used for roadways with operating speeds above 60 km/h.

**Table 15** summarizes the future background signal warrant analysis.

**Table 15: Future Background Signal Warrant Analysis**

| Intersection | Horizon Year | Flow Condition | Lanes on Major Road | Signal Warranted? |
|---|---|---|---|---|
| Torbram Road & Old School Road | 2028 | Free | 1 Lane | **Yes** |
| | 2033 | | 2+ Lanes | No |
| | 2038 | | | No |
| Airport Road & Perdue Court/Davis Lane | 2028 | Free | 2+ Lanes | No |
| | 2033 | | | No |
| | 2038 | | | No |

Signal control is only warranted at Torbram & Old School Road for 2028 future background conditions. However, following the widening of Torbram Road in 2033, signal control is no longer warranted.

**Appendix J** includes the warrants assessment reports.

## 5.5 Traffic Modelling and Assumptions

The section herein outlines the traffic modelling assumptions used in evaluating future background conditions.

### *5.5.1 Road Geometry*

2028 Horizon Year

The intersection proposed along Airport Road as part of the Tullamore Industrial Business Park was modelled based on the 60% detailed design drawings submitted.

An east-west collector road, Alban Road, is proposed as part of the Tullamore Industrial Business Park. Alban Road is proposed to form the fourth leg of the existing Airport Road & 12333 Airport Road Access intersection. Based on the pavement marking and signage plan for Airport Road & Alban Road/12333 Airport Road Access, the following auxiliary turn lanes were modelled:

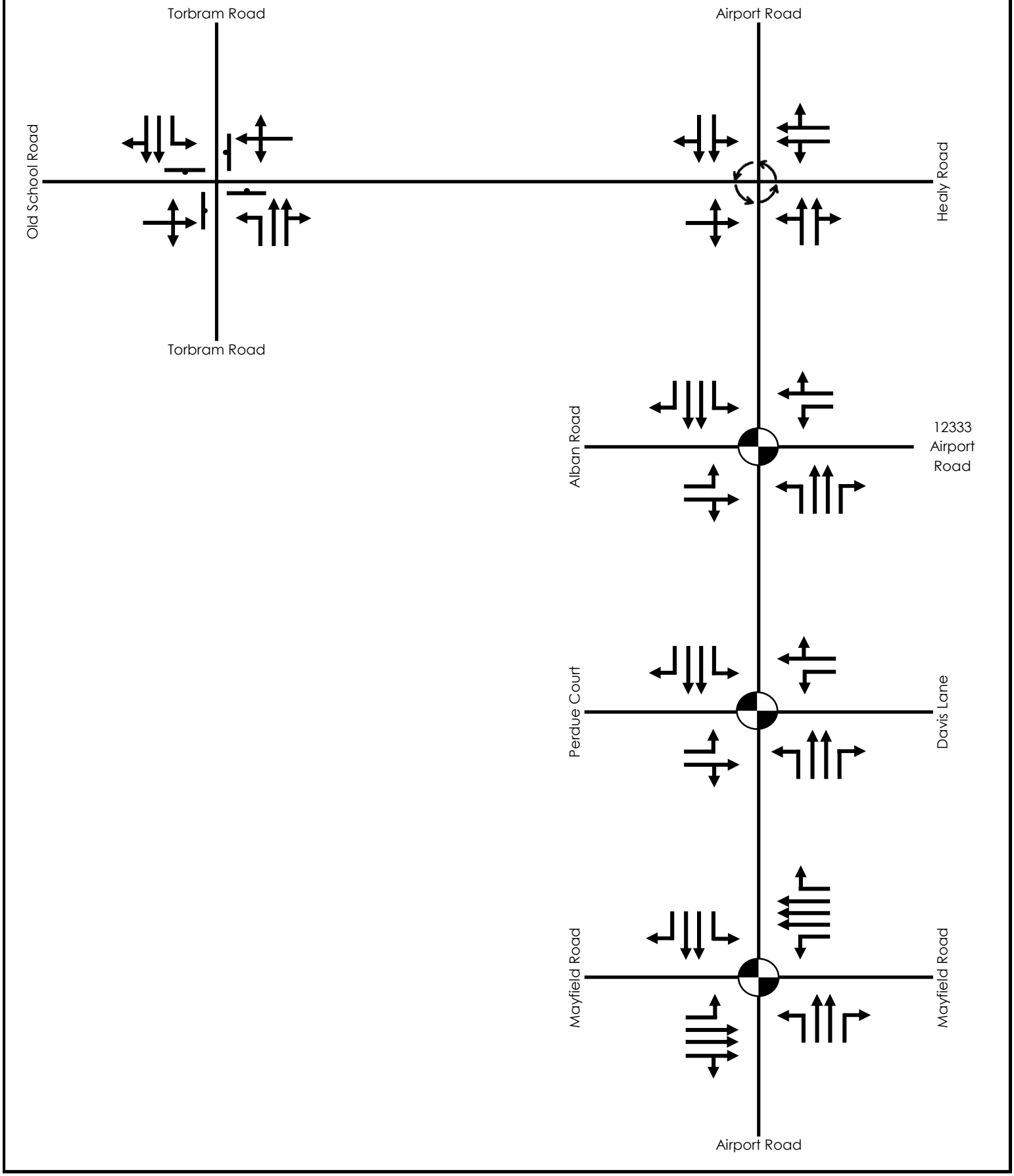
- EBL: 55 m (parallel), 20 m (taper)
- NBL: 120 m (parallel), 145 m (taper)
- SBR: 100 m (parallel), 105 m (taper)

It is noted that taper lengths greater than 100 m were modelled as 100 m, due to the taper length restrictions associated with Synchro 12.0 software.

2033 Horizon Year

The Synchro model was updated to reflect the planned widening of Airport Road within the study area by 2031. Airport Road was modelled based on the geometry outlined in the most recent detailed design drawings prepared as part of the Airport Road Environmental Assessment. As identified in the Airport Road improvements, Airport Road & Old School Road/Healy Road was modelled as a roundabout.

**Figure 16** outlines the 2033 future background study road network.




| Legend | Broccolini Airport Road | | Figure 16 |
|---|---|---|---|
| Signal Control<br>Stop Control<br>Roundbout Control | 2033 Future Background Study Road Network | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

### *5.5.2 Modelling Parameters*

Consistent with existing conditions, PHFs of 1.00 were kept unchanged for all Town and Region roads, per the Region's guidelines.

The heavy vehicle percentages were updated in the model for each horizon year to reflect the increased heavy vehicle traffic expected as part of the industrial background developments.

2028 Horizon Year

Despite not being warranted, signal control was modelled at Airport Road & Perdue Court/Davis Lane to support future background traffic operations. Consistent with the signal timing plan at Airport Road & Alban Road/12333 Airport Road Access, the proposed signal at Airport Road & Perdue Court/Davis Lane was modelled as actuated-coordinated with a 120 s cycle length during the weekday a.m. and p.m. peak hours. This is consistent with the assumptions outlined in the Tullamore Northwest Employment Area Secondary Plan Transportation Study (Crozier, May 2025).

As signal control is only warranted under 2028 future background conditions at Torbram Road & Old School Road, for conservative analysis, the intersection of Torbram Road & Old School Road was modelled as all-way stop controlled, consistent with existing conditions.

The signal timing plans at the signalized study intersections were optimized (Opt. #1), given the planned transportation network improvements and background developments.

2033 Horizon Year

Given the planned road widening along Airport Road, the signal timing plan splits for all signalized study intersections were optimized (Opt. #2).

2038 Horizon Year

Despite not be warranted, the intersection of Torbram Road & Old School Road was modelled as a signalized intersection for the 2038 horizon year to support future background traffic volumes. The intersection was modelled as semi-actuated uncoordinated with a 100 s cycle length, consistent with the Mayfield-Tullamore Secondary Plan Transportation Study (BA Group, August 2024).

### *5.5.3 Roundabout Analysis*

2033 Horizon Year

As outlined in the Airport Road Environmental Assessment, the signalized intersection of Airport Road & Old School Road/Healy Road is also planned to be converted to a roundabout by 2031. Roundabout analysis was completed for Airport Road & Old School Road/Healy Road intersections using ARACDY Junctions 8 software.

The roundabout geometry was modelled based on the 60% design drawings of Airport Road. It is noted that the 60% design drawings outline 1 eastbound travel lane along Old School Road/Healy Road, with a northbound right-turn by-pass. Since the preparation of these design drawings, the Town has identified that Old School Road and Healy Road will be widened to four lanes by 2041. Given the planned improvements, 2 eastbound travel lanes are assumed along

Old School Road/Healy Road, consistent with the future 4-lane cross-section for Old School Road and Healy Road.

**Table 16** outlines the roundabout geometry used in the modelling.

**Table 16: Airport Road & Old School Road/Healy Road Roundabout Geometry**

| Parameter | Airport Road | Airport Road | Healy Road | Old School Road |
|---|---|---|---|---|
| Approach | North | South | East | West |
| Approach Road Half-Width | 7.4 m | 7.4 m | 7.4 m | 7.4 m |
| Entry Width | 10.0 m | 9.8 m | 10.0 m | 10.0 m |
| Effective Flare Length | 30 m | 30 m | 30 m | 30 m |
| Entry Radius | 28 m | 32 m | 28 m | 38 m |
| Inscribed Circle Diameter | 55 m | 55 m | 55 m | 55 m |
| Conflict (Entry) Angle | 12 degrees | 8 degrees | 26 degrees | 11 degrees |

In addition, a y-intercept value of 90% was used, consistent with the analysis outlined in the Airport Road Environmental Assessment, Tullamore Industrial Business Park Transportation Impact Study Update (Crozier, March 2023), and the Tullamore Northwest Employment Area Secondary Plan Transportation Study (Crozier, May 2025). This accounts for motorist unfamiliarity with roundabouts in the Greater Toronto Area compared to in the United Kingdom.

**Appendix H** outlines the relevant Airport Road Environmental Assessment excerpts.

### 5.6 Intersection Operations

The section herein reviews the intersection operations under 2028 and 2033 future background conditions. This assessment includes key metrics including level of service (LOS), control delay and volume-to-capacity (v/c) ratio.

**Appendix E** contains the detailed capacity analysis worksheets.

#### *5.6.1 2028 Horizon Year*

Signalized Intersections

**Table 17** details the 2028 future background traffic operations for the signalized study intersections.

**Table 17: 2028 Future Background Traffic Operations – Signalized Intersections**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Mayfield Road & Airport Road** | **Signal Opt. #1** | **Overall** | **C** | **D** | **31** | **36** | **0.84** | **0.83** |
| | | EBL | B | C | 19 | 27 | 0.51 | 0.67 |
| | | EBT | C | C | 26 | 27 | 0.46 | 0.41 |
| | | EBR | A | A | 8 | 4 | 0.52 | 0.26 |
| | | WBL | B | B | 16 | 18 | 0.27 | 0.27 |
| | | WBTR | C | D | 29 | 35 | 0.46 | 0.59 |
| | | NBL | D | D | 51 | 49 | 0.84 | 0.81 |
| | | NBT | D | E | 38 | 58 | 0.46 | 0.83 |
| | | NBR | A | A | 3 | 7 | 0.22 | 0.26 |
| | | SBL | D | D | 38 | 41 | 0.34 | 0.64 |
| | | SBT | E | D | 60 | 53 | 0.78 | 0.63 |
| | | SBR | C | A | 20 | 9 | 0.36 | 0.57 |
| **Airport Road & Old School Road/Healy Road** | **Signal Opt. #1** | **Overall** | **C** | **E** | **33** | **77** | **0.79** | **1.13** |
| | | EBLTR | E | F | 64 | 94 | 0.79 | 0.94 |
| | | WBLTR | E | F | 59 | 133 | 0.66 | 1.13 |
| | | NBLT | B | E | 17 | 55 | 0.27 | 0.96 |
| | | NBR | A | A | 11 | 3 | 0.10 | 0.06 |
| | | SBLT | C | E | 29 | 68 | 0.76 | 0.96 |
| | | SBR | A | A | 1 | 2 | 0.03 | 0.04 |
| **Airport Road & Alban Road/12333 Airport Road Access** | **Signal Opt. #1** | **Overall** | **A** | **B** | **6** | **18** | **0.44** | **0.73** |
| | | EBL | D | E | 51 | 67 | 0.18 | 0.73 |
| | | EBTR | A | A | 1 | 1 | 0.22 | 0.19 |
| | | WBL | E | D | 64 | 44 | 0.44 | 0.27 |
| | | WBTR | A | A | 0 | 0 | 0.00 | 0.02 |
| | | NBL | A | B | 6 | 17 | 0.28 | 0.15 |
| | | NBT | A | B | 3 | 17 | 0.12 | 0.31 |
| | | NBR | A | A | 1 | 8 | 0.05 | 0.04 |
| | | SBL | A | A | 4 | 8 | 0.01 | 0.01 |
| | | SBT | A | A | 4 | 7 | 0.24 | 0.21 |
| | | SBR | A | A | 1 | 1 | 0.09 | 0.03 |

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #1** | **Overall** | **A** | **A** | **3** | **8** | **0.28** | **0.54** |
| | | EBL | D | D | 48 | 45 | 0.03 | 0.04 |
| | | EBTR | A | A | 1 | 1 | 0.09 | 0.15 |
| | | WBL | D | E | 55 | 63 | 0.23 | 0.54 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.03 |
| | | NBL | A | A | 2 | 5 | 0.15 | 0.10 |
| | | NBT | A | A | 1 | 5 | 0.19 | 0.33 |
| | | NBR | A | A | 0 | 2 | 0.03 | 0.07 |
| | | SBL | A | A | 3 | 8 | 0.01 | 0.10 |
| | | SBT | A | A | 2 | 6 | 0.28 | 0.24 |
| | | SBR | A | A | 0 | 1 | 0.00 | 0.01 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The intersection of Airport Road & Old School Road/Healy Road is expected to operate at a LOS "E" or better during the weekday peak hours with a maximum control delay and v/c ratio of 77 s and 1.13, respectively. The split signal timing plan, where the eastbound and westbound traffic operate one after another, contributes to the high control delays and v/c ratios; however, given the offset east and west approaches, this split phasing is required to increase safety at the intersection. The intersection will be converted to a roundabout as part of the Airport Road widening, scheduled by 2031, which will address the anticipated operational concerns as well as mitigate the impact of the offset approaches. Nevertheless, it is recommended that the Region monitors the operations to determine if additional improvements are warranted in the interim.

The remaining signalized study intersections are expected to operate at a LOS "D" or better, with low to moderate control delays and v/c ratios, under 2028 future background conditions. These metrics indicate that the study road network is operating efficiently with acceptable delays and reserve capacity to accommodate future increases in traffic volumes.

Unsignalized Intersections

**Table 18** details the 2028 future background traffic operations for the unsignalized study intersections.

**Table 18: 2028 Future Background Traffic Operations – Unsignalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[2] | | v/c ratio[3] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Torbram Road & Old School Road | **Overall** | **C** | **D** | **15** | **34** | **0.62** | **0.88** |
| | EBLTR | C | C | 15 | 22 | 0.55 | 0.58 |
| | WBLTR | B | D | 11 | 33 | 0.22 | 0.78 |
| | NBLTR | B | E | 11 | 44 | 0.25 | 0.88 |
| | SBLTR | C | D | 18 | 30 | 0.62 | 0.67 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*

*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The unsignalized study intersection is expected to operate at a LOS "D" or better with low to moderate control delays and v/c ratios. Therefore, the intersection is expected to operate efficiently, with reserve capacity to accommodate future traffic growth.

### *5.6.2 2033 Horizon Year*

Signalized Intersections

**Table 19** details the 2033 future background traffic operations for the signalized study intersections.

**Table 19: 2033 Future Background Traffic Operations – Signalized Intersections**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Mayfield Road & Airport Road | Signal Opt. #2 | **Overall** | **C** | **D** | **33** | **37** | **0.88** | **0.92** |
| | | EBL | C | C | 20 | 33 | 0.52 | 0.77 |
| | | EBTR | C | C | 25 | 26 | 0.62 | 0.44 |
| | | WBL | C | C | 24 | 20 | 0.47 | 0.37 |
| | | WBT | C | D | 27 | 35 | 0.30 | 0.45 |
| | | WBR | A | A | 2 | 1 | 0.14 | 0.15 |
| | | NBL | E | E | 56 | 63 | 0.88 | 0.92 |
| | | NBT | D | E | 37 | 56 | 0.46 | 0.83 |
| | | NBR | A | A | 7 | 7 | 0.23 | 0.26 |
| | | SBL | D | D | 38 | 42 | 0.34 | 0.65 |
| | | SBT | E | D | 61 | 54 | 0.79 | 0.66 |
| | | SBR | C | A | 21 | 9 | 0.41 | 0.58 |
| Airport Road & Alban Road/12333 Airport Road Access | Signal Opt. #2 | **Overall** | **A** | **B** | **6** | **12** | **0.44** | **0.68** |
| | | EBL | D | E | 51 | 64 | 0.18 | 0.68 |
| | | EBTR | A | A | 2 | 1 | 0.25 | 0.20 |
| | | WBL | E | D | 64 | 49 | 0.44 | 0.32 |
| | | WBTR | A | A | 0 | 0 | 0.00 | 0.02 |
| | | NBL | A | A | 6 | 8 | 0.31 | 0.19 |
| | | NBT | A | A | 3 | 7 | 0.13 | 0.35 |
| | | NBR | A | A | 1 | 1 | 0.05 | 0.04 |
| | | SBL | A | A | 4 | 6 | 0.01 | 0.01 |
| | | SBT | A | A | 4 | 6 | 0.27 | 0.23 |
| | | SBR | A | A | 1 | 1 | 0.09 | 0.05 |
| Airport Road & Perdue Court/Davis Lane | Signal Opt. #2 | **Overall** | **A** | **A** | **3** | **6** | **0.31** | **0.54** |
| | | EBL | D | D | 48 | 45 | 0.03 | 0.04 |
| | | EBTR | A | A | 1 | 1 | 0.10 | 0.14 |
| | | WBL | D | E | 55 | 63 | 0.23 | 0.54 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.03 |
| | | NBL | A | A | 2 | 5 | 0.16 | 0.10 |
| | | NBT | A | A | 1 | 5 | 0.20 | 0.39 |
| | | NBR | A | A | 0 | 2 | 0.03 | 0.07 |
| | | SBL | A | A | 3 | 3 | 0.01 | 0.12 |
| | | SBT | A | A | 2 | 2 | 0.31 | 0.25 |
| | | SBR | A | A | 0 | 0 | 0.00 | 0.01 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The signalized study intersections are operating efficiently at a LOS "D" or better during the weekday a.m. and p.m. peak hours. These intersections are expected to have low to moderate control delays and v/c ratios, with no notable operational concerns anticipated.

Unsignalized Intersections

**Table 20** details the 2033 future background traffic operations for the unsignalized study intersections.

**Table 20: 2033 Future Background Traffic Operations – Unsignalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[2] | | v/c ratio[3] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Torbram Road & Old School Road | **Overall** | **B** | **C** | **15** | **25** | **0.65** | **0.84** |
| | EBLTR | C | C | 20 | 23 | 0.65 | 0.61 |
| | WBLTR | B | E | 12 | 41 | 0.25 | 0.84 |
| | NBL | B | B | 11 | 12 | 0.03 | 0.09 |
| | NBT | B | C | 11 | 19 | 0.15 | 0.52 |
| | NBR | B | C | 10 | 15 | 0.11 | 0.39 |
| | SBL | B | B | 10 | 13 | 0.01 | 0.00 |
| | SBT | B | B | 14 | 15 | 0.45 | 0.29 |
| | SBR | B | B | 11 | 14 | 0.26 | 0.32 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*

*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

Under 2033 future background conditions, the unsignalized Torbram Road & Old School Road intersection is expected to operate at a LOS "C" or better with low to moderate control delays and v/c ratios. These metrics indicate that the intersection is operating with reserve capacity to accommodate future traffic growth.

Roundabout Intersections

**Table 21** details the 2033 future background traffic operations for the roundabout study intersections.

**Table 21: 2033 Future Background Traffic Operations – Roundabout Intersections**

| Intersection | Approach | LOS[1] | | Delay (s) | | v/c ratio[1] | | 95th %ile Queue[2] | |
|---|---|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Airport Road & Old School Road/Healy Road | **Overall** | **A** | **A** | **2** | **2** | **0.33** | **0.40** | **-** | **-** |
| | EB | A | A | 2 | 2 | 0.13 | 0.13 | ~1 | ~1 |
| | WB | A | A | 2 | 3 | 0.07 | 0.40 | ~1 | ~1 |
| | NB | A | A | 2 | 3 | 0.16 | 0.26 | ~1 | ~1 |
| | SB | A | A | 2 | 2 | 0.33 | 0.24 | ~1 | ~1 |

*Note 1: Ratio of flow to capacity (RFC). The overall RFC for roundabout intersections is the maximum approach RFC. All RFCs greater than 0.85 are outlined in red.*

*Note 2: 95th percentile queues are recorded in passenger car equivalents. Rounded to the nearest vehicle.*

Under 2033 future background conditions, the Airport Road & Old School Road/Healy Road intersection is expected to operate at a LOS "A". The roundabout is anticipated to operate with low control delays and moderate v/c ratios, indicating the intersection is efficiently with reserve capacity for future growth.

### *5.6.3 2038 Horizon Year*

Signalized Intersections

**Table 22** details the 2038 future background traffic operations for the signalized study intersections.

**Table 22: 2038 Future Background Traffic Operations – Signalized Intersections**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Mayfield Road & Airport Road** | **Signal Opt. #2** | **Overall** | **C** | **D** | **34** | **38** | **0.89** | **0.93** |
| | | EBL | C | C | 21 | 34 | 0.53 | 0.79 |
| | | EBTR | C | C | 26 | 26 | 0.63 | 0.45 |
| | | WBL | C | C | 25 | 21 | 0.48 | 0.37 |
| | | WBT | C | D | 27 | 36 | 0.31 | 0.46 |
| | | WBR | A | A | 2 | 1 | 0.14 | 0.15 |
| | | NBL | E | E | 57 | 63 | 0.89 | 0.93 |
| | | NBT | D | E | 36 | 56 | 0.46 | 0.84 |
| | | NBR | A | A | 7 | 7 | 0.23 | 0.25 |
| | | SBL | D | D | 38 | 42 | 0.33 | 0.66 |
| | | SBT | E | D | 62 | 53 | 0.80 | 0.66 |
| | | SBR | C | A | 21 | 9 | 0.40 | 0.58 |
| **Torbram Road & Old School Road** | **Signal Opt. #2** | **Overall** | **B** | **B** | **19** | **19** | **0.77** | **0.77** |
| | | EBLTR | C | C | 31 | 24 | 0.77 | 0.60 |
| | | WBLTR | B | C | 19 | 30 | 0.31 | 0.77 |
| | | NBL | B | B | 11 | 12 | 0.03 | 0.08 |
| | | NBTR | A | B | 9 | 11 | 0.08 | 0.26 |
| | | SBL | B | B | 11 | 12 | 0.01 | 0.00 |
| | | SBTR | B | A | 11 | 9 | 0.24 | 0.17 |
| **Airport Road & Alban Road/12333 Airport Road Access** | **Signal Opt. #2** | **Overall** | **A** | **B** | **6** | **12** | **0.44** | **0.68** |
| | | EBL | D | E | 51 | 64 | 0.18 | 0.68 |
| | | EBTR | A | A | 2 | 1 | 0.25 | 0.20 |
| | | WBL | E | D | 64 | 49 | 0.44 | 0.32 |
| | | WBTR | A | A | 0 | 0 | 0.00 | 0.02 |
| | | NBL | A | A | 6 | 8 | 0.31 | 0.19 |
| | | NBT | A | A | 3 | 7 | 0.14 | 0.36 |
| | | NBR | A | A | 1 | 1 | 0.05 | 0.04 |
| | | SBL | A | A | 4 | 6 | 0.01 | 0.01 |
| | | SBT | A | A | 4 | 6 | 0.28 | 0.23 |
| | | SBR | A | A | 1 | 1 | 0.09 | 0.05 |

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #2** | **Overall** | **A** | **A** | **3** | **6** | **0.32** | **0.54** |
| | | EBL | D | D | 48 | 45 | 0.03 | 0.04 |
| | | EBTR | A | A | 1 | 1 | 0.10 | 0.14 |
| | | WBL | D | E | 55 | 63 | 0.23 | 0.54 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.03 |
| | | NBL | A | A | 2 | 5 | 0.17 | 0.10 |
| | | NBT | A | A | 1 | 5 | 0.21 | 0.39 |
| | | NBR | A | A | 0 | 2 | 0.03 | 0.07 |
| | | SBL | A | A | 3 | 3 | 0.01 | 0.12 |
| | | SBT | A | A | 2 | 2 | 0.32 | 0.26 |
| | | SBR | A | A | 0 | 0 | 0.00 | 0.01 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*
*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

Under 2038 future background conditions, the signalized study intersections is expected to operate at a LOS "D" or better with low to moderate control delays and v/c ratios. These metrics indicate that the intersection is operating acceptably with reserve capacity to accommodate future traffic growth.

Roundabout Intersections

**Table 23** details the 2038 future background traffic operations for the roundabout study intersections.

**Table 23: 2038 Future Background Traffic Operations – Roundabout Intersections**

| Intersection | Approach | LOS[1] | | Delay (s) | | v/c ratio[1] | | 95th %ile Queue[2] | |
|---|---|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Old School Road/Healy Road** | **Overall** | **A** | **A** | **2** | **3** | **0.34** | **0.42** | **-** | **-** |
| | EB | A | A | 2 | 2 | 0.14 | 0.13 | ~1 | ~1 |
| | WB | A | A | 2 | 3 | 0.08 | 0.28 | ~1 | ~1 |
| | NB | A | A | 2 | 3 | 0.17 | 0.42 | ~1 | ~1 |
| | SB | A | A | 2 | 2 | 0.34 | 0.25 | ~1 | ~1 |

*Note 1: Ratio of flow to capacity (RFC). The overall RFC for roundabout intersections is the maximum approach RFC. All RFCs greater than 0.85 are outlined in red.*
*Note 2: 95th percentile queues are recorded in passenger car equivalents. Rounded to the nearest vehicle.*

The roundabout at Airport Road & Old School Road/Healy Road is expected to operate at a LOS "A" with low control delays and v/c ratios under 2038 future background conditions. Accordingly, the intersection is anticipated to operate efficiently with reserve capacity to accommodate future traffic growth.

## 5.7 Queueing Assessment

Consistent with existing conditions, SimTraffic was used to assess the queues within the study road network. The 95th percentile queues were compared against the available storage length to determine if any queues are expected to extend beyond the auxiliary turn lanes. **Appendix F** contains the detailed queueing analysis worksheets.

### *5.7.1 2028 Horizon Year*

**Table 24** outlines the results of the 2028 future background queueing assessment.

**Table 24: 2028 Future Background Queueing Assessment**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| Mayfield Road & Airport Road | Signal Opt. #1 | EBL | 65 | 85 | 200 |
| | | WBL | 50 | 70 | 50 |
| | | WBTR | 75 | 95 | 70 |
| | | NBL | 120 | 145 | 95 |
| | | NBR | 25 | 45 | 60 |
| | | SBL | 45 | 65 | 100 |
| | | SBR | 45 | 75 | 105 |
| Airport Road & Old School Road/Healy Road | Signal Opt. #1 | NBR | 30 | 25 | 15 |
| | | SBR | 50 | 120 | 50 |
| Airport Road & Alban Road/12333 Airport Road Access | Signal Opt. #2 | EBL | 25 | 75 | 55[2] |
| | | WBTR | 5 | 10 | 100 |
| | | NBL | 35 | 30 | 120 |
| | | NBR | 10 | 15 | 145 |
| | | SBL | 10 | 5 | 80[2] |
| | | SBR | 20 | 10 | 100 |
| Airport Road & Perdue Court/Davis Lane | Signal Opt. #2 | WBL | 30 | 40 | 30 |
| | | NBL | 35 | 35 | 70 |
| | | NBR | 10 | 15 | 65 |
| | | SBL | 10 | 25 | 70 |
| | | SBR | - | 5 | 60 |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Two-way left-turn lane.*

The queues for some movements are expected to extend beyond the storage length. However, these queues for the following movements and intersections can be accommodated within the provided taper length or two-way left-turn lane, accordingly:

- Mayfield Road & Airport Road (WBL)
- Airport Road & Old School Road/Healy Road (NBR)
- Airport Road & Alban Road/12333 Airport Road Access (EBL)

The westbound through/right-turn lane at Mayfield Road & Airport Road is expected to extend beyond the provided storage length and taper. Nevertheless, the queue is not expected to

significantly impact the study road network and does not extend to the upstream intersection. It is recommended the Region monitors the queues to determine if interim improvements are warranted, prior to the Mayfield Road widening.

The northbound left-turn queues at Mayfield Road & Airport Road are expected to exceed the effective storage length, and it is recommended that the storage length should be extended to 145 m accommodate the expected queues. This storage length extension can be accommodated within the study road network by adjusting the concrete median and are not expected to impact downstream intersections.

The southbound right-turn lane at Airport Road & Old School Road/Healy Road is expected to extend beyond the provided storage length and taper. Given the planned roundabout by 2031, it is recommended the Region monitors the queues to determine if interim improvements are warranted.

### *5.7.2 2033 Horizon Year*

**Table 25** outlines the results of the 2033 future background queueing assessment.

**Table 25: 2033 Future Background Queueing Assessment**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| **Mayfield Road & Airport Road** | **Signal Opt. #2** | EBL | 90 | 150 | 200 |
| | | WBL | 45 | 45 | 165 |
| | | WBR | 20 | 25 | 60 |
| | | NBL | 105 | 190 | 95 |
| | | NBR | 30 | 50 | 60 |
| | | SBL | 45 | 70 | 100 |
| | | SBR | 35 | 55 | 105 |
| **Torbram Road & Old School Road** | **Signal Opt. #2** | NBL | 10 | 15 | 55[2] |
| | | SBL | 10 | - | 55 |
| **Airport Road & Alban Road/12333 Airport Road Access** | **Signal Opt. #2** | EBL | 25 | 55 | 55[3] |
| | | WBTR | 10 | 10 | 100 |
| | | NBL | 50 | 40 | 120 |
| | | NBR | 15 | 10 | 145 |
| | | SBL | 10 | 5 | 75[3] |
| | | SBR | 15 | 10 | 100 |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #2** | WBL | 25 | 40 | 30 |
| | | NBL | 30 | 25 | 70 |
| | | NBR | 10 | 20 | 65 |
| | | SBL | 10 | 20 | 70 |
| | | SBR | 5 | 5 | 60 |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Assumed as no design drawings are currently available.*
*Note 3: Two-way left-turn lane.*

The westbound left-turn movement at Airport Road & Perdue Court/Davis Lane is expected to extend beyond the provided storage length. However, the queue can be accommodated within the provided taper length.

As outlined for 2028 future background conditions, the northbound left-turn queues at Mayfield Road & Airport Road are expected to exceed the effective storage length. It is recommended that the storage length should be extended further to 190 m to accommodate the expected queues. This storage length extension can be accommodated within the study road network by adjusting the concrete median and are not expected to impact downstream intersections.

### *5.7.3 2038 Horizon Year*

**Table 25** outlines the results of the 2038 future background queueing assessment.

**Table 26: 2038 Future Background Queueing Assessment**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| Mayfield Road & Airport Road | Signal Opt. #2 | EBL | 90 | 165 | 200 |
| | | WBL | 45 | 40 | 165 |
| | | WBR | 20 | 30 | 60 |
| | | NBL | 115 | 225 | 95 |
| | | NBR | 25 | 60 | 60 |
| | | SBL | 55 | 55 | 100 |
| | | SBR | 35 | 60 | 105 |
| Torbram Road & Old School Road | Signal Opt. #2 | NBL | 15 | 15 | 55[2] |
| | | SBL | 5 | 5 | 55 |
| Airport Road & Alban Road/12333 Airport Road Access | Signal Opt. #2 | EBL | 20 | 55 | 55[3] |
| | | WBTR | 5 | 10 | 100 |
| | | NBL | 40 | 35 | 120 |
| | | NBR | 10 | 15 | 145 |
| | | SBL | 10 | 5 | 80[3] |
| | | SBR | 15 | 15 | 100 |
| Airport Road & Perdue Court/Davis Lane | Signal Opt. #2 | WBL | 25 | 35 | 30 |
| | | NBL | 30 | 30 | 70 |
| | | NBR | 10 | 30 | 65 |
| | | SBL | 10 | 20 | 70 |
| | | SBR | 5 | 5 | 60 |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Assumed as no design drawings are currently available.*
*Note 3: Two-way left-turn lane.*

The westbound left-turn movement at Airport Road & Perdue Court/Davis Lane is expected to extend beyond the provided storage length. However, the queue can be accommodated within the provided taper length.

Consistent with 2028 and 2033 future background conditions, the northbound left-turn queues at Mayfield Road & Airport Road are expected to extend beyond the effective storage length. It is recommended that the storage length should be further extended to 225 m to accommodate

the expected queues. This storage length extension can be accommodated within the study road network by reducing the existing concrete median, a portion of which is already currently within the additional left-turn lane width available.

### *5.7.4 Summary*

**Table 27** outlines the recommended auxiliary turn lane geometry based on the results of the queuing analysis above.

**Table 27: Future Background Recommended Auxiliary Turn Lane Geometry**

| Intersection | Movement | Horizon Year | Storage Length | | Improvement Type |
|---|---|---|---|---|---|
| | | | Planned | Recommended | |
| Mayfield Road & Airport Road | NBL | 2028 | 95 m | 145 m (+50 m) | Concrete Median Revision[1] |
| | | 2033 | | 190 m (+95 m) | |
| | | 2038 | | 225 m (+130 m) | |

*Note 1: Potential implementation as part of Mayfield Road widening project east of Airport Road.*

## 5.8 Recommendations Summary

**Table 28** summarizes the recommended future background improvements.

**Table 28: Future Background Recommended Improvements**

| Location | Improvement |
|---|---|
| **2028 Future Background** | |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (145 m). |
| | Monitor traffic operations and queues to determine if additional improvements are warranted, prior to Mayfield Road widening. |
| Airport Road & Old School Road/Healy Road | Monitor traffic operations and queues to determine if additional improvements are warranted, prior to implementation of a roundabout. |
| Airport Road & Perdue Court/Davis Lane | Implement signal control. |
| **2033 Future Background** | |
| Mayfield Road | Maintain schedule for planned road widening and associated improvements between Airport Road and Coleraine Drive. |
| Airport Road | Maintain schedule for planned road widening and associated improvements between Mayfield Road and King Street. |
| Torbram Road | Maintain schedule for planned road widening and urbanization between Mayfield Road and Old School Road. |
| Highway 413 | Maintain schedule for planned highway between Highway 401 to Highway 400. |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (190 m). |
| Airport Road & Old School Road/Healy Road | Maintain schedule for planned roundabout. |
| **2038 Future Background** | |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (225 m). |
| Torbram Road & Old School Road | Implement signal control. |

# 6.0 Site Generated Traffic

This section reviews the trip generation of the Proposed Development and the distribution of these trips on the transportation network.

## 6.1 Trip Generation

The Proposed Development will result in additional vehicles on the boundary road network that would otherwise not exist, as well as additional turning movements at the study intersections.

Trip generation for the Proposed Residential Development was determined using the following methodology:

- The baseline trip generation was generated based on the rates outlined in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition (September 2021) for the land use category (LUC) 150 "Warehouse".
    - Fitted curve estimates and average rates in a general urban/suburban setting are provided in the ITE Trip Generation Manual, 11th Edition. Fitted curve estimates were used if available, and deemed accurate (i.e., more than 20 data points and coefficient of determination R2 > 0.75).
    - Given the industrial nature of the Proposed Developments, both the vehicle and truck trip generation was forecasted. It is noted that the vehicle trip generation consists of both passenger car and truck trips.
- A mode split adjustment was applied to the baseline trip generation, as the inherent mode split of the ITE trip generation rates may differ from the applicable mode split targets. As such, an adjustment factor was included to account for the sustainable mode share targets identified in the . Region's Transportation Master Plan (December 2017).
    - Only the passenger car trips were adjusted for mode split as heavy truck trips are not generally impacted by corresponding initiatives to reduce vehicle use.

**Appendix K** includes the ITE Trip Generation Manual excerpts.

### *6.1.1 Baseline Trip Generation*

**Table 29** outlines the baseline vehicle trip generation for the Proposed Development.

**Table 29: Baseline Vehicle Trip Generation**

| Land Use | Statistic | Trip Type | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total |
| LUC 150 "Warehouse" | 768,380 ft² | Total Vehicle | A.M. | 0.17/1000 ft² | 101 | 30 | 131 |
| | | | P.M. | 0.18/1000 ft² | 39 | 99 | 138 |
| | | Truck | A.M. | 0.02/1000 ft² | 8 | 7 | 15 |
| | | | P.M. | 0.03/1000 ft² | 12 | 11 | 23 |
| | | Passenger Car | A.M. | N/A[2] | 93 | 23 | 116 |
| | | | P.M. | | 27 | 88 | 115 |

*Note 1: Rounding may cause the appearance of discrepancies.*
*Note 2: Difference between vehicle trips and truck trips.*

The Proposed Development is expected to generate 131 and 138 two-way baseline vehicle trips during the weekday a.m. and p.m. peak hours, respectively. These vehicle trips are comprised of 15 and 23 truck trips during the weekday a.m. and p.m. peak hours, respectively, as well as 116 and 115 passenger car trips during the weekday a.m. and p.m. peak hours.

### *6.1.2 Mode Split Adjustment*

As outlined in Institute of Transportation Engineers (ITE) Trip Generation Handbook, 3rd Edition (September 2017), the trip generation rates for suburban context included an automobile split of 95% or higher. For the site generated trips, a target vehicle mode split of 78% was used per the Region's Transportation Master Plan. As such, a mode split adjustment factor of 0.82 was applied to passenger car trips.

**Table 30** outlines the mode split adjusted passenger car trip generation.

**Table 30: Mode Split Adjusted Passenger Car Trip Generation**

| Land Use | Statistic | Trip Type | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total |
| LUC 150 "Warehouse" | 768,380 ft² | Passenger Car | A.M. | 0.82 mode split adjustment factor | 76 | 19 | 95 |
| | | | P.M. | | 22 | 72 | 94 |

*Note 1: Rounding may cause the appearance of discrepancies.*

The Subject Development is expected to generate 95 and 94 two-way mode split adjusted passenger car trips during the weekday a.m. and p.m. peak hours, respectively.

### *6.1.3 Summary*

**Table 31** summarizes the Proposed Development's forecasted vehicle trip generation.

**Table 31: Vehicle Trip Generation**

| Land Use | Statistic | Type | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total |
| LUC 150 "Warehouse" | 768,380 ft² | Vehicle | A.M. | 0.17/1000 ft² | 84 | 26 | 110 |
| | | | P.M. | 0.18/1000 ft² | 34 | 83 | 117 |
| | | Truck | A.M. | 0.02/1000 ft² | 8 | 7 | 15 |
| | | | P.M. | 0.03/1000 ft² | 12 | 11 | 23 |
| | | Passenger Car | A.M. | N/A[2] | 76 | 19 | 95 |
| | | | P.M. | | 22 | 72 | 94 |

*Note 1: Rounding may cause the appearance of discrepancies.*

The Proposed Development is expected to generate a total of 110 and 117 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

## 6.2 Trip Distribution

The passenger car and truck trips were distributed separately to capture the differing travel patterns between passenger cars and heavy vehicles, especially given the heavy vehicle restrictions within the study area.

Furthermore, due to the planned Highway 413, assumed to be built out by 2031, the site generated trips were distributed separately for the 2028 and 2033 horizon years. Changes in travel patterns are expected due to the buildout of Highway 413, capturing the more convenient routing options, especially pertaining to heavy vehicle traffic.

### *6.2.1 Passenger Car Trips*

The site generated passenger car trips were distributed to the study road network based on 2022 Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey consisting of transportation patterns for households in the Greater Toronto and Hamilton Area and surrounding area.

The Subject Property is located in 2006 Greater Toronto Area (GTA) Zone 3014, which primarily consists of greenfield lands and some existing industrial buildings. To increase the sample size of the query, proxy zones were also included. 2006 GTA Zone 3015, 2006 GTA Zone 3440 and 2006 GTA Zone 3441 were used as proxy zones. These zones are adjacent to the subject zone and includes industrial developments, thus these zones are expected to have similar travel patterns to the Subject Lands.

The TTS data was filtered to trips entering and existing the subject and proxy zones for work purposes during the weekday a.m. and p.m. peak hours, respectively, which reflect the peak commuter directions.

As Highway 413 is expected to be built out by the 2031, separate trip distributions were applied for the 2028 and 2033 horizon years. It is noted that the 2033 passenger car trip distribution is consistent with the trip distribution applied for the Tullamore Northwest Employment Area, as outlined in the Transportation Study (Crozier, May 2025).

**Table 32** summarizes the trip distribution for employment passenger car trips for the 2028 and 2033 horizon years.

**Table 32: Passenger Car Trip Distribution**

| Direction | 2028 Horizon Year | | 2033 Horizon Year | | External Network Gateway |
|---|---|---|---|---|---|
| | Inbound | Outbound | Inbound | Outbound | |
| North | 27% | 30% | 29% | 18% | Airport Road |
| South | 14% | 25% | 13% | 25% | Airport Road |
| East | 7% | 0% | 6% | 7% | Mayfield Road, Healy Road |
| West | 51% | 45% | 29% | 24% | Mayfield Road, Old School Road |
| Highway 413 (via North) | - | - | 23% | 26% | Airport Road |
| **Total** | **100%** | **100%** | **100%** | **100%** | **-** |

**Appendix L** includes the TTS data.

### *6.2.2 Truck Trips*

2028 Horizon Year

Based on existing truck routing options and truck restrictions, heavy traffic primarily relies on Airport Road and Mayfield Road. The truck trips were distributed based on the existing truck travel patterns observed at the Airport Road & 12333 Airport Road Access and Mayfield Road & Airport Road intersections.

2033 Horizon Year

For the 2033 horizon year, the site generated truck trips were distributed to the study road network based on the expected travel routes for heavy vehicle traffic and roadways where heavy trucks are permitted. This is consistent with the methodology outlined in the Tullamore Northwest Employment Area Secondary Plan Transportation Study (Crozier, May 2025).

Heavy trucks will primarily rely on Highway 413 as well as Airport Road and Mayfield Road. The remaining study roadways are not expected to support heavy vehicle traffic under 2033 future conditions.

Due to the proposed Highway 413, a portion of current heavy vehicle traffic along Mayfield Road is expected to instead use Highway 413. As there are currently no details regarding the shift in heavy vehicle distribution, it is assumed that two-thirds of all truck traffic will use Highway 413, with the remaining one-third will use Mayfield Road. It is assumed that heavy vehicle traffic will access the Highway 413 via the planned Airport Road interchange.

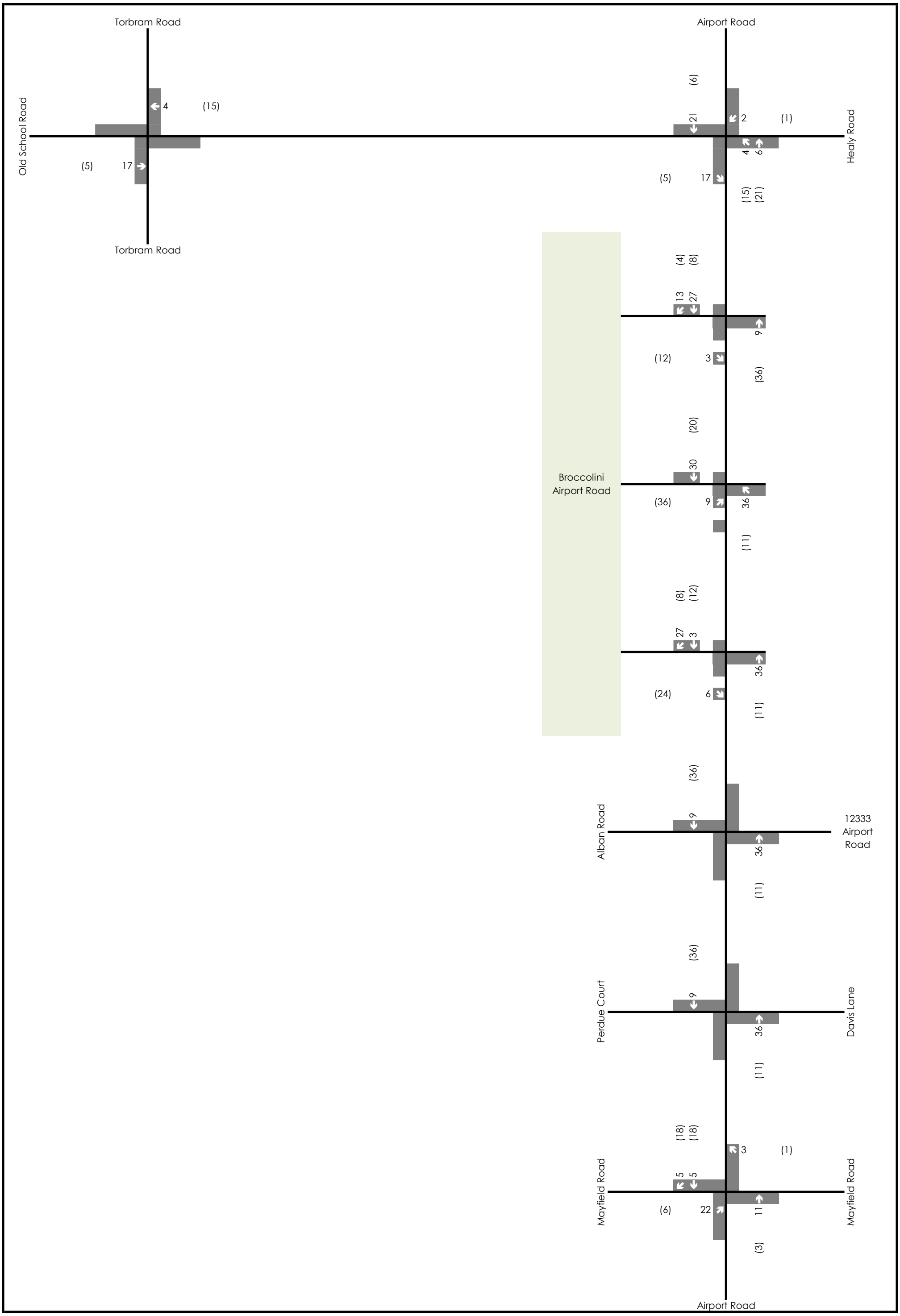
The remaining one-third is expected to travel to/from the south of Airport Road to access Mayfield Road. All traffic along Mayfield was then distributed based on the eastbound and westbound travel patterns.

This estimated shift in truck traffic distribution was based on Mayfield Road being the current primary truck corridor, partly because Highway 410 terminates just north of Mayfield and Highway 427 terminates on McKenzie Drive, approximately 3.4 km south of Mayfield Road. The implementation of Highway 413 will provide more convenient and direct routes to the surrounding highways, with the Airport Road interchange being located approximately 1.0 km north of the Subject Lands.

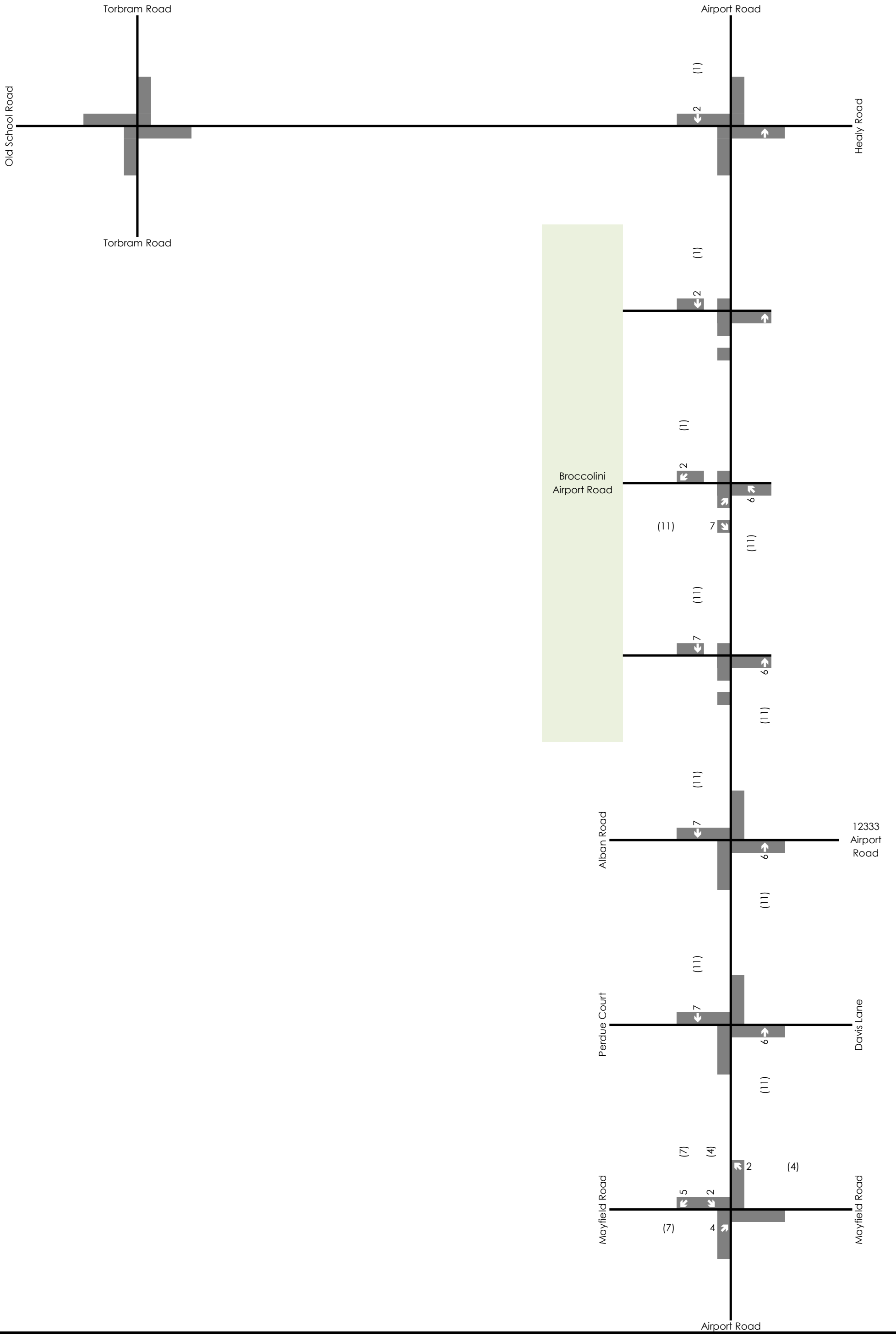
## 6.3 Trip Assignment

The site generated trips were distributed throughout the external study road network based on the trip distribution outlined in **Section 6.2**.

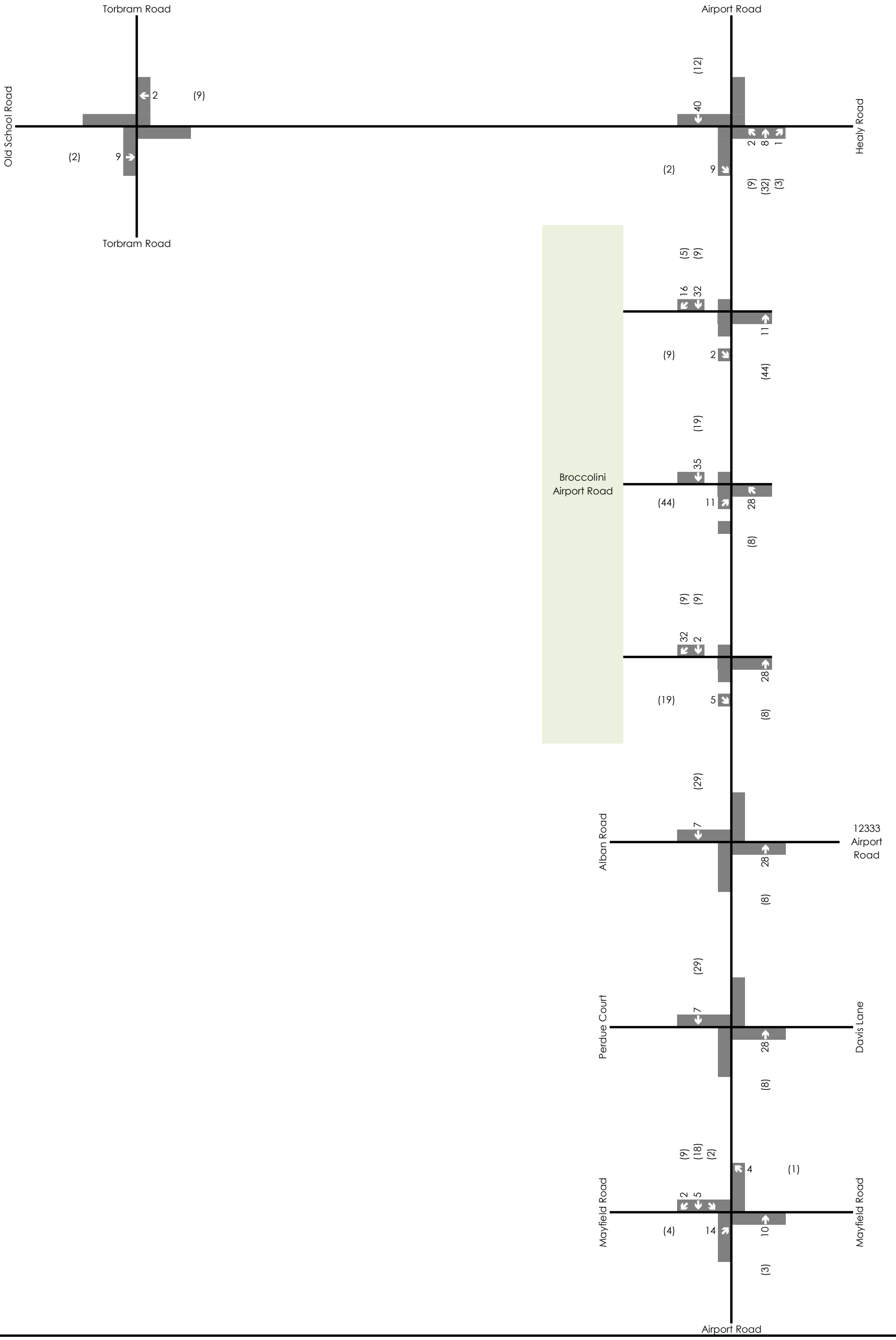
**Figure 17**, and **Figure 18** outlines the 2028 passenger car and truck site traffic volumes, respectively. **Figure 19** and **Figure 20** outlines the 2033 & 2038 passenger car and truck site traffic volumes, respectively.




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 17 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2028 Passenger Car Site Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 18 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2028 Heavy Truck Site Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |




**Legend**

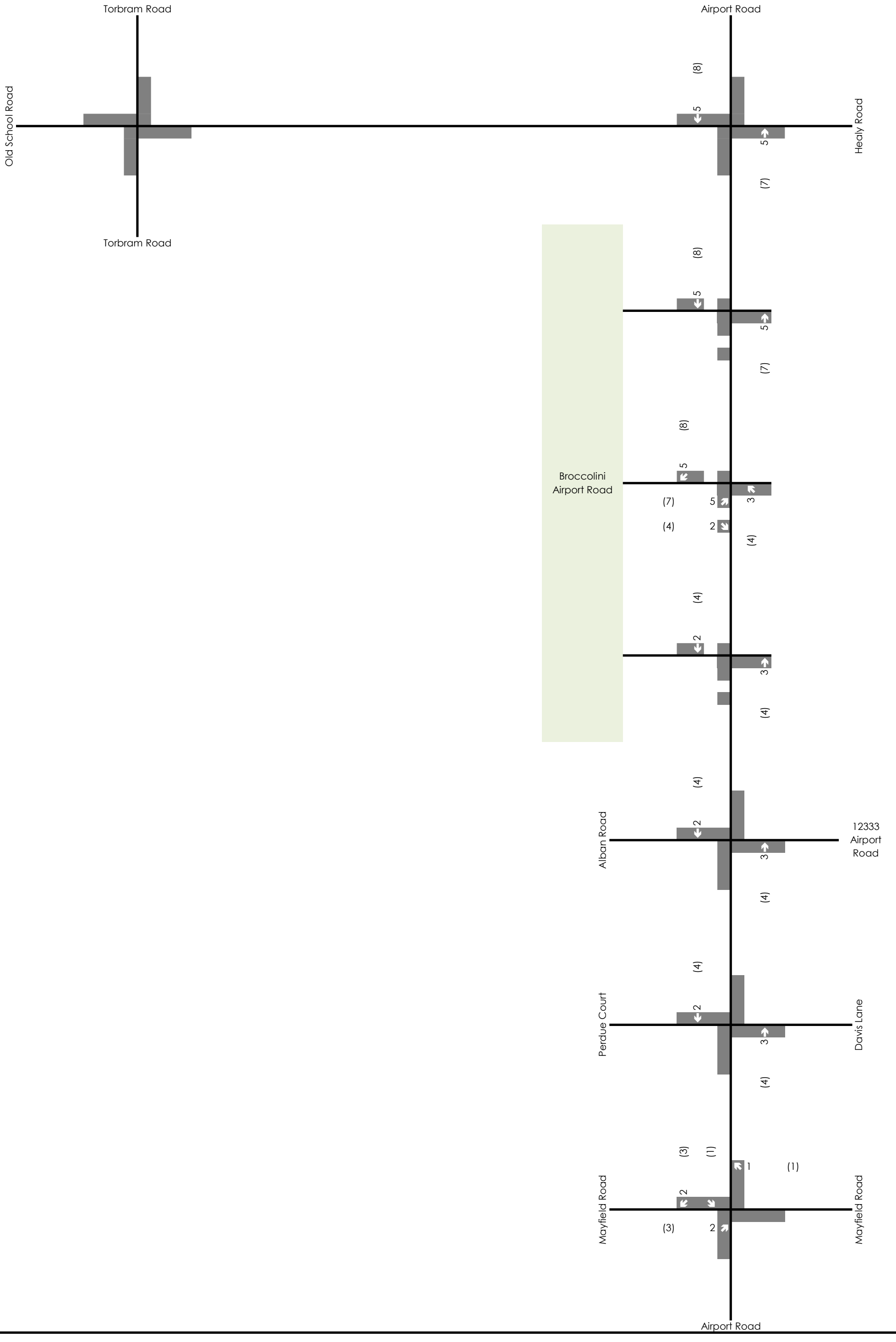
xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes
{xx} Weekend Peak Hour Traffic Volumes

**Broccolini Airport Road**

**2033 & 2038 Passenger Car Site Traffic Volumes**

CROZIER CONSULTING ENGINEERS

**Figure 19**
Project No. 2278-7228
Date: 11/13/25
Analyst. MY




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 20 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2033 & 2038 Heavy Truck Site Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |

# 7.0 Future Total Transportation Network Review

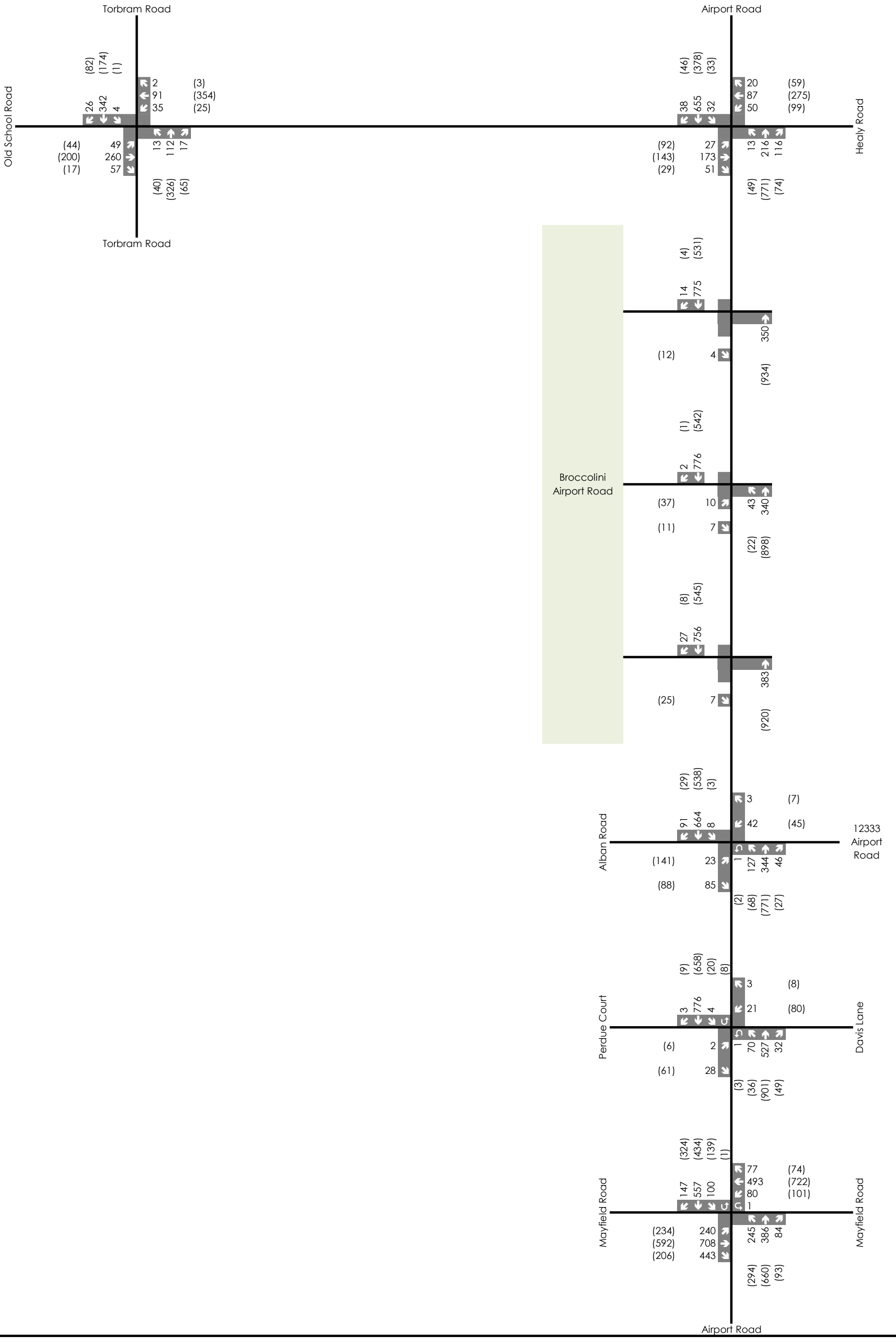
The section herein reviews the future total conditions of the study road network for the 2028 and 2033 horizon years.

## 7.1 Future Total Traffic Volumes

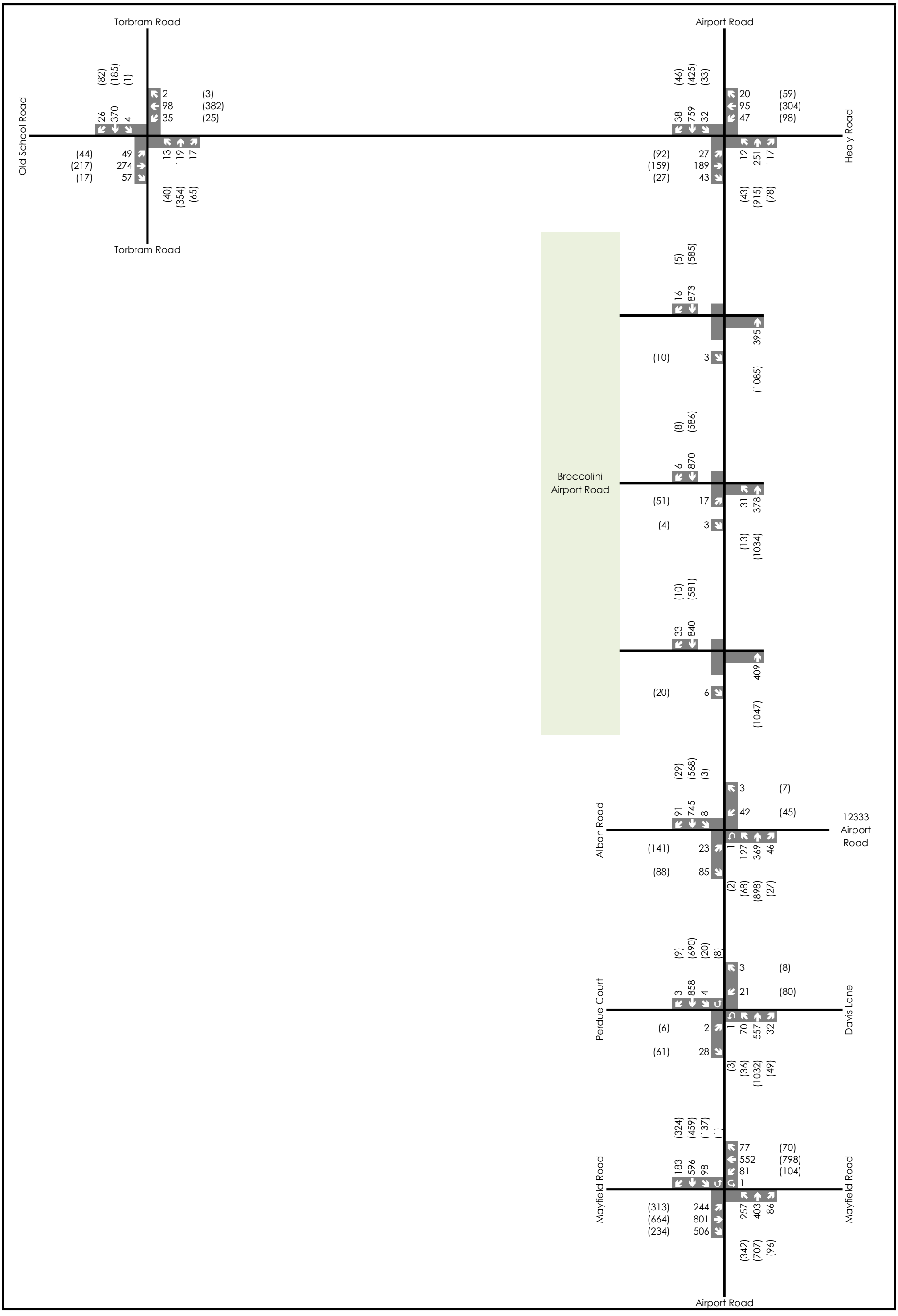
The future total traffic volumes consist of the following components:

- Future Background Traffic Volumes
- Site Traffic Volumes

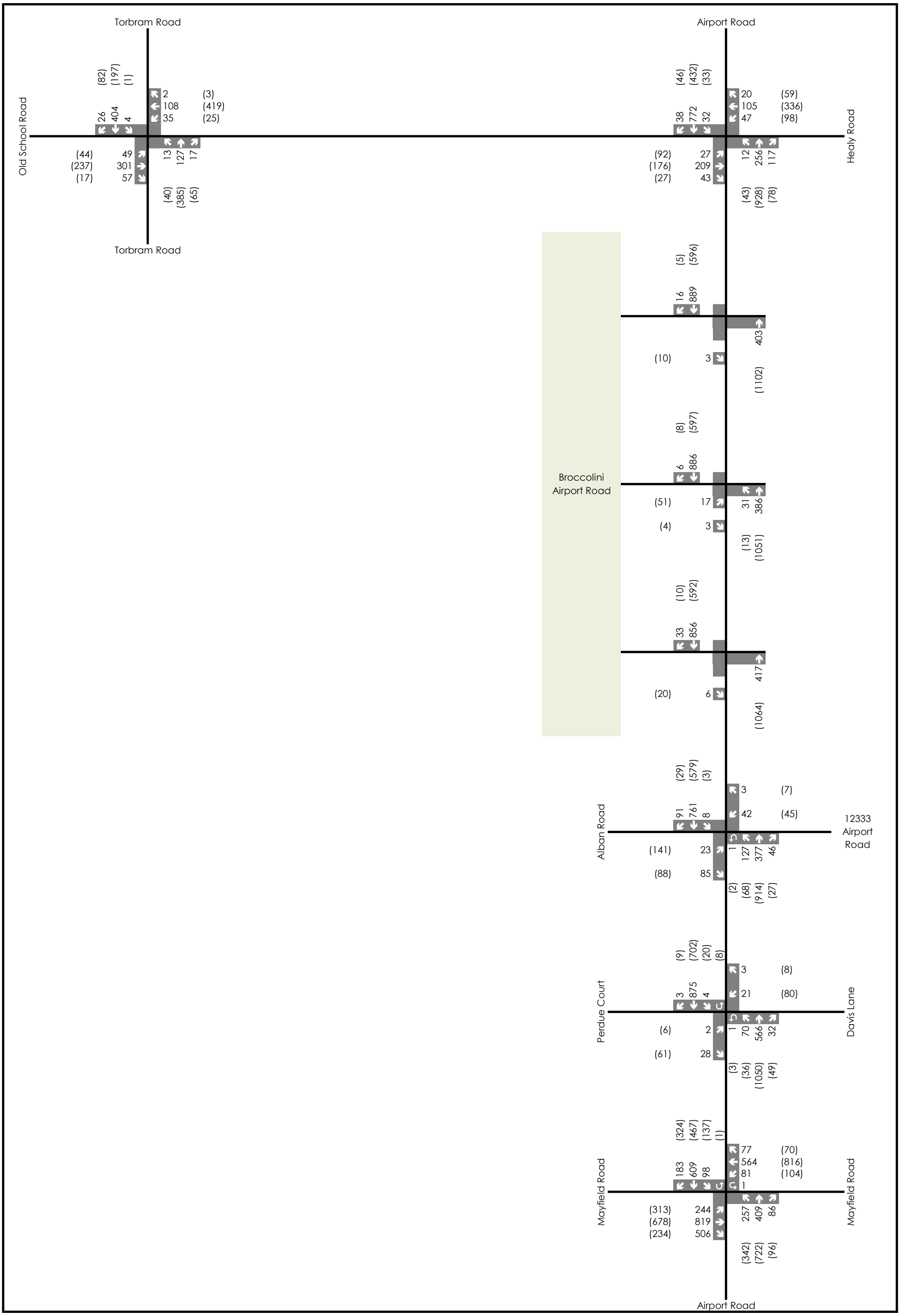
**Figure 21**, **Figure 22** and **Figure 23** illustrates the 2028, 2033 and 2038 future total traffic volumes, respectively.




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 21 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2028 Future Total Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 22 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2033 Future Total Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |




## Legend

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes
{xx} Weekend Peak Hour Traffic Volumes

**Broccolini Airport Road**

**2038 Future Total Traffic Volumes**

CROZIER CONSULTING ENGINEERS

**Figure 23**

Project No. 2278-7228
Date: 11/13/25
Analyst. MY

## 7.2 Warrants Assessment

Signal warrants were assessed for the full moves site access off Airport Road for future total conditions. As previously outlined in **Section 5.3**, the warrants were evaluated based on Justification 7: Projected Volumes per Chapter 4 of the Ontario Traffic Manual Book 12: Traffic Signals (MTO, March 2012).

**Table 33** summarizes the future total signal warrant analysis.

**Table 33: Future Total Signal Warrant Analysis**

| Intersection | Horizon Year | Flow Condition | Lanes on Major Road | Signal Warranted? |
|---|---|---|---|---|
| Airport Road & Full Moves Access | 2028 Future Total | Free | 1 Lane | No |
| | 2033 Future Total | | 2+ Lanes | No |
| | 2038 Future Total | | | No |

As outlined in **Table 33**, signal control is not warranted at the proposed full moves access off Airport Road.

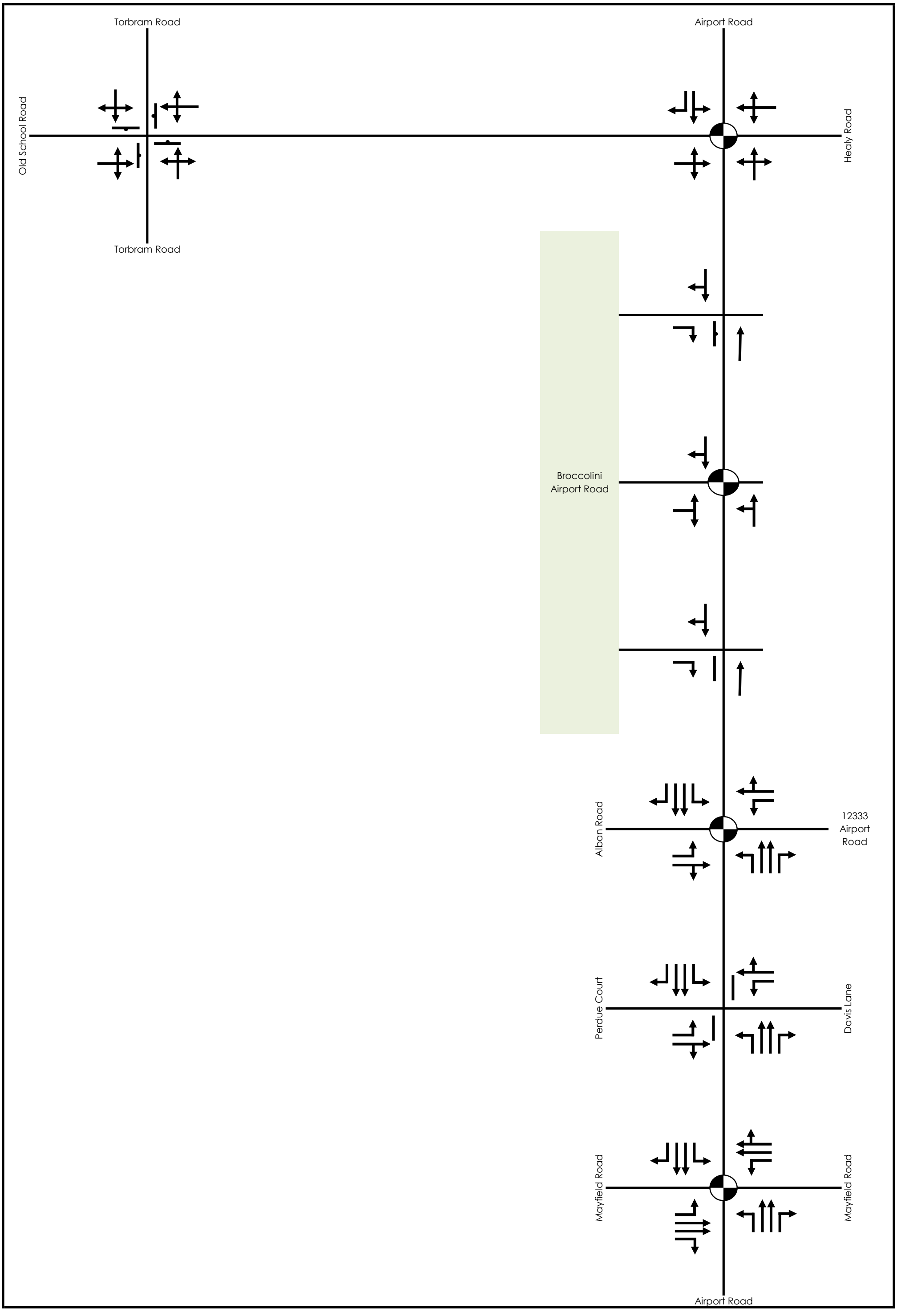
**Appendix J** includes the warrants assessment reports.

## 7.3 Traffic Modelling and Assumptions

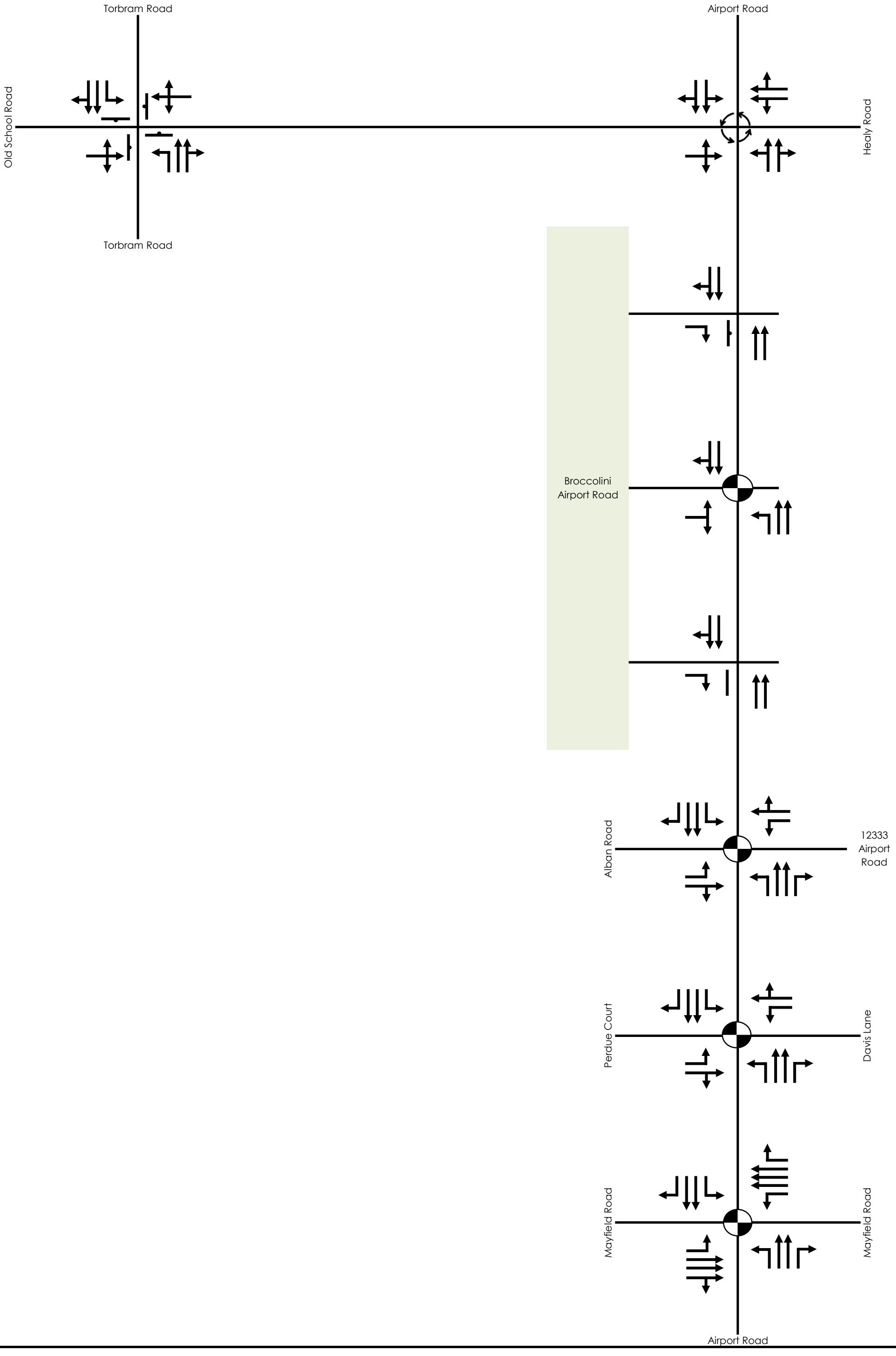
### *7.3.1 Roadway Geometry*

It is understood that auxiliary turn-lanes may be requested by Region staff to support the proposed site accesses. Nevertheless, for a conservative analysis, auxiliary turn lanes, beyond the two-way left-turn lane identified in the Airport Road design drawings, were not modelled herein. A review of the recommended auxiliary turn lanes is included below in **Section 9.1**.

**Figure 24** and **Figure 25** illustrates the 2028 and 2033 future total study road network, respectively.




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 24 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2028 Future Total Study Road Network | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |




| Legend | Broccolini Airport Road | CROZIER CONSULTING ENGINEERS | Figure 25 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | 2033 Future Total Traffic Volumes | | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst. MY |

### *7.3.2 Modelling Parameters*

The section herein outlines the traffic modelling and assumptions used in evaluating future total conditions. Unless otherwise noted, future background traffic modelling and assumptions were maintained for future total conditions.

For comparative purposes, the signal timing plans were also kept consistent with future background conditions.

While not warranted Airport Road & Full Moves Access was modelled as signalized, to support the forecasted traffic volumes, including heavy truck traffic. Consistent with the signal timing plan at Airport Road & Alban Road/12333 Airport Road Access, the proposed signal at Airport Road & Perdue Court/Davis Lane was modelled with a 120 s cycle length during the weekday a.m. and p.m. peak hours.

Consistent with future background conditions, the modelling includes updated heavy vehicle percentages that reflect the increased heavy vehicle traffic associated with the Subject Development.

## 7.4 Intersection Operations

The section herein reviews the intersection operations under 2028 and 2033 future total conditions. This assessment includes key metrics including level of service (LOS), control delay and volume-to-capacity (v/c) ratio.

**Appendix E** contains the detailed capacity analysis worksheets.

### *7.4.1 2028 Horizon Year*

Signalized Intersections

**Table 34** details the 2028 future total traffic operations for the signalized study intersections.

**Table 34: 2028 Future Total Traffic Operations – Signalized Intersections**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Mayfield Road & Airport Road** | **Signal Opt. #1** | **Overall** | **C** | **D** | **32** | **36** | **0.83** | **0.83** |
| | | EBL | C | C | 21 | 29 | 0.57 | 0.71 |
| | | EBT | C | C | 26 | 27 | 0.46 | 0.41 |
| | | EBR | A | A | 8 | 4 | 0.52 | 0.26 |
| | | WBL | B | B | 17 | 19 | 0.27 | 0.27 |
| | | WBTR | C | D | 29 | 37 | 0.47 | 0.61 |
| | | NBL | D | D | 51 | 50 | 0.83 | 0.83 |
| | | NBT | D | E | 38 | 58 | 0.47 | 0.83 |
| | | NBR | A | A | 3 | 7 | 0.22 | 0.26 |
| | | SBL | D | D | 41 | 42 | 0.36 | 0.66 |
| | | SBT | E | D | 62 | 53 | 0.78 | 0.65 |
| | | SBR | C | A | 24 | 10 | 0.38 | 0.60 |

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Old School Road/Healy Road** | **Signal Opt. #1** | **Overall** | **D** | **F** | **35** | **93** | **0.83** | **1.14** |
| | | EBLTR | E | F | 67 | 96 | 0.83 | 0.95 |
| | | WBLTR | E | F | 60 | 134 | 0.67 | 1.14 |
| | | NBLT | B | E | 17 | 74 | 0.29 | 1.03 |
| | | NBR | A | A | 1 | 3 | 0.10 | 0.06 |
| | | SBLT | C | F | 31 | 113 | 0.79 | 1.11 |
| | | SBR | A | A | 1 | 2 | 0.03 | 0.04 |
| **Airport Road & Alban Road/12333 Airport Road Access** | **Signal Opt. #1** | **Overall** | **A** | **B** | **7** | **17** | **0.44** | **0.73** |
| | | EBL | D | E | 51 | 67 | 0.18 | 0.73 |
| | | EBTR | A | A | 1 | 1 | 0.23 | 0.20 |
| | | WBL | E | D | 64 | 44 | 0.44 | 0.27 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.02 |
| | | NBL | A | B | 6 | 18 | 0.28 | 0.16 |
| | | NBT | A | B | 3 | 17 | 0.14 | 0.32 |
| | | NBR | A | A | 1 | 8 | 0.05 | 0.04 |
| | | SBL | A | A | 6 | 6 | 0.01 | 0.01 |
| | | SBT | A | A | 6 | 6 | 0.25 | 0.24 |
| | | SBR | A | A | 2 | 0 | 0.09 | 0.03 |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #1** | **Overall** | **A** | **A** | **3** | **9** | **0.29** | **0.54** |
| | | EBL | D | D | 48 | 45 | 0.03 | 0.04 |
| | | EBTR | A | A | 1 | 1 | 0.09 | 0.16 |
| | | WBL | D | E | 55 | 63 | 0.23 | 0.54 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.03 |
| | | NBL | A | A | 2 | 5 | 0.15 | 0.10 |
| | | NBT | A | A | 2 | 5 | 0.20 | 0.34 |
| | | NBR | A | A | 0 | 2 | 0.03 | 0.07 |
| | | SBL | A | B | 4 | 10 | 0.01 | 0.10 |
| | | SBT | A | A | 3 | 8 | 0.29 | 0.26 |
| | | SBR | A | A | 0 | 1 | 0.00 | 0.01 |
| **Airport Road & Full Moves Access** | **Signal Opt. #1** | **Overall** | **A** | **B** | **6** | **14** | **0.51** | **0.66** |
| | | EBLR | D | D | 39 | 47 | 0.13 | 0.31 |
| | | NBLT | A | B | 7 | 17 | 0.30 | 0.66 |
| | | SBTR | A | A | 4 | 5 | 0.51 | 0.39 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

Airport Road & Old School Road/Healy Road is expected to operate at a LOS "F" under 2028 future total conditions, with a maximum increase in v/c ratio of 0.01. As previously outlined, these operations are impacted by the split phasing to address safety concerns associated with the offset east and west approaches. This intersection is planned to be converted to a roundabout by 2031, which will address the operational and safety concerns. As discussed for future

background conditions, it is recommended that the Region monitors traffic operations to determine if additional improvements are warranted.

The signalized full moves access off Airport Road is expected to operate at a LOS "B" or better with low to moderate control delays and v/c ratios.

Under 2028 future total conditions, the remaining signalized study intersections are expected to operate at an unchanged LOS "D" or better with low to moderate control delays and v/c ratios, in comparison to 2028 future background operations. The intersections are expected to operate efficiently with not operational concerns expected.

Unsignalized Intersections

**Table 35** details the 2028 future total traffic operations for the signalized study intersections.

**Table 35: 2028 Future Total Traffic Operations – Unsignalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Torbram Road & Old School Road** | **Overall** | **C** | **E** | **16** | **37** | **0.63** | **0.89** |
| | EBLTR | C | C | 16 | 23 | 0.58 | 0.60 |
| | WBLTR | B | E | 11 | 38 | 0.22 | 0.82 |
| | NBLTR | B | E | 12 | 48 | 0.25 | 0.89 |
| | SBLTR | C | D | 19 | 31 | 0.63 | 0.68 |
| **Airport Road & North RIRO Access** | **Overall** | **B** | **B** | **14** | **12** | **0.46** | **0.55** |
| | EBR | B | B | 14 | 12 | 0.01 | 0.02 |
| | NBT | A | A | 0 | 0 | 0.21 | 0.55 |
| | SBTR | A | A | 0 | 0 | 0.46 | 0.31 |
| **Airport Road & South RIRO Access** | **Overall** | **B** | **B** | **14** | **12** | **0.46** | **0.54** |
| | EBR | B | B | 14 | 12 | 0.02 | 0.04 |
| | NBT | A | A | 0 | 0 | 0.23 | 0.54 |
| | SBTR | A | A | 0 | 0 | 0.46 | 0.33 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*

*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The proposed right-in/right-out (RIRO) site accesses off Airport Road are expected to operate efficiently at a LOS "B" during the weekday a.m. and p.m. peak hours, with low control delays and v/c ratios.

The remaining unsignalized study intersection is expected to operate at an unchanged LOS "D" or better with low to moderate control delays and v/c ratios, in comparison to future background conditions. No notable operational constraints are expected at these intersections, and there is reserve capacity to accommodate future traffic growth.

### *7.4.2 2033 Horizon Year*

Signalized Intersections

**Table 36** details the 2033 future total traffic operations for the signalized study intersections.

**Table 36: 2033 Future Total Traffic Operations – Signalized Intersections**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Mayfield Road & Torbram Road** | **Signal Opt. #2** | **Overall** | **C** | **D** | **33** | **38** | **0.88** | **0.94** |
| | | EBL | C | C | 22 | 34 | 0.55 | 0.79 |
| | | EBTR | C | C | 25 | 26 | 0.62 | 0.44 |
| | | WBL | C | C | 24 | 21 | 0.47 | 0.37 |
| | | WBT | C | D | 27 | 36 | 0.31 | 0.46 |
| | | WBR | A | A | 2 | 1 | 0.15 | 0.16 |
| | | NBL | E | E | 56 | 67 | 0.88 | 0.94 |
| | | NBT | D | E | 37 | 56 | 0.46 | 0.83 |
| | | NBR | A | A | 7 | 7 | 0.23 | 0.26 |
| | | SBL | D | D | 36 | 43 | 0.34 | 0.67 |
| | | SBT | E | D | 60 | 54 | 0.79 | 0.68 |
| | | SBR | B | A | 19 | 10 | 0.41 | 0.60 |
| **Airport Road & Alban Road/12333 Airport Road Access** | **Signal Opt. #2** | **Overall** | **A** | **B** | **6** | **12** | **0.44** | **0.68** |
| | | EBL | D | E | 51 | 64 | 0.18 | 0.68 |
| | | EBTR | A | A | 2 | 1 | 0.25 | 0.21 |
| | | WBL | E | D | 64 | 49 | 0.44 | 0.32 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.02 |
| | | NBL | A | A | 6 | 8 | 0.31 | 0.19 |
| | | NBT | A | A | 3 | 7 | 0.14 | 0.36 |
| | | NBR | A | A | 1 | 1 | 0.05 | 0.04 |
| | | SBL | A | A | 4 | 7 | 0.01 | 0.01 |
| | | SBT | A | A | 4 | 6 | 0.28 | 0.24 |
| | | SBR | A | A | 1 | 1 | 0.09 | 0.05 |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #2** | **Overall** | **A** | **A** | **3** | **6** | **0.31** | **0.54** |
| | | EBL | D | D | 48 | 45 | 0.03 | 0.04 |
| | | EBTR | A | A | 1 | 1 | 0.10 | 0.15 |
| | | WBL | D | E | 55 | 63 | 0.23 | 0.54 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.03 |
| | | NBL | A | A | 2 | 5 | 0.17 | 0.11 |
| | | NBT | A | A | 2 | 5 | 0.21 | 0.39 |
| | | NBR | A | A | 0 | 2 | 0.03 | 0.07 |
| | | SBL | A | A | 3 | 3 | 0.01 | 0.12 |
| | | SBT | A | A | 2 | 2 | 0.31 | 0.26 |
| | | SBR | A | A | 0 | 0 | 0.00 | 0.01 |

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Full Moves Access** | **Signal Opt. #2** | **Overall** | **A** | **A** | **4** | **8** | **0.30** | **0.36** |
| | | EBLR | D | D | 47 | 54 | 0.15 | 0.35 |
| | | NBL | A | A | 6 | 7 | 0.06 | 0.03 |
| | | NBT | A | A | 5 | 8 | 0.13 | 0.36 |
| | | SBTR | A | A | 2 | 4 | 0.30 | 0.23 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

In comparison to 2033 future background conditions, the signalized study intersections are expected to continue operating efficiently at an unchanged LOS "D" or better with low-to-moderate control delays and v/c ratios. Accordingly, these metrics outline that the signalized intersections are not significantly impacted by the Proposed Development.

Unsignalized Intersections

**Table 36** details the 2033 future total traffic operations for the signalized study intersections.

**Table 37: 2033 Future Total Traffic Operations – Signalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Torbram Road & Old School Road** | **Overall** | **C** | **D** | **15** | **26** | **0.66** | **0.86** |
| | EBLTR | C | C | 20 | 23 | 0.66 | 0.62 |
| | WBLTR | B | E | 12 | 44 | 0.26 | 0.86 |
| | NBL | B | B | 11 | 12 | 0.03 | 0.10 |
| | NBT | B | C | 11 | 19 | 0.16 | 0.52 |
| | NBR | B | C | 11 | 16 | 0.11 | 0.40 |
| | SBL | B | B | 10 | 14 | 0.01 | 0.00 |
| | SBT | B | B | 15 | 15 | 0.45 | 0.29 |
| | SBR | B | B | 11 | 15 | 0.27 | 0.32 |
| **Airport Road & North RIRO Access** | **Overall** | **B** | **B** | **11** | **10** | **0.34** | **0.32** |
| | EBR | B | B | 11 | 10 | 0.01 | 0.01 |
| | NBT | A | A | 0 | 0 | 0.12 | 0.32 |
| | SBTR | A | A | 0 | 0 | 0.34 | 0.23 |
| **Airport Road & South RIRO Access** | **Overall** | **B** | **A** | **10** | **10** | **0.33** | **0.31** |
| | EBR | B | A | 10 | 10 | 0.01 | 0.03 |
| | NBT | A | A | 0 | 0 | 0.12 | 0.31 |
| | SBTR | A | A | 0 | 0 | 0.33 | 0.23 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*

*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The proposed right-in/right-out (RIRO) site accesses off Airport Road are expected to continue operating efficiently at a LOS "B" during the weekday a.m. and p.m. peak hours, with low control delays and v/c ratios.

The remaining unsignalized study intersection is expected to operate at a LOS "D" or better with low to moderate control delays and v/c ratios, consistent with future background conditions. No notable operational constraints are expected at these intersections, and there is reserve capacity to accommodate future traffic growth.

Roundabout Intersections

**Table 38** details the 2033 future total traffic operations for the roundabout study intersections.

**Table 38: 2033 Future Total Traffic Operations – Roundabout Intersection**

| Intersection | Approach | LOS | | Delay (s) | | v/c ratio[1] | | 95th %ile Queue[2] | |
|---|---|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Airport Road & Old School Road/Healy Road | **Overall** | **A** | **A** | **2** | **3** | **0.35** | **0.43** | **-** | **-** |
| | EB | A | A | 2 | 2 | 0.14 | 0.13 | ~1 | ~1 |
| | WB | A | A | 2 | 3 | 0.07 | 0.27 | ~1 | ~1 |
| | NB | A | A | 2 | 3 | 0.17 | 0.43 | ~1 | ~1 |
| | SB | A | A | 2 | 2 | 0.35 | 0.25 | ~1 | ~1 |

*Note 1: Ratio of flow to capacity (RFC). The overall RFC for roundabout intersections is the maximum approach RFC. All RFCs greater than 0.85 are outlined in red.*
*Note 2: 95th percentile queues are recorded in passenger car equivalents. Rounded to the nearest vehicle.*

The Airport Road & Old School Road/Healy Road intersection is expected to operate at an unchanged LOS "A" with low control delays and v/c ratios in comparison to 2033 future background conditions. These metrics indicated that the intersection is anticipated to operate with low control delays and moderate v/c ratios, indicating the intersection is efficiently with reserve capacity for future growth.

### *7.4.3 2038 Horizon Year*

Signalized Intersections

**Table 39** details the 2038 future total traffic operations for the signalized study intersections.

**Table 39: 2038 Future Total Traffic Operations – Signalized Intersections**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Mayfield Road & Torbram Road | Signal Opt. #2 | **Overall** | **C** | **D** | **33** | **38** | **0.89** | **0.94** |
| | | EBL | C | D | 22 | 36 | 0.56 | 0.80 |
| | | EBTR | C | C | 26 | 26 | 0.63 | 0.45 |
| | | WBL | C | C | 25 | 21 | 0.49 | 0.38 |
| | | WBT | C | D | 27 | 37 | 0.32 | 0.47 |
| | | WBR | A | A | 2 | 1 | 0.15 | 0.16 |
| | | NBL | E | E | 57 | 66 | 0.89 | 0.94 |
| | | NBT | D | E | 36 | 56 | 0.47 | 0.84 |
| | | NBR | A | A | 7 | 7 | 0.23 | 0.25 |
| | | SBL | D | D | 36 | 43 | 0.34 | 0.68 |
| | | SBT | E | D | 60 | 54 | 0.80 | 0.68 |
| | | SBR | B | B | 19 | 10 | 0.41 | 0.60 |
| Torbram Road & Old School Road | Signal Opt. #2 | **Overall** | **B** | **B** | **19** | **19** | **0.77** | **0.78** |
| | | EBLTR | C | C | 31 | 24 | 0.77 | 0.60 |
| | | WBLTR | B | C | 19 | 30 | 0.31 | 0.78 |
| | | NBL | B | B | 11 | 12 | 0.03 | 0.08 |
| | | NBTR | A | B | 10 | 11 | 0.08 | 0.27 |
| | | SBL | B | B | 11 | 12 | 0.01 | 0.00 |
| | | SBTR | B | A | 11 | 9 | 0.25 | 0.17 |
| Airport Road & Alban Road/12333 Airport Road Access | Signal Opt. #2 | **Overall** | **A** | **B** | **6** | **12** | **0.44** | **0.68** |
| | | EBL | D | E | 51 | 64 | 0.18 | 0.68 |
| | | EBTR | A | A | 2 | 1 | 0.26 | 0.21 |
| | | WBL | E | D | 64 | 49 | 0.44 | 0.32 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.02 |
| | | NBL | A | A | 6 | 8 | 0.31 | 0.19 |
| | | NBT | A | A | 3 | 7 | 0.15 | 0.37 |
| | | NBR | A | A | 1 | 1 | 0.05 | 0.04 |
| | | SBL | A | A | 4 | 7 | 0.01 | 0.01 |
| | | SBT | A | A | 4 | 6 | 0.28 | 0.25 |
| | | SBR | A | A | 1 | 1 | 0.09 | 0.05 |

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #2** | **Overall** | **A** | **A** | **3** | **6** | **0.32** | **0.54** |
| | | EBL | D | D | 48 | 45 | 0.03 | 0.04 |
| | | EBTR | A | A | 1 | 1 | 0.11 | 0.15 |
| | | WBL | D | E | 55 | 63 | 0.23 | 0.54 |
| | | WBTR | A | A | 0 | 0 | 0.01 | 0.03 |
| | | NBL | A | A | 3 | 5 | 0.17 | 0.11 |
| | | NBT | A | A | 2 | 5 | 0.22 | 0.40 |
| | | NBR | A | A | 0 | 2 | 0.03 | 0.07 |
| | | SBL | A | A | 3 | 3 | 0.01 | 0.12 |
| | | SBT | A | A | 2 | 2 | 0.32 | 0.27 |
| | | SBR | A | A | 0 | 0 | 0.00 | 0.01 |
| **Airport Road & Full Moves Access** | **Signal Opt. #2** | **Overall** | **A** | **A** | **4** | **8** | **0.31** | **0.37** |
| | | EBLR | D | D | 47 | 54 | 0.15 | 0.35 |
| | | NBL | A | A | 6 | 7 | 0.06 | 0.03 |
| | | NBT | A | A | 5 | 8 | 0.14 | 0.37 |
| | | SBTR | A | A | 2 | 4 | 0.31 | 0.24 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

In comparison to 2038 future background conditions, the signalized study intersections are expected to continue operating efficiently at an unchanged LOS "D" or better with low-to-moderate control delays and v/c ratios. Accordingly, these metrics outline that the signalized intersections are not significantly impacted by the Proposed Development.

Unsignalized Intersections

**Table 40** details the 2038 future total traffic operations for the unsignalized study intersections.

**Table 40: 2038 Future Total Traffic Operations – Unsignalized Intersections**

| Intersection | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & North RIRO Access** | **Overall** | **B** | **B** | **12** | **10** | **0.35** | **0.32** |
| | EBR | B | B | 12 | 10 | 0.01 | 0.01 |
| | NBT | A | A | 0 | 0 | 0.12 | 0.32 |
| | SBTR | A | A | 0 | 0 | 0.35 | 0.23 |
| **Airport Road & South RIRO Access** | **Overall** | **B** | **A** | **10** | **10** | **0.34** | **0.31** |
| | EBR | B | A | 10 | 10 | 0.01 | 0.03 |
| | NBT | A | A | 0 | 0 | 0.12 | 0.31 |
| | SBTR | A | A | 0 | 0 | 0.34 | 0.23 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*
*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

The proposed right-in/right-out (RIRO) site accesses off Airport Road are expected to continue operating efficiently at a LOS "B" during the weekday a.m. and p.m. peak hours, with low control delays and v/c ratios.

Roundabout Intersections

**Table 41** details the 2038 future total traffic operations for the roundabout study intersections.

**Table 41: 2038 Future Total Traffic Operations – Roundabout Intersections**

| Intersection | Approach | LOS[1] | | Delay (s) | | v/c ratio[1] | | 95th %ile Queue[2] | |
|---|---|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & Old School Road/Healy Road** | **Overall** | **A** | **A** | **2** | **3** | **0.36** | **0.44** | **-** | **-** |
| | EB | A | A | 2 | 2 | 0.15 | 0.14 | ~1 | ~1 |
| | WB | A | A | 2 | 3 | 0.08 | 0.29 | ~1 | ~1 |
| | NB | A | A | 2 | 3 | 0.18 | 0.44 | ~1 | ~1 |
| | SB | A | A | 2 | 2 | 0.36 | 0.26 | ~1 | ~1 |

*Note 1: Ratio of flow to capacity (RFC). The overall RFC for roundabout intersections is the maximum approach RFC. All RFCs greater than 0.85 are outlined in red.*
*Note 2: 95th percentile queues are recorded in passenger car equivalents. Rounded to the nearest vehicle.*

The roundabout study intersection is expected to continue operating at an unchanged LOS "A" with low control delays and v/c ratios, in comparison to 2038 future background conditions. These metrics demonstrate that the intersection is anticipated to operate efficiently with reserve capacity to accommodate future growth.

### *7.4.4 Summary*

Overall, these metrics indicate that the site generated traffic is not expected to significantly impact the study road network. With the recommended improvements and signal optimizations, the proposed future intersections are expected to operate acceptably. Accordingly, the study road network can support the Proposed Development, with the above noted recommendations.

## 7.5 Queueing Assessment

Consistent with existing conditions, SimTraffic was used to assess the queues within the study road network. The 95th percentile queues were compared against the available storage length to determine if any queues are expected to extend beyond the auxiliary turn lanes. **Appendix F** contains the detailed queueing analysis worksheets.

### *7.5.1 2028 Horizon Year*

**Table 42** outlines the results of the 2028 future total queueing assessment.

**Table 42: 2028 Future Total Queueing Assessment**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| Mayfield Road & Airport Road | Signal Opt. #1 | EBL | 70 | 100 | 200 |
| | | WBL | 60 | 80 | 50 |
| | | WBTR | 80 | 100 | 70 |
| | | NBL | 155 | 135 | 95 |
| | | NBR | 25 | 50 | 60 |
| | | SBL | 50 | 75 | 100 |
| | | SBR | 35 | 75 | 105 |
| Old School Road & Healy Road | Signal Opt. #1 | NBR | 25 | 25 | 15 |
| | | SBR | 55 | 90 | 50 |
| Airport Road & Alban Road/12333 Airport Road Access | Signal Opt. #1 | EBL | 25 | 80 | 55[2] |
| | | WBR | 10 | 10 | 100 |
| | | NBL | 40 | 160 | 120 |
| | | NBR | 5 | 100 | 145 |
| | | SBL | 10 | 5 | 75 |
| | | SBR | 20 | 10 | 100 |
| Airport Road & Perdue Court/Davis Lane | Signal Opt. #1 | WBL | 30 | 35 | 30 |
| | | NBL | 30 | 40 | 70 |
| | | NBR | 5 | 15 | 65 |
| | | SBL | 10 | 20 | 70 |
| | | SBR | - | 10 | 60 |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Two-way left-turn lane.*

The following queues are expected to extend beyond the provided storage, however, the exceedance can be accommodated within the provided or recommended effective storage length, or two-way left-turn lane, as applicable:

- Airport Road & Old School Road/Healy Road (NBR)
- Airport Road & Alban Road/12333 Airport Road Access (EBL, NBL)
- Airport Road & Perdue Court/Davis Lane

The westbound left-turn queue at Mayfield Road & Airport Road is expected to extend beyond the provided storage length, however, the queue can be accommodated within the effective storage length as well as the painted median.

Consistent with 2028 future background conditions, the westbound through/right-turn queue is forecasted to extend beyond the available storage length. It is recommended that the Region continues to monitor the queues to determine if interim improvements are warranted, prior to the planned Mayfield Road widening.

Despite the extended queue for the northbound left-turn movement at Mayfield Road & Airport Road, the queue can be accommodated within the storage length recommended to support future background conditions.

The southbound right-turn lane at Airport Road & Old School Road/Healy Road is expected to extend beyond the provided storage length and taper, which is consistent with 2028 future background conditions. It is recommended that the Region continues to monitor the queues to determine if interim improvements are warranted, prior to the implementation for the planned roundabout.

### *7.5.2 2033 Horizon Year*

**Table 43** outlines the results of the 2033 future total queueing assessment.

**Table 43: 2033 Future Total Queueing Assessment**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| **Mayfield Road & Airport Road** | **Signal Opt. #2** | EBL | 90 | 245 | 200 |
| | | WBL | 40 | 40 | 165 |
| | | WBR | 25 | 25 | 60 |
| | | NBL | 175 | 205 | 95 |
| | | NBR | 30 | 100 | 60 |
| | | SBL | 45 | 80 | 100 |
| | | SBR | 40 | 55 | 105 |
| **Torbram Road & Old School Road** | **Signal Opt. #2** | NBL | 10 | 15 | 55[2] |
| | | SBL | 5 | - | 55 |
| **Airport Road & Alban Road/12333 Airport Road Access** | **Signal Opt. #2** | EBL | 20 | 50 | 55[3] |
| | | WBTR | 10 | 10 | 100 |
| | | NBL | 40 | 40 | 120 |
| | | NBR | 10 | 10 | 145 |
| | | SBL | 10 | 5 | 80[3] |
| | | SBR | 20 | 15 | 100 |
| **Airport Road & Perdue Court/Davis Lane** | **Signal Opt. #2** | WBL | 30 | 35 | 30 |
| | | NBL | 35 | 25 | 70 |
| | | NBR | 10 | 20 | 65 |
| | | SBL | 10 | 30 | 70 |
| | | SBR | 5 | 10 | 60 |
| **Airport Road & Full Moves Access** | **Signal Opt. #2** | NBL | 20 | 20 | 55[3] |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Assumed as no design drawings are currently available.*
*Note 3: Two-way left-turn lane.*

The queues for some movements are expected to extend beyond the storage length. However, these queues for the following movements and intersections can be accommodated within the provided taper length or two-way left-turn lane, accordingly:

- Mayfield Road & Airport Road (EBL)
- Airport Road & Perdue Court/Davis Lane (WBL)

Despite the extended queue for the northbound left-turn movement at Mayfield Road & Airport Road, the queue can be accommodated within the increased storage length recommended to support future background conditions.

The northbound right-turn queue at Mayfield Road & Airport Road is expected to extend beyond the provided storage and taper length. The Region can consider extending the provided storage length, which would require increasing the pavement width. Nevertheless, the anticipated queue is not expected to significantly impact the study road network nor extend to the upstream intersection. It is noted that no site generated trips are expected to make this northbound right-turn maneuver, therefore, the increased storage length will support background traffic volumes, while also benefitting future total traffic. This improvement may be

implemented as part of the build out of the undeveloped property located in the southeast corner of the intersection.

### *7.5.3 2038 Horizon Year*

**Table 44** outlines the results of the 2038 future total queueing assessment.

**Table 44: 2038 Future Total Queueing Assessment**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| Mayfield Road & Airport Road | Signal Opt. #2 | EBL | 125 | 285 | 200 |
| | | WBL | 40 | 40 | 165 |
| | | WBR | 20 | 25 | 60 |
| | | NBL | 160 | 200 | 95 |
| | | NBR | 25 | 55 | 60 |
| | | SBL | 50 | 75 | 100 |
| | | SBR | 45 | 65 | 105 |
| Torbram Road & Old School Road | Signal Opt. #2 | NBL | 10 | 15 | 55[2] |
| | | SBL | 10 | - | 55 |
| Airport Road & Alban Road/12333 Airport Road Access | Signal Opt. #2 | EBL | 25 | 55 | 55[3] |
| | | WBTR | 5 | 10 | 100 |
| | | NBL | 55 | 45 | 120 |
| | | NBR | 10 | 10 | 145 |
| | | SBL | 10 | 5 | 80[3] |
| | | SBR | 15 | 15 | 100 |
| Airport Road & Perdue Court/Davis Lane | Signal Opt. #2 | WBL | 25 | 35 | 30 |
| | | NBL | 35 | 30 | 70 |
| | | NBR | 10 | 15 | 65 |
| | | SBL | 10 | 25 | 70 |
| | | SBR | - | 10 | 60 |
| Airport Road & Full Moves Access | Signal Opt. #2 | NBL | 15 | 10 | 55[3] |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Assumed as no design drawings are currently available.*
*Note 3: Two-way left-turn lane.*

The westbound left-turn movement at Airport Road & Perdue Court/Davis Lane is expected to extend beyond the provided storage length. However, the queue can be accommodated within the provided taper length.

To accommodate the extended eastbound left-turn queue at Mayfield Road & Airport Road, an increase in storage length to 285 m is recommended. The increased storage length can be implemented by adjusting the planned concrete median.

While the extended queue for the northbound left-turn movement at Mayfield Road & Airport Road, the queue can be accommodated within the increased storage length recommended to support future background conditions.

### *7.5.4 Summary*

**Table 45** outlines the recommended auxiliary turn lane geometry based on the results of the queuing analysis above.

**Table 45: Future Total Recommended Auxiliary Turn Lane Geometry**

| Intersection | Movement | Horizon Year | Storage Length | | Improvement Type |
|---|---|---|---|---|---|
| | | | Planned | Recommended | |
| Mayfield Road & Airport Road | EBL | 2038 | 200 m | 285 m (+85 m) | Concrete Median Revision[1] |
| | NBR | 2033 | 60 m | 100 m (+40 m) | Future External Improvement[2] |

*Note 1: Potential implementation as part of Mayfield Road widening project.*
*Note 2: Potential implementation as part of the build out of the undeveloped property located in the southeast corner of the intersection.*

### 7.6 Recommendations Summary

**Table 46** summarizes the recommended future total improvements, which should be implemented in addition to the future background improvements outlined in **Table 28.**

**Table 46: Future Total Recommended Improvements**

| Location | Improvements |
|---|---|
| **2028 Future Total** | |
| Mayfield Road & Airport Road | Continue to monitor traffic operations and queues to determine if additional improvements are warranted, prior to Mayfield Road widening. |
| Airport Road & Old School Road/Healy Road | Continue to monitor traffic operations to determine if additional improvements are warranted. |
| **2033 Future Total** | |
| Mayfield Road & Airport Road | Extend existing NBR auxiliary turn lane (100 m). |
| **2038 Future Total** | |
| Mayfield Road & Airport Road | Extend planned EBL auxiliary turn lane (285 m). |

## 8.0 Site Accesses Sensitivity Analysis – 2044 Future Total

As requested by Town and Region staff, a sensitivity analysis was conducted for the 2044 horizon year to understand the operation of the proposed site accesses as well as any impact to the planned East-West Collector Road (herein referred to as E-W Collector Road), identified as part of the Town's Multi-Modal Transportation Master Plan (MMTMP) Addendum works. It is noted that the MMTMP Addendum is not finalized at the time of writing. Nevertheless, based on conversation with Town staff, it is understood that the E-W Collector Road will be located south of the Subject Lands with sufficient spacing from the proposed site accesses such that the

Region's intersection spacing requirements are met. Furthermore, it is assumed that the E-W Road will be built out by the 2041 horizon year at the earliest, in line with the Town and Region's major planning horizon as well as other capital improvements in the area.

Accordingly, the following intersections were reviewed as part of the sensitivity analysis for the 2044 future total horizon:

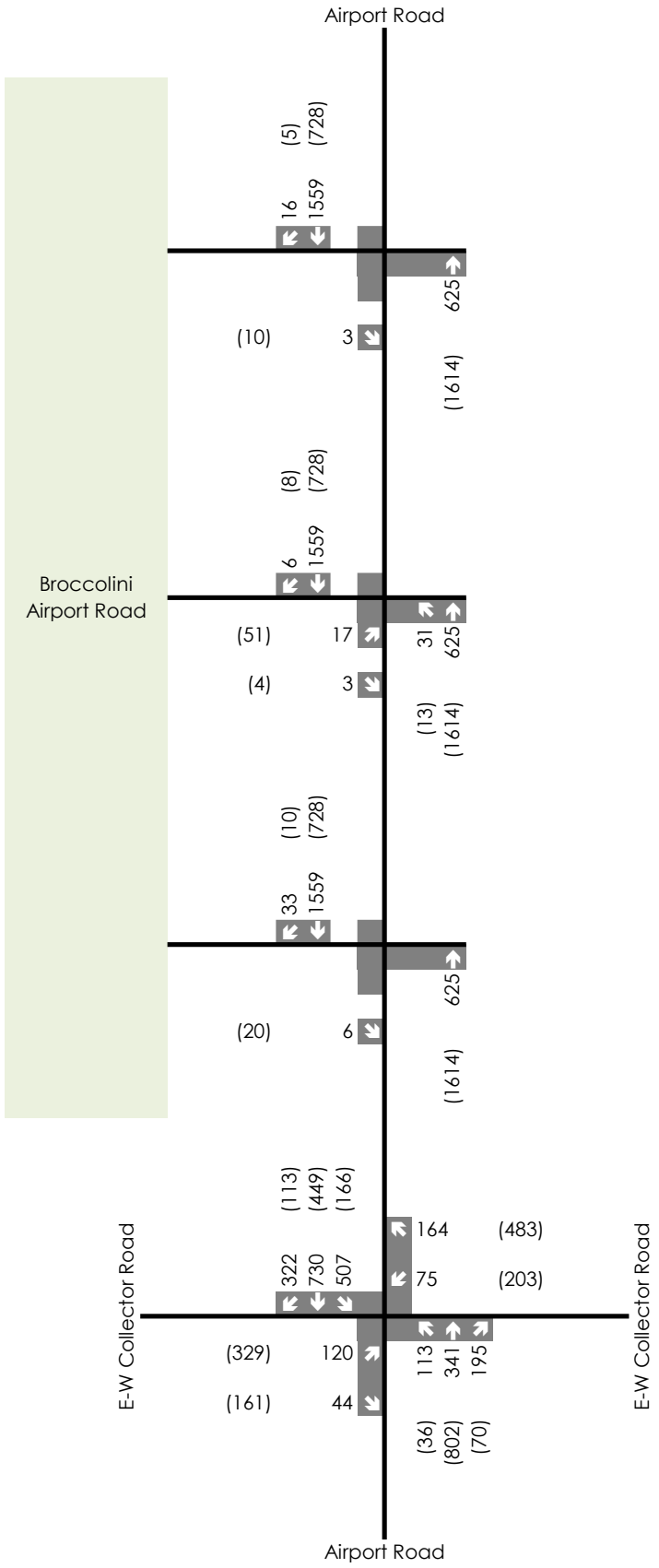
- Airport Road & North Right-In/Right-Out (RIRO) Site Access
- Airport Road & Full Moves Site Access
- Airport Road & South RIRO Site Access
- Airport Road & E-W Collector Road

### 8.1 2044 Future Total Traffic Volumes

For consistency, the 2044 future total traffic volumes outlined in the Tullamore Northwest Employment Area Secondary Plan Transportation Study (Crozier, May 2025) for the Airport Road & E-W Collector Road intersection was used herein. It is noted that the Airport Road & E-W Collector Road was previously identified as the Airport Road Connection in the Secondary Plan Transportation Study.

The resulting volumes north of Airport Road & E-W Collector Road were carried through the proposed site accesses as through volumes. We note that the 2044 future total volumes outlined in the Secondary Plan Transportation Study included traffic volumes associated with the entirety of the Tullamore Northwest Employment Area. For simplicity, these volumes were not removed when determining the through traffic volumes at the site accesses, despite the site generated traffic also being included in the turning movements. As a result, the 2044 future total traffic volumes at the proposed site accesses can be considered conservative.

**Figure 26** illustrates the 2044 future total sensitivity traffic volumes.




| Legend | Broccolini Airport Road | | Figure 26 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | **2044 Future Total Traffic Volumes (Sensitivity)** | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

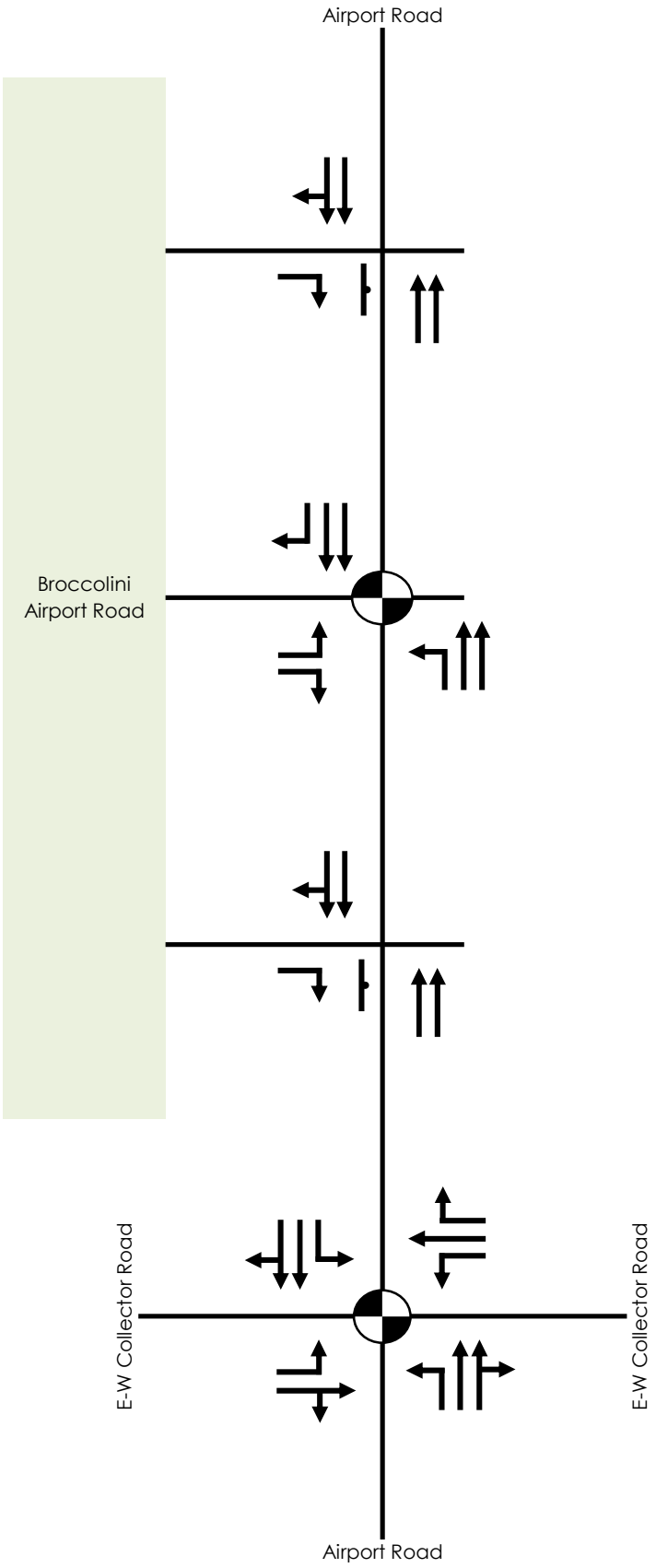
## 8.2 Traffic Modelling and Assumptions

The section herein outlines the traffic modelling and assumptions used in evaluating future total conditions. Unless otherwise noted, the future total traffic modelling and assumptions were maintained for the sensitivity analysis herein.

The signal timing plans were optimized for the 2044 horizon year (Signal Opt. #3), given the anticipated growth in background traffic.

The modelling includes updated heavy vehicle percentages that reflect the increased heavy vehicle traffic associated with the Subject Development.

As outlined in **Section 7.3.1**, auxiliary turn lanes were not modelled at Airport Road & Full Moves Access for the baseline future total conditions. Nevertheless, as discussed with Region staff, auxiliary turn lanes were modelled for the ultimate 2044 future total sensitivity conditions, to understand the requirements for auxiliary turn lane(s) in the long-term future. **Figure 27** illustrates the 2044 future total sensitivity study road network.




| Legend | Broccolini Airport Road | | Figure 27 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | **2044 Future Total Study Road Network (Sensitivity)** | CROZIER CONSULTING ENGINEERS | Project No. 2278-7228<br>Date: 11/13/25<br>Analyst: MY |

## 8.3 Intersection Operations

Signalized Intersections

**Table 47** details the 2044 future total sensitivity traffic operations for the signalized study intersections.

**Table 47: 2044 Future Total Traffic Operations – Signalized Intersections (Sensitivity)**

| Intersection | | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|---|
| | | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| Airport Road & E-W Road | Signal Opt. #3 | **Overall** | **B** | **C** | **18** | **30** | **0.80** | **0.91** |
| | | EBL | E | D | 62 | 45 | 0.67 | 0.79 |
| | | EBTR | A | A | 1 | 1 | 0.11 | 0.28 |
| | | WBL | D | C | 49 | 33 | 0.44 | 0.56 |
| | | WBT | A | A | 0 | 0 | 0.00 | 0.00 |
| | | WBR | A | D | 1 | 36 | 0.26 | 0.91 |
| | | NBL | D | C | 37 | 30 | 0.54 | 0.14 |
| | | NBTR | B | C | 18 | 33 | 0.37 | 0.63 |
| | | SBL | C | D | 25 | 36 | 0.80 | 0.63 |
| | | SBTR | A | B | 8 | 15 | 0.49 | 0.35 |
| Airport Road & Full Moves Access | Signal Opt. #3 | **Overall** | **A** | **A** | **4** | **6** | **0.53** | **0.57** |
| | | EBL | D | E | 52 | 56 | 0.12 | 0.32 |
| | | EBR | C | C | 33 | 31 | 0.03 | 0.05 |
| | | NBL | A | A | 4 | 4 | 0.13 | 0.03 |
| | | NBT | A | A | 2 | 5 | 0.22 | 0.57 |
| | | SBT | A | A | 4 | 4 | 0.53 | 0.28 |
| | | SBR | A | A | 2 | 2 | 0.01 | 0.01 |

*Note 1: The overall LOS and control delay of a signalized intersection is based on the average control delay per vehicle (Synchro).*

*Note 2: The overall v/c ratio for signalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

Airport Road & E-W Road and Airport Road & Full Moves Access are operating at a LOS "C" or better under 2044 future total conditions, with low to moderate control delays and acceptable v/c ratios. These metrics indicate that these intersections are operating efficiently with reserve capacity to accommodate future traffic growth.

Unsignalized Intersections

**Table 48** details the 2044 future total sensitivity traffic operations for the unsignalized study intersections.

**Table 48: 2044 Future Total Sensitivity Traffic Operations – Unsignalized Intersections (Sensitivity)**

| Intersection | Movement | LOS[1] | | Delay (s)[1] | | v/c ratio[2] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Airport Road & North RIRO Access** | **Overall** | **C** | **B** | **16** | **11** | **0.61** | **0.47** |
| | EBR | C | B | 16 | 11 | 0.01 | 0.02 |
| | NBT | A | A | 0 | 0 | 0.18 | 0.47 |
| | SBTR | A | A | 0 | 0 | 0.61 | 0.29 |
| **Airport Road & South RIRO Access** | **Overall** | **B** | **A** | **12** | **10** | **0.61** | **0.47** |
| | EBR | B | A | 12 | 10 | 0.01 | 0.03 |
| | NBT | A | A | 0 | 0 | 0.18 | 0.47 |
| | SBTR | A | A | 0 | 0 | 0.61 | 0.29 |

*Note 1: The overall LOS and control delay of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000). The overall LOS and control delay of an all-way stop-controlled intersection is based on the overall delay for the intersection (HCM 2010).*

*Note 2: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for through and shared through/turning movements as well as v/c ratios above 1.00 for exclusive movements are outlined in red text.*

Under 2044 future total conditions, the proposed RIRO site accesses off Airport Road is expected to operate efficiently at a LOS "C" with low control delays and low to moderate v/c ratios under weekday peak hours.

Summary

Overall, under 2044 future total conditions, the proposed site accesses off Airport Road and Airport Road & E-W Collector Road are operating efficiently with reserve capacity to accommodate future traffic growth. Accordingly, the Proposed Development is supportable from a transportation operations perspective.

## 8.4 Queueing Assessment

The intersection operations and queuing, included in **Section 7.0**, outlines that the proposed full moves access off Airport Road can operate acceptably without auxiliary southbound right-turn eastbound left-turn lanes. Nevertheless, for operational purposes it is understood that auxiliary southbound right-turn and eastbound left-turn lanes may be implemented given the high truck volumes expected. To confirm the required auxiliary turn lane storage lengths, an additional southbound right-turn lane at Airport Road & Full Moves Access was modelled for 2044 future total sensitivity conditions.

**Table 49** outlines the results of the 2044 future total sensitivity queueing assessment.

**Table 49: 2044 Future Total Queueing Assessment (Sensitivity)**

| Intersection | | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|---|
| | | | A.M. | P.M. | |
| Airport Road & E-W Collector Road | Signal Opt. #3 | EBL | 65 | 65 | 55[2] |
| | | WBL | 60 | 65 | 55[3] |
| | | WBR | 45 | 75 | 55[3] |
| | | NBL | 60 | 35 | 80[2] |
| | | SBL | 95 | 65 | 80[2] |
| Airport Road & Full Moves Access | Signal Opt. #3 | EBL | 15 | 25 | 15[4] |
| | | NBL | 20 | 10 | 55[2] |
| | | SBR | 5 | 10 | 30[4] |

*Note 1: Rounded up to the nearest 5 m.*
*Note 2: Two-way left-turn lane.*
*Note 3: Assumed as no details are currently available.*
*Note 4: Assumed to confirm storage length required.*

The following queues are expected to extend beyond the modelled storage length; however, the queue can be accommodated within the proposed two-way left turn lane:

- Airport Road & E-W Collector Road (EBL, SBL)

Based on the expected queues, storage lengths of 65 m and 75 m may be required for the westbound left-turn and right-turn at Airport Road & E-W Collector Road, respectively. The auxiliary turn lane requirements for the east approach of Airport Road & E-W Collector Road should be confirmed by the Town during the Detailed Design stage.

The northbound left-turn lane queues at Airport Road & Full Moves Access are not expected to impact the upstream Airport Road & E-W Collector Road intersection. Similarly, the queues expected for the southbound left-turn at Airport Road & E-W Collector Road are not expected to extend to the Airport Road & Full Move Access intersection. Moreover, the combined 95th percentile queue lengths between these intersections are 115 m, and with a proposed intersection spacing of 300 m, the future queues can be accommodated within the two-way left-turn lane. Accordingly, there are no queueing concerns associated with back-to-back left-turn lanes along the Subject Site's Airport Road frontage.

Overall, there are no major queueing concerns associated with the proposed site accesses under the 2044 future total horizon. Thus, the Proposed Development is supportable from this perspective.

## 9.0 Site Access Review

This section herein reviews the auxiliary turn lane requirements for the proposed site accesses as well as from an intersection sight distance and intersection spacing perspectives.

### 9.1 Auxiliary Turn-Lane Recommendations

Auxiliary turn-lane recommendations at the proposed site accesses off Airport Road were reviewed herein for pre- and post-Airport Road widening.

### *9.1.1 Ultimate 2044 Horizon*

Based on the queueing analysis outlined in **Section 8.4**, to support the proposed full moves access to Airport Road, the following auxiliary turn lane storage lengths should be provided:

- Airport Road & Full Moves Access (EBL): 25 m
- Airport Road & Full Moves Access (NBL): 30 m (within two-way left-turn lane, minimum per Region Standard 5-1-4)
- Airport Road & Full Moves Access (SBR): 30 m (minimum)

At the proposed right-in/right-out site accesses, auxiliary right-turn lanes along Airport Road were not modelled, and the intersections were found to operate acceptably without these auxiliary lanes. It is understood that the Region may still request the inclusion of auxiliary right-turn lanes at the site accesses. Accordingly, the following auxiliary turn lane storage lengths can be implemented, as requested by the Region:

- Airport Road & North RIRO Access (SBR): (minimum per Region Standard 5-1-4)
- Airport Road & South RIRO Access (SBR): 30 m (minimum per Region Standard 5-1-4)

Based on a review of the Site Plan and detailed design of Airport Road, as applicable, the storage lengths identified for the proposed site accesses can be accommodated.

### *9.1.2 Interim 2028 Horizon*

With the Airport Road widening planned by 2031, interim auxiliary turn lanes requirements for the 2028 horizon year were reviewed herein, despite the intersections operating acceptably without the provision of auxiliary turn lanes.

To avoid rework within the Subject Lands, a 25 m eastbound left-turn lane is recommended at Airport Road & Full Moves Access, consistent with the ultimate 2044 recommendation.

Based on the Ontario Ministry of Transportation's Traffic Signal Operating & Timing Policy (June 2016), the required auxiliary left-turn storage length at signalized intersections can be calculated based on the left-turning volumes expected as well as the cycle length. Thus, the following auxiliary left-turn lane storage lengths should be implemented:

- Airport Road & Full Moves Access (EBL): 25 m
- Airport Road & Full Moves Access (NBL): 30 m

For right-turn lanes at signalized intersections, Section 9.14 of TAC GDGCR outlines that the storage length should accommodate twice the average number of vehicles per cycle for design speeds greater than 60 km/h. Accordingly, a 15 m auxiliary right-turn lane can be considered for the southbound right-turn lane at Airport Road & Full Moves Access; however, if requested by the Region, a 30 m auxiliary southbound right-turn lane should be implemented, consistent with the Region's minimum storage length.

Consistent with post-Airport Road widening conditions, the following auxiliary turn lane storage lengths can be implemented, as requested by the Region:

- Airport Road & North RIRO Access (SBR): 30 m (minimum per Region Standard 5-1-4)
- Airport Road & South RIRO Access (SBR): 30 m (minimum per Region Standard 5-1-4)

**Appendix M** includes the auxiliary turn lane storage requirement excerpts.

### *9.1.3 Summary*

**Table 46** summarizes the recommended site access improvements.

**Table 50: Site Access Recommended Improvements**

| Location | Improvements |
|---|---|
| **2028 Future Total** | |
| Airport Road & North RIRO Access | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| Airport Road & Full Moves Access | Implement the following auxiliary turn lanes:<br>• EBL: 25 m<br>• NBL: 30 m (within two-way left-turn lane)<br>• SBR: 30 m (minimum per Region Standard 5-1-4) |
| Airport Road & South RIRO Access | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| **2033 Future Total** | |
| Airport Road & North RIRO Access[1] | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| Airport Road & Full Moves Access[1] | Implement the following auxiliary turn lanes:<br>• EBL: 25 m<br>• NBL: 30 m (within two-way left-turn lane, minimum per Region Standard 5-1-6)<br>• SBR: 30 m (minimum per Region Standard 5-1-4) |
| Airport Road & South RIRO Access[1] | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |

*Note 1: Recommended to support 2044 future total conditions, however, to be implemented by the 2033 future total horizon as part of the Airport Road widening works.*

## 9.2 Intersection Sight Distance

The available sightlines at the proposed site accesses were measured and compared to the standards set out in the TAC GDGCR (June 2017). The following cases were reviewed, as applicable:

- Case B: Intersections with Stop on the Minor Road
- Case D: Intersections with Traffic Signal Control
- Case F: Left-Turns from the Major Road

Sight distances were measured from the proposed site accesses using the following assumptions:

- A standard driver eye height of 1.08 m for a passenger car.
- A standard driver eye height of 2.30 m for a tractor trailer (Wb-20).
- An object height of 0.60 m.
- A 4.4 to 5.4 m setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

The design speed of a roadway is typically 10 km/h greater than the posted speed limit. The posted speed limit along Airport Road is 80 km/h; therefore, a design speed of 90 km/h was assumed for the sight distance analysis.

**Appendix M** includes the intersection sight distance requirement excerpts.

### *9.2.1 Unsignalized Accesses*

For the Case B: Intersections with Stop Control on the Minor Road and Case F: Left-Turns from the Major Road, intersection sight distance is calculated using Equation 9.9.1 per TAC GDGCR (June 2017) as outlined below:

$$ISD = 0.278 * V_{major} * t_g$$

Where:

ISD = Intersection Sight Distance
$V_{major}$ = design speed of roadway (km/h)
$t_g$ = assumed time gap for vehicles to turn from stop onto roadway (s)

The North and South RIRO Accesses will only be utilized by passenger vehicles on a daily basis; thus, the sight distance analysis was conducted using the base time gaps for a passenger vehicle.

**Table 51** outlines the sight distance assessment for the unsignalized accesses.

**Table 51: Sight Distance Assessment – Unsignalized Accesses**

| Access | North RIRO Access | South RIRO Access |
|---|---|---|
| **Maneuver** | **Right-Turn** | **Right-Turn** |
| Access Type | Right-In/Right-Out | Right-In/Right-Out |
| Intersection Control | Case B: Stop on Minor Road | Case B: Stop on Minor Road |
| Posted Speed Limit | 80 km/h | 80 km/h |
| Assumed Design Speed | 90 km/h | 90 km/h |
| Grade | Less than 3% | Less than 3% |
| Horizontal Alignment | Straight | Straight |
| Base Time Gap | 6.5 s | 6.5 s |
| Additional Time Gap | None | None |
| Sight Distance Required | 165 m | 165 m |
| Measured Sight Distance | 165+ m | 165+ m |
| Minimum Sight Distance Satisfied | Yes | Yes |

For the proposed unsignalized accesses off Airport Road, the minimum sight distance requirements are satisfied.

### *9.2.2 Signalized Access*

For Case D: Intersections with Traffic Signal Control, the following requirements must be met per TAC GDGCR (June 2017) Section 9.9.2.3:

- The first vehicle stopped at each approach must be visible to the driver of the first vehicle stopped on each of the other approaches.
- Left-turning vehicles must have sufficient sight distance to select gaps in oncoming traffic and complete left-turns (Case F: Left-Turns from the Major Road).
- Right-turning vehicles must have sufficient sight distance to select gaps in oncoming traffic and complete right-turns (Case B2: Right-Turn from the Minor Road).

The Full Moves Access will accommodate both passenger cars and heavy trucks. Accordingly, the sight distance analysis was conducted using the base time gap for a tractor trailer (Wb-20). For conservative analysis, the sight distance for the left-turn maneuver was evaluated for the 2033 horizon year, post the Airport Road widening. Accordingly, an additional time gap was applied to account for the additional opposing travel lane along Airport Road.

**Table 52** outlines the sight distance assessment of the signalized access.

**Table 52: Sight Distance Assessment – Signalized Accesses**

| Access | Full Moves Access | |
|---|---|---|
| **Maneuver** | **Left-Turn** | **Right-Turn** |
| Access Type | Full Moves | |
| Intersection Control | Case F: Left-Turn from Major Road | Case B2: Right-Turn from Minor Road |
| Posted Speed Limit | 80 km/h | |
| Assumed Design Speed | 90 km/h | |
| Grade | Less than 3% | |
| Horizontal Alignment | Straight | |
| Base Time Gap | 7.5 s | 10.5 s |
| Additional Time Gap | 0.7 s | None |
| Sight Distance Required | 210 m | 265 m |
| Measured Sight Distance | 210+ m | 265+ m |
| Minimum Sight Distance Satisfied | Yes | Yes |

For the proposed signalized access off Airport Road, the minimum sight distance requirements are satisfied.

#### *9.2.3 Summary*

In summary, the Proposed Development is supportable from a sight distance perspective, as the minimum requirements are satisfied at the 3 site accesses proposed off Airport Road.

### 9.3 Intersection Spacing

As part of the Subject Development, the site accesses are proposed off Airport Road. As a regional road, the intersection spacing requirements outlined in the Region of Peel's Road Characterization Study (May 2013) applies.

Airport Road, within the study area, is a suburban connector, which corresponds to the following minimum spacing requirements:

- Full Moves to Full Moves: 300 m
- Full Moves to Right-In/Right-Out: 75 m

**Table 53** summarizes the access spacing review.

**Table 53: Access Spacing Review**

| Site Access | Direction | Required | Provided | Satisfied? |
|---|---|---|---|---|
| North RIRO Access | North | 75 m | 603 m[1] | Yes |
| | South | | 142 m | Yes |
| Full Moves Access | North | | | |
| | South | | 176 m | Yes |
| South RIRO Access | North | | | |
| | South | | 118 m[2] | Yes |

*Note 1: Access spacing provided with adjacent intersection, Airport Road & Old School Road/Healy Road.*
*Note 2: Access spacing provided with future adjacent intersection, Airport Road & E-W Collector Road.*

The proposed accesses off Airport Road meet the minimum spacing requirements noted above. Therefore, the site accesses are supportable from an intersection spacing perspective. It is noted that Airport Road & Old School Road/Healy Road is planned to be converted to a roundabout. Accordingly, the location of the roundabout was measured using the detailed design drawing in relation to the existing property line along Airport Road

Furthermore, given the future E-W Collector Road, south of the Subject Lands, the intersection spacing between the proposed full moves access and the E-W Collector Road was also reviewed herein. Based on the preliminary alignment of the E-W Collector Road, as discussed with Town staff, the proposed full moves access is located 300 m from the E-W Collector Road. Accordingly, the full moves access is supportable from this perspective.

Overall, there are no spacing concerns expected for any of the proposed site accesses off Airport Road, and the Proposed Development is supportable from this perspective.

**Appendix M** includes the intersection spacing requirement excerpts. **Appendix N** includes the Proposed Access Spacing Diagrams.

## 10.0 Corridor Access Management Review

As requested by Region staff, access opportunities for adjacent parcels were reviewed to confirm that the Proposed Development would not preclude the future development of neighbouring parcels.

As discussed in **Section 9.3**, the Airport Road corridor is classified as a suburban connecter per the Region's Road Characterization Study. Accordingly, along Airport Road, accesses have minimum spacing requirements of 300 m for full moves intersections and 75 m for right-in/right-out intersections, measured from curb extension to curb extension.

The Corridor Access Management Diagram illustrates the potential access management opportunities for the properties north and south of the Subject Lands under future redevelopment scenarios, given the applicable spacing requirements. We note that the scope of this review was limited to lands that have frontage along Airport Road, between Old School Road and the future E-W Collector Road.

Given the available spacing, an additional full moves intersection is possible, between the Subject Lands and Airport Road & Old School Road/Healy Road. There is also the opportunity for multiple restricted movement accesses (e.g. right-in/right-out, left-in/right-in/right-out). It is noted that some of the lands north of the Subject Property have developable area west of the natural heritage area as well as Salt Creek. Accordingly, there may be access opportunities off the Ionic Drive extension, should the roadway extend to Old School Road. Furthermore, lands with frontage to Old School Road may also pursue access(es) off Old School Road, spacing permitted.

The properties south of the Subject Development will have full moves access opportunities to the future E-W Collector Road.

Overall, the Subject Development's proposed accesses do not preclude access to the neighbouring lands along Airport Road in the future as the lands redevelop.

**Appendix O** illustrates the Corridor Access Management Diagrams.

## 11.0 Vehicle Maneuverability Review

This section considers the internal vehicle maneuverability of the Subject Site to confirm vehicles can safely operate without conflicts or constraints. Vehicle Turning Diagrams were prepared using AutoTURN software.

The following design vehicles are expected to operate on site and are reviewed herein:

- Wb-20 Tractor Trailer Truck
- Region of Peel Fire Truck
- TAC p-car

**Appendix P** includes the Vehicle Turning Diagrams.

### 11.1 Heavy Vehicles

The Full Moves Access off Airport Road will service the heavy vehicle traffic. Analysis of vehicle turning movements indicate that there is sufficient space for a standard Wb-20 truck to maneuver in and out of the proposed Full Moves Access as well as in and out of the proposed loading spaces. Furthermore, with the desired security measures for the Subject Development, Wb-20 trucks can safely maneuver around the proposed guard house and through the attached gate.

It is noted that a detailed design for Airport Road & Full Moves Access will be required to confirm the curb geometry required to support safe Wb-20 maneuvering.

### 11.2 Emergency Vehicles

The Region of Peel Fire Truck can maneuver throughout the identified fire route as well as the proposed site accesses without issues.

### 11.3 Passenger Vehicles

Passenger vehicles can safely enter and exit the proposed site accesses without any conflicts. Furthermore, passenger vehicles can safely maneuver around the provided vehicle parking areas.

### 11.4 Summary

Overall, the Proposed Development is supportable from a vehicle maneuverability perspective.

## 12.0 Parking Review

The section herein reviews the parking requirements applicable to the Proposed Development, including the Town of Caledon's Zoning By-Law 2006-50 and Traffic By-Law 048-2024.

**Appendix Q** includes the relevant parking requirement excerpts.

### 12.1 Vehicle Parking

**Table 54** outlines the minimum parking requirements based on the Town of Caledon's Zoning By-Law 2006-50.

**Table 54: Town of Caledon Zoning By-Law 2006-50 Minimum Vehicle Parking Requirements**

| Building | Land Use | Statistic | Rate | Required | Proposed |
|---|---|---|---|---|---|
| Building A | Warehouse | 23,576 $m^2$ | 139 + 1/170 $m^2$ (>10,000 $m^2$) | 219 spaces | 128 spaces (-91 spaces) |
| Building B | Warehouse | 47,809 $m^2$ | 139 + 1/170 $m^2$ (>10,000 $m^2$) | 362 spaces | 206 spaces (-156 spaces) |
| **Total** | | | | **581 spaces** | **334 spaces (-247 spaces)** |

The Proposed Development is required to provide 581 parking spaces. The most recent Site Plan proposes 334 parking spaces; as such, a deficit of parking spaces is proposed.

#### *12.1.1 Vehicle Parking Justification*

A review of proposed development applications for industrial developments in the Town of Caledon was conducted to evaluate the adequacy of the proposed parking supply.

**Table 55** summarizes the proposed parking rates for industrial developments in the Town, as well as a comparison to the proposed parking supply.

**Table 55: Parking Approval and Proposal Trends in the Region of Peel**

| Site Location | Statistic | Rate | Status |
|---|---|---|---|
| Tullamore Lands (0 & 12245 Torbram Road) | 562,381 $m^2$ | 0.43 space/100 $m^2$ | Approved (MZO – O.Reg. 483/22)[1] |
| 0 & 12035 Dixie Road | 204,387 $m^2$ | 0.43 space/100 $m^2$ | Approved (MZO – O.Reg. 157/22)[1] |
| **Summary** | | | |
| Average | - | 0.43 space/100 $m^2$ | n/a |
| Broccolini Airport Road | 71,385 $m^2$ | 0.47 space/100 $m^2$ | Subject Development |

*Note 1: The Minister's Zoning Order (MZO) outlined a vehicle parking rate of 1 space/230 $m^2$ (0.43 space/100 $m^2$). It is noted that the Proposed Development may exceed the minimum parking requirement identified.*

The approved parking rates for industrial developments with similar transportation contexts in the Region of Peel results in an average parking rate of 0.43 space/unit. Thus, the proposed parking rate of 0.47 space/unit is supportable when considering the parking rates proposed and approved for similar industrial sites in the Town of Caledon.

**Appendix R** includes the parking approval and proposal trend excerpts.

### 12.2 Accessible Parking

The Town of Caledon Traffic By-Law 048-2024 identifies that accessible parking spaces shall be provided in accordance with Integrated Accessibility Standards O.Reg. 191/11. The accessible parking rates outlined are based on the vehicle parking proposed on site.

**Table 56** outlines the minimum accessible parking requirements.

**Table 56: Integrated Accessibility Standards O.Reg. 191/11 Accessible Parking Requirements**

| Building | Statistic | Rate[1] | Required | Proposed |
|---|---|---|---|---|
| Building A | 131 spaces | 1 + 3% of vehicle parking provided | 5 spaces | 5 spaces (+0 space) |
| Building B | 203 spaces | 2 + 2% of vehicle parking provided | 7 spaces | 7 spaces (+0 spaces) |
| **Total** | | | **12 spaces** | **12 spaces (+0 spaces)** |

As outlined above, the most recent Site Plan meets the accessible parking requirements outlined in the Integrated Accessibility Standards O.Reg. 191/11 for both industrial buildings proposed.

### 12.3 Bicycle Parking

The Town of Caledon Zoning By-Law 2006-50 does not include bicycle parking requirements; however, a bicycle parking policy is outlined within the Town of Caledon's Active Transportation

Master Plan (June 2024). As no warehouse or industrial requirements were outlined, the bicycle parking requirements were only reviewed for the proposed office space.

**Table 57** outlines the minimum bicycle parking requirements per the Town of Caledon's Active Transportation Master Plan.

**Table 57: Town of Caledon Active Transportation Master Plan Bicycle Parking Requirements**

| Building | Land Use | Statistic | Rate | Required | Proposed |
|---|---|---|---|---|---|
| Building A | Office[1] | 762 $m^2$ | 1 space/200 $m^2$ | 4 spaces | 4 spaces (+0 spaces) |
| Building B | Office[1] | 624 $m^2$ | 1 space/200 $m^2$ | 3 spaces | 4 spaces (+1 spaces) |
| **Total** | | | | **7 spaces** | **8 spaces (+1 spaces)** |

*Note 1: Office component of the Industrial Warehouse used to calculate bicycle parking requirements.*

The Subject Development proposes 8 bicycle parking spaces, which exceeds the requirements outlined in the Town of Caledon's Active Transportation Master Plan for the office component.

## 13.0 Loading Review

The Town's of Caledon's minimum loading requirements were reviewed to determine the adequacy of the proposed loading supply.

**Table 58** outlines the Town's Zoning By-Law 2006-50 minimum loading requirements.

**Table 58: Town of Caledon Zoning By-Law 2006-50 Minimum Loading Requirements**

| Building | Land Use | Statistic | Loading Rate | Loading Required | Loading Proposed |
|---|---|---|---|---|---|
| Building A | Warehouse | 23,576 $m^2$ | 3 + 1/9,300 $m^2$ (>7,441 $m^2$) | 5 spaces | 36 spaces (+31 spaces) |
| Building B | Warehouse | 47,809 $m^2$ | 3 + 1/9,300 $m^2$ (>7,441 $m^2$) | 8 spaces | 67 spaces (+59 spaces) |
| **Total** | | | | **13 spaces** | **103 spaces (+90 spaces)** |

As outlined in **Table 58**, the Town's Zoning By-Law 2006-50 requires the Proposed Development to provide a total of 13 loading spaces. The most recent Site Plan proposes 109 loading spaces for, which exceeds the Town's requirements.

**Appendix Q** includes the relevant loading requirement excerpts.

## 14.0 Transportation Demand Management Strategies

There are several opportunities for the development to promote TDM measures in support of reduced single-occupant vehicle (SOV) use. These site specific TDM measures are only recommended at this time and should be finalized upon occupancy of the buildings since some

components will require coordination by the tenant. **Table 59** outlines recommendations that are expected to reduce SOV trips and increase sustainable mode share.

**Table 59: Site Specific Transportation Demand Management Measures**

| Recommended TDM Measure | Implementation Summary | Responsibility |
|---|---|---|
| TDM Information Package | Upon and prior to employment, a TDM information package should be provided to new and future employees. Promotional material should also be readily available (and continuously updated) in area(s) central to all employees, such as a lunchroom or lobby to increase awareness of available alternate travel modes and reduce the barriers to adopting more sustainable travel behaviour. Such marketing allows employees to be aware of sustainable travel options, as well as updates in the transit and cycling infrastructures improvements of the area.<br><br>The TDM Information Package can comprise of:<br>• Active transportation network maps<br>• Transit maps and schedules<br>• Site specific TDM measures<br><br>Information on the future transit projects could be provided to increase awareness of pending mass transit opportunities, which can encourage employees to utilize alternative transportation methods. | Developer/ Tenant |
| Off-Peak Shift Changes | The future tenants are encouraged to have shift changes and primary vehicle-oriented activity to occur outside of peak hours, subject to operational requirements of the tenants. Deliveries, tractor trailer schedules, and shift changes occurring outside of peak periods will reduce the impact on peak hour congestion and travel time reliability, providing a benefit to the site's employees, site operations, and background traffic in the area. | Tenant to Consider |
| Pre-Loaded PRESTO Cards | One-time pre-loaded PRESTO cards are recommended to be provided by the employer for first time on-site employees to encourage transit use as the primary mode to and from the site. The value of each card will be determined at a later date through subsequent discussions with Town staff once adequate transit service is provided. | Tenant to Consider |

| Recommended TDM Measure | Implementation Summary | Responsibility |
|---|---|---|
| Secure and Excess Bicycle Parking Spaces | Safe and secure bicycle parking is proposed for the development. Access to safe and secure bicycle parking will increase confidence and reliability for prospective cyclists to cycle as their primary mode of transportation.<br><br>The provision of secure and excess bicycle parking spaces encourages bicycle use and provides employees with convenient and safe storage for frequent bicycle use. | Developer |
| Shower and Change Room Facilities | Amenities such as showers and change rooms are recommended to allow employees who use active transportation the ability to comfortably prepare for the workday. | Developer |
| Electric Vehicle Parking Spaces | 16 electric vehicle parking spaces are proposed in the most recent Site Plan. These parking spaces will be easily identifiable.<br><br>In providing electric vehicle parking spaces, employees and visitors who have an electric vehicle have the ability to charge their vehicles on-site. | Developer |
| Smart Commute | The future tenants are encouraged to join Smart Commute to support sustainable travel initiatives for employees.<br><br>Smart Commute works with employers to provide resources and tools that encourage commuters to utilize transportation alternatives. Smart Commute can assist in facilitating TDM strategies, including but not limited to:<br><br>• Carpool Ride-Matching Programs<br>• Emergency Ride Home Programs<br>• Discounted Transit Incentive Programs<br>• Walking and Cycling Programs<br>• Campaigns, Events and Promotions<br><br>Smart Commute presents a collaborative opportunity to reduce the proposed development's SOV trips and automobile dependency through various initiatives, infrastructure, and programs. | Tenant to Consider |

# 15.0 Conclusions & Recommendations

Broccolini Airport Road LP (Broccolini) retained C.F. Crozier & Associates (Crozier) to prepare a Transportation Impact Study in support the Zoning By-Law Amendment and Site Plan Application for the proposed industrial warehouse development fronting Airport in the Town of Caledon, Region of Peel. The Site Plan proposes 2 industrial warehouse buildings, with a total gross floor area of 71,385 $m^2$ and 3 site accesses off Airport Road. The Subject Lands are located within the Tullamore Northwest Employment Area Secondary Plan.

The purpose of the study is to evaluate the transportation-related impacts of the Proposed Development on the boundary road network and to recommend any required mitigation measures, if warranted. The analysis contained within this study has resulted in the key findings and recommendations outlined below.

## 15.1 Conclusions

The analyses contained within this report has resulted in the following key findings:

Existing Conditions

- The study road network is operating at a LOS "E" or better with lower to moderate control delays and volume-to-capacity (v/c) ratios. As such, these metrics indicate that the intersections are operating efficiently with reserve capacity for future growth.

- There are no major queueing concerns that are expected to cause significant impacts within the study area.

Future Background Conditions

- Future background traffic volumes were forecasted by application of corridor growth rates and inclusion of background development trip assignments as confirmed with the Region and Town during the terms of reference.

- While a traffic signal is not warranted for Airport Road & Perdue Court/Davis Lane, it is recommended that the intersection be signalized to support future background traffic operations.

- Under 2028 future background conditions, the signalized intersection of Airport Road & Old School Road/Healy Road is expected to operate at LOS "E" or better during the weekday peak hours with a maximum control delay and v/c ratio of 77 s and 1.13, respectively. The split signal timing plan contributes to the operational concerns expected, however, this split phasing increases the intersection safety due to the offset east and west approaches. Furthermore, the planned roundabout by 2031 is expected to mitigate these operational concerns noted.

- The remaining study intersections, under 2028 future background conditions, are expected to operate at a LOS "D" or better with low to moderate control delays and v/c ratios.

- Under 2033 and 2038 future background conditions, the study intersections are expected to operate acceptably at a LOS "D" or better during weekday peak periods, with low to moderate control delays and v/c ratios.

- The queues for the following movements are expected to exceed the effective storage length:
    - Mayfield Road & Airport Road (NBL)

Future Total Conditions

- The Proposed Development is expected to generate 110 and 117 two-way mode split adjusted vehicle trips during the weekday a.m. and p.m. peak hours, respectively. These trips consist of 15 and 23 two-way truck trips during the weekday a.m. and p.m. peak hours, respectively, as well as 95 and 94 two-way mode split adjusted passenger car trips during the weekday a.m. and p.m. peak hours, respectively.

- Under 2028 future total conditions, the intersection of Airport Road & Old School Road/Healy Road is expected to operate at a LOS "F", with a maximum increase in v/c ratio of 0.01. As outlined for future background conditions, these operations are impacted by the split phasing, which mitigates the offset east and west intersection approaches. Nevertheless, the planned roundabout by 2031 is expected to mitigate the expected operational concerns.

- The proposed site accesses are expected to operate efficiently at a LOS "B" or better under 2028, 2033 and 2038 future background conditions, with low control delays and v/c ratios.

- The remaining study intersections are expected to continue operating acceptably at a LOS "E" or better as well as low-to-moderate control delays and v/c ratios, for the 2028, 2033 and 2038 horizon years. These metrics indicated that the intersections are operating with reserve capacity to accommodate future traffic growth.

- The queues for the following movements are expected to exceed the effective storage length:
    - Mayfield Road & Airport Road (EBL, NBR)

- Overall, the site generated traffic is not expected to significantly impact the study road network, and the Proposed Development is supportable from a transportation operations and queueing perspective.

2044 Sensitivity Analysis – Site Accesses

- Under 2044 future total conditions, the proposed site accesses off Airport Road as well as Airport Road & E-W Collector Road are expected to operate at a LOS "C" or better during the weekday peak hours, with acceptable v/c ratios. Accordingly, the intersections are operating efficiently with reserve capacity to accommodate future traffic growth, and the Proposed Development is supportable from this perspective.

- There are no queueing concerns expected under 2044 future total conditions. Along Airport Road, there are no queueing issues anticipated associated with back-to-back left-turns along Airport Road, especially with regards to the intersection with E-W Collector Road.

Site Access Review

- To support the Subject Development, the following auxiliary turn lanes at the proposed site accesses should be implement, subject to confirmation with the Region:
    - Airport Road & North RIRO Access (SBR)
    - Airport Road & Full Moves Access (EBL, NBL, SBR)
    - Airport Road & South RIRO Access (SBR)
- The proposed site accesses off Airport Road meets the applicable sight distance requirements.
- The Region of Peel's intersection spacing requirements are met for the 3 site accesses proposed off Airport Road.

Corridor Access Management Review

- The available intersection spacing along Airport Road can support a full moves access between the Subject Lands and Old School Road. Restricted access(es) may also be supported along this frontage.
    - Several of these parcels have developable area west of the natural heritage system and Salt Creek, which allows for access opportunities via the potential future extension of Ionic Drive.
    - There may also be access opportunities along Old School Road for the lands with frontage to Old School Road.
- The lands south of the Proposed Development will have direct full moves access opportunities to the future E-W Collector Road.
- Overall, the proposed site accesses do not preclude access to the neighbouring lands along Airport Road once redevelopment is pursued.

Vehicle Maneuverability Review

- The Vehicle Turning Diagrams demonstrate that there are no vehicle maneuverability constraints expected within the Subject Development for heavy vehicles, emergency vehicles, and passenger vehicles.
    - It is noted that a detailed design for Airport Road & Full Moves Access will be required to confirm the curb geometry required to support safe heavy vehicle maneuvering.

Parking and Loading

- The Site Plan proposes 334 vehicle parking spaces, which is deficient to the Town of Caledon's vehicle parking requirements.
    - Approved vehicle parking rates for industrial developments with similar transportation contexts in the Town of Caledon propose an average parking

supply rate of 0.43 space/unit. Thus, the proposed parking rate of 0.47 space/unit is supportable when considering the parking rates proposed at similar sites.

- The Proposed Development meets the accessible parking, bicycle parking and loading requirements.

Transportation Demand Management Strategies

- Transportation Demand Management (TDM) strategies were identified and recommended to support the Subject Development.

### 15.2 Recommendations

**Table C1** summarizes the recommended improvements.

**Table C1: Recommended Improvements**

| Location | Improvement |
|---|---|
| **2028 Future Background** | |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (145 m). |
| | Monitor traffic operations and queues to determine if additional improvements are warranted, prior to Mayfield Road widening. |
| Airport Road & Old School Road/Helay Road | Monitor traffic operations and queues to determine if additional improvements are warranted, prior to implementation of a roundabout. |
| Airport Road & Perdue Court/Davis Lane | Implement signal control. |
| **2033 Future Background** | |
| Mayfield Road | Maintain schedule for planned road widening and associated improvements between Airport Road and Coleraine Drive. |
| Airport Road | Maintain schedule for planned road widening and associated improvements between Mayfield Road and King Street. |
| Torbram Road | Maintain schedule for planned road widening and urbanization between Mayfield Road and Old School Road. |
| Highway 413 | Maintain schedule for planned highway between Highway 401 to Highway 400. |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (190 m). |
| Airport Road & Old School Road/Healy Road | Maintain schedule for planned roundabout. |

| Location | Improvement |
|---|---|
| **2038 Future Background** | |
| Mayfield Road & Airport Road | Extend existing NBL auxiliary turn lane (225 m). |
| Torbram Road & Old School Road | Implement signal control. |
| **2028 Future Total** | |
| Mayfield Road & Airport Road | Continue to monitor traffic operations and queues to determine if additional improvements are warranted, prior to Mayfield Road widening. |
| Airport Road & Old School Road/Healy Road | Continue to monitor traffic operations to determine if additional improvements are warranted. |
| Airport Road & North RIRO Access | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| Airport Road & Full Moves Access | Implement the following auxiliary turn lanes:<br>• EBL: 25 m<br>• NBL: 30 m (within two-way left-turn lane)<br>• SBR: 30 m (minimum per Region Standard 5-1-4) |
| Airport Road & South RIRO Access | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| **2033 Future Total** | |
| Mayfield Road & Airport Road | Extend existing NBR auxiliary turn lane (100 m). |
| Airport Road & North RIRO Access[1] | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| Airport Road & Full Moves Access[1] | Implement the following auxiliary turn lanes:<br>• EBL: 25 m<br>• NBL: 30 m (within two-way left-turn lane, minimum per Region Standard 5-1-6)<br>• SBR: 30 m (minimum per Region Standard 5-1-4) |
| Airport Road & South RIRO Access[1] | Implement SBR auxiliary turn lane (30 m, minimum per Region Standard 5-1-4) |
| **2038 Future Total** | |
| Mayfield Road & Airport Road | Extend planned EBL auxiliary turn lane (285 m). |

| Location | Improvement |
|---|---|
| **Other Site-Specific Recommendations** | |
| Transportation Demand Management Measures | Implement the following site-specific transportation demand management measures recommended:<br>• TDM Information Package<br>• Off-Peak Shift Changes<br>• Pre-Loaded PRESTO Cards<br>• Secure and Excess Bicycle Parking Spaces<br>• Shower and Change Room Facilities<br>• Electric Vehicle Parking Spaces<br>• Smart Commute |

*Note 1: Recommended to support 2044 future total conditions, however, to be implemented by the 2033 future total horizon as part of the Airport Road widening works.*

In conclusion, the Proposed Development is supportable from the transportation operation, safety, site circulation, parking and loading perspectives. The analysis undertaken herein was prepared using the most recent Site Plan. Any minor changes to the Plan will not materially affect the conclusions contained within this report.

We trust that this review addresses any transportation-related concerns with the project. Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Respectfully submitted by,

**C.F. CROZIER & ASSOCIATES INC.**

My-Linh Yee, EIT
Engineering Intern, Transportation

**C.F. CROZIER & ASSOCIATES INC.**

Michael A. Linton, MASc., P.Eng., Associate
Senior Project Manager, Transportation

/MY

J:\2200\2278- Broccolini\7228 - Broccolini Secondary Plan\Reports\Transportation\2025.08.xx_ZBA & SPA TIS\2025.11.11_Broccolini Airport Road TIS.docx

# APPENDIX A:

## Correspondence

# MEMORANDUM

**Transportation Engineering**
**Public Works & Transportation Department**

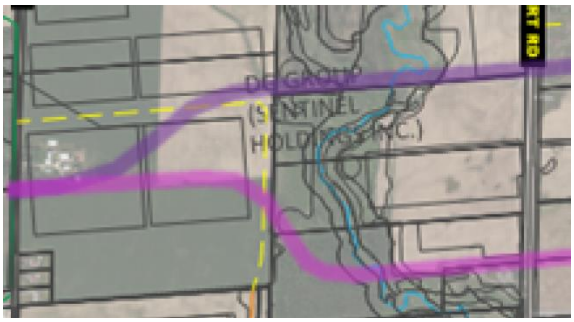
**Date:** October 6, 2025
**To:** Simone Foire, Senior Planner
Planning Development, Planning and Development
**From:** Emma Howlett, P.Eng., Transportation Coordinator
Engineering, Public Works, & Transportation Department
**Subject:** Terms of Reference – 0 Airport Road PRE 2025-0137

---

Transportation Engineering Staff have reviewed the submitted files. At a minimum, and in addition to the PARC comments provided by Town transportation staff, the applicant must adhere to the following requirements when preparing the Transportation Study:

1. **Applicable Guidelines**
   - Town of Caledon Multi-Modal Transportation Master Plan
   - Town of Caledon Active Transportation Master Plan
   - The TIS must follow the Region of Peel transportation Impact Study (TIS) Guidelines and Town of Caledon TIS Guidelines
   - Town of Caledon TIS Guidelines (available upon request)
2. **Traffic Data:**
   - Traffic Volumes: Turning movement counts should be dated no more than two (2) years from the time of study. If historical traffic volumes are to be considered, they must first be confirmed with the Town.
   - The applicant may contact trafficcalming@caledon.ca to confirm whether additional traffic data is available for use.
3. **General:**
   - The Town of Caledon defers to the Ministry of Transportation Ontario, and the Region of Peel with regard to roadways under their jurisdiction. Circulate the terms of reference to all applicable road authorities.
   - The study shall be signed and dated by a qualified Transportation Professional, such as Professional Engineers and Registered Professional Planners.
   - The study shall be completed in coordination with adjacent developments to ensure connectivity and continuity. Please note the Town is developing rapidly; therefore, it is essential to regularly check the Town of Caledon Development Applications webpage for updates.
4. **Study Area**: The Town requires that the minimum study area extend to the point where less than 5% of site-generated traffic is attributable to the proposed development. In addition to the currently proposed study intersections review:
   - Old School Road and Torbram Road
   - Internal intersections within Tullamore North Secondary Plan – September 2025 update - Official Plan Amendment 2025-0012:
     - Future collector road and Old School Road
     - Future collector road and Airport Road
     - Future collector road and Torbram Road

5. **Existing Conditions**: Provide a study area description including road network, traffic volumes, transit service, bicycle and pedestrian facilities, and traffic intersection operations.
6. **Existing Conditions Model Calibration**: Required if volume-to-capacity ratio exceeds 1.0 under existing conditions (e.g., saturation flow survey, gap survey, lost time adjustment survey). Calibration must not be used as a mitigation measure for future conditions.
7. **Network Context**: Include information on all nearby municipal, regional, and provincial roadways that will be impacted, including intersections and access points for adjacent developments.
8. **Study Assumptions**: Clearly identify the horizon years, analysis periods, traffic data collections, Synchro parameters, and development phasing.
9. **Horizon Years**: Confirm when and how phasing of the broader area shall be assessed. This impacts the horizon years required in the study. At a minimum an ultimate 15-year horizon year is required because the surrounding development full build out conditions will be significantly different than that of the 5-year horizon.
10. **Growth rates** shall be reviewed and updated to ensure that, when combined with background development traffic, the resulting volumes align closely with the MMTMP (Multi-Modal Transportation Master Plan) ultimate volumes outlined in the Appendix. Since developments east of Airport Road lack formal applications, their anticipated traffic contributions shall be incorporated into the assumed growth rates. Review, justify and adopt a more aggressive growth rate than the previously assumed 2% to reflect this.
11. **Background Developments**:
    The Mayfield-Tullamore Secondary Plan Transportation Study shall be included, this reflects the ultimate horizon year. Check the Town's website for updates as required Current Applications - Town of Caledon
12. **Roadway Improvements**:
    - Please see the MMTMP and Official Plan for Roadway Improvements to be considered in the final horizon. Further some development applications are proposed near the current development, it is possible that improvements have been identified within these studies review recommendations.
    - The Town of Caledon has retained HDR to complete a Multi-Modal Transportation Master Plan (MMTMP) update to review the need for continuous east-west collector roadways (for additional connectivity) within the study area. The Secondary Plan and Site Plan are to have regard for the findings of this process with respect to east-west collector roads.
    - In order to conform with overarching policy objectives, including the Town's Official Plan and the Multi-Modal Transportation Master Plan (MMTMP) and its Addendum, the Town requires the provision of additional collector roads to achieve a finer-grained road network and enhanced connectivity, notwithstanding the existing collector road framework. Specifically, an east- west collector road shall be provided in alignment with what is identified in the MMTMP as shown below by the light purple alignment.



See Also:

- Public Notice: Study Commencement and Public Consultation Centre - Addendum to the MMTMP
- Multi-Modal Transportation Master Plan Addendum | Have Your Say Town of Caledon
    - Preference is for the proposed development to access via a collector road, rather than directly from the arterial road.
    - Roadways proposed as part of the Secondary Plan should be incorporated into the development proposal. As noted in the Town's comments on the September 2025 Land Use Plan, clarification is on the alignment of proposed collector roadways is needed.

13. **Trip Generation Calculations**: May be based on ITE trip rates, proxy site surveys, etc.
    - Proxy sites must be similar in terms of land use, size, and neighborhoods characteristics, and must be confirmed with the **Town** prior to acceptance.
14. **Existing Site Trip Removal**: Should be based on surveyed traffic counts, previous traffic studies, or estimated trip generation.
15. **Trip Distribution:** Ensure impacts of the development of the surrounding area are considered (consider Emme Modeling). Trip Distribution must be justified (e.g., Transportation Tomorrow Survey (TTS) data for residential/commercial, marketing survey for specialty retail, or school catchment areas). Due to the ongoing development of the surrounding greenfield areas, the trip assignments for the initial and ultimate horizon years are expected to differ. Therefore, it is necessary to either justify the use of the most conservative trip distribution or develop separate distributions for each horizon year.
16. **Future Total Conditions with Development**:
    - **Traffic Control Warrants**: Conduct at study intersections in accordance with Ontario Traffic Manual (OTM) guidelines (e.g., traffic signal warrants, all-way stop warrants).
    - **Auxiliary Lane Warrants**: Conduct left-turn and right-turn lane warrants in accordance with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads and MTO Design Supplement Guidelines.
    - **Analysis**: Include vehicular trip generation, trip distribution, intersection operations, queuing analysis, and sightline analysis.
    - **Scenario Testing**: Where applicable, assess development phasing, and phasing of transportation infrastructure.

17. **Impacts and Mitigation Measures**
    - For any operations analysis showing critical volume-to-capacity ratios or queueing, provide appropriate mitigation measures.
    - For any queueing analysis showing queues extending beyond existing storage lengths (e.g., turn lanes) or spilling into upstream intersections, provide mitigation measures.
    - Assess the **site traffic impacts** of the proposed development on the surrounding road network.
    - Identify **mitigation measures** to address all transportation impacts.
18. **Multi-Modal Transportation Planning**
    - Connectivity: Ensure a high level of internal network connectivity and provide multiple route options for all transportation modes. Recommend improvements where necessary to enhance circulation and accessibility.
    - Transit Support: Plan for the integration of transit services, including improved first/last mile connections, to facilitate access between residential areas, employment areas, and key destinations.
    - Transit Implementation: Illustrate how the proposed development supports the implementation of transit services to meet mode share targets outlined in the Multi-Modal Transportation Master Plan and the Official Plan. This should include planning for specific transit routes and stop locations that serve the development effectively.
        - Existing Transit Services: For information on current transit routes, refer to Transit - Town of Caledon
        - Consider the applicability of private shuttle service to the nearest major transit stop, even as an interim measure.
19. **Pedestrian and Cyclist Circulation**
    - Mapping: Provide a comprehensive future active transportation network map as a standalone file to facilitate multidisciplinary review and coordination.
    - Connectivity: Identify all existing and planned pedestrian, cycling, and community facilities within the vicinity of the site. Demonstrate how the proposed development will connect to these facilities through active transportation infrastructure.
    - Trail Integration: Collaborate with the Town and relevant agencies to implement planned trails as identified in the Active Transportation Master Plan (ATMP). Further through this application, supplement the ATMP's 'Network Through this application, further supplement the ATMP's Network Recommendations by identifying opportunities for a local trail network within the development area, where appropriate and feasible. Ensure that proposed local trails are connected to the broader ATMP trail network where possible.
    - Right-of-Way Standards: All proposed public roadways must comply with the Town's standard Right-of-Way (ROW) infrastructure requirements, including provisions for off-road cycling facilities on collector and arterial roads. Reference the Town's Official Plan, Multi-Modal Transportation Master Plan, Active Transportation Master Plan, and Development Standards Manual for detailed guidance.

- Conflict Analysis and Intersection Design: Assess potential conflict points among vehicles, pedestrians, and cyclists based on anticipated desire lines, user volumes, and travel patterns. Consider the implementation of protected crossings.

**20. Reporting**

- Include Comprehensive Performance Metrics: Report queues, storage lengths, and volume-to-capacity ratios in tabular format by lane group, in addition to delay metrics.
- Apply Standardized Methodology: Follow the Highway Capacity Manual (HCM) guidelines for calculating and reporting Level of Service (LOS) and delay.
- Attach Terms of Reference (TOR): Append the TOR and all corresponding responses for reference.
- Provide Complete Supporting Documentation: Ensure all necessary materials are included in the appendix to allow full replication of results. This should include, but is not limited to:
    - Trip assignment figures for each background development
    - TTS data
    - Transportation Analysis Zones (if applicable)
    - Synchro lane volumes and timing sheets

**21. Pavement Markings and Signage Plan**

- A Pavement Markings and Signage Plan is required. Standard requirements include:
    - All traffic signage is to be installed as per the Ontario Traffic Manual and on streetlight posts where possible.
    - The plan should show all roadways, property lines driveways, fire hydrants, sidewalks, street lighting, traffic signage (including all regulatory, warning and information signs), street trees, tactile surfaces, and pavement markings.
    - The signage is to be aligned with the Town's Traffic By-Law, AODA, and HTA. Refer to Town's traffic by-law schedule P for fire Route Signage, and the relevant provincial legislation, including but not limited to, the Highway Traffic Act for accessible parking signage requirement.
    - The pavement markings and signage plan should be made note of in the Site Plan or Details.
    - PMSP to be submitted as separate stand-alone file.

Note that any Town approved Terms of Reference (ToR) shall remain valid until such time as the surrounding **transportation context changes**, at which point specific sections of the TIS may need to be updated in consultation with the Town and other relevant Transportation Agencies.

## My-Linh Yee

**From:** Shen, Yifan <yifan.shen@peelregion.ca>
**Sent:** October 6, 2025 2:10 PM
**To:** Mark Condello
**Cc:** My-Linh Yee; Emma Howlett; Xiao, Kaiwen; Michael Linton; Jessica Kwan; Tong Wang; Hamdani, Hashim; Ethan Bohnert; Michael Beach
**Subject:** RE: 0 Airport Road - Transportation Terms of Reference
**Attachments:** DE22032 - Industrial Development - Airport Rd - Option 3 - 20250721.pdf

Hi Mark,

Good afternoon, thank you for your email. Please be advised that Kaiwen if currently on vacation. During his absence, I will be handling this file until he is back. As such, please find my comments for the submitted Terms of Reference below:

Please see the traffic comments below and the link here for the detailed Region of Peel TIS formatting and contact information for background traffic (growth rate, AADT, signal timing, etc.).

- Regional Road 7 (Airport Road) – Suburban Connector

| Access Type | Minimum Spacing Requirement |
|---|---|
| Full to Full | 300 m |
| Full to RI/RO | 75 m |
| RI/RO to RI/RO | 75 m |

- Please review the Controlled Access By-law 62-2013, which speaks to the Road Characterization Study (RCS). The RCS defines our various road classifications as well as the minimum access spacing distances that are associated with them.
- AUTOturn analysis/turning templates for the largest vehicle type will be required for the proposed accesses onto Airport Road.
- Signal Warrant analyses may be required.
- Analysis Period - Acceptable.
- Intersections – Please include the intersection of Mayfield Road and Airport Road.
- Horizon Years - Please include a 10-year horizon period in addition to the 5- year horizon.
- Proxy Site - Minimum one proxy site should be considered and used in the TIS.
- Please see the following contacts to obtain data for your analysis:
    - Please contact transportationplanningdata@peelregion.ca to confirm growth rates along the subject Regional road(s).
    - Please contact Damian Jamroz (damian.jamroz@peelregion.ca) Supervisor of Traffic Operations to obtain the most recent TMCs and/or average annual daily traffic (AADT).
    - Please contact Samantha Bennett (samantha.bennett@peelregion.ca) Supervisor of Traffic Signals and Streetlighting, to obtain traffic signal timing parameters and ensure that the information includes the appropriate walk/don't walk splits, recall modes and offsets.

- Please contact your Local Municipality Planning Department to obtain details on surrounding developments in the area that would affect traffic capacity in the planning horizon year(s).

In regards to the requested meeting, please find my availability for this week below:

- Wednesday October 8th – 10am to 12pm / 2:30pm to 3:30pm
- Thursday October 9th – 10am to 12pm
- Friday October 10th – 9:30am to 12pm

Should you have any questions or concerns, please do not hesitate to let me know.

Warm regards,

**Yifan Shen**
Specialist, Transportation Development
Transportation Development
Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9

This email, including any attachments, is intended for the recipient specified in the message and may contain information which is confidential or privileged. Any unauthorized use or disclosure of this email is prohibited. If you are not the intended recipient or have received this e-mail in error, please notify the sender via return email and permanently delete all copies of the email. Thank you.

---

**From:** Mark Condello <MarkC@gsai.ca>
**Sent:** October 6, 2025 10:37 AM
**To:** My-Linh Yee <myee@cfcrozier.ca>; Emma Howlett <Emma.Howlett@caledon.ca>; Xiao, Kaiwen <kaiwen.xiao@peelregion.ca>
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Jessica Kwan <jessica.kwan@broccolini.com>; Tong Wang <Tong.Wang@caledon.ca>; Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>; Ethan Bohnert <ethanb@gsai.ca>; Michael Beach <michael.beach@broccolini.com>
**Subject:** RE: 0 Airport Road - Transportation Terms of Reference
**Importance:** High

Some people who received this message don't often get email from markc@gsai.ca. Learn why this is important

CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.

GSAI File No. 1517-001

Good Morning Emma and Kaiwen,

I trust you both have been keeping well.

I'm following up on My-Linh's email on the Terms of Reference (TOR) for 0 Airport Road (Town File No. PRE-2025-

0137). We are proceeding with advancing an application and would like to have this item addressed as soon as possible.

It may be helpful to bring all parties onto a call to discuss the TOR. Can we schedule a quick Teams call for this week? Please let me know which date and time work best for your schedule.

Thank you and talk soon.

Mark

**Mark Condello, MCIP, RPP | Senior Associate**
700 - 10 Kingsbridge Garden Circle
Mississauga, ON L5R 3K6
**T:** 905-568-8888 x265 | **F:** 905-568-8894
**C:** 905-746-6275
www.gsai.ca

GSAI
Glen Schnarr & Associates Inc.
*Connect with us:*

**Please do not feel obliged to reply to this email outside of your normal working hours.**

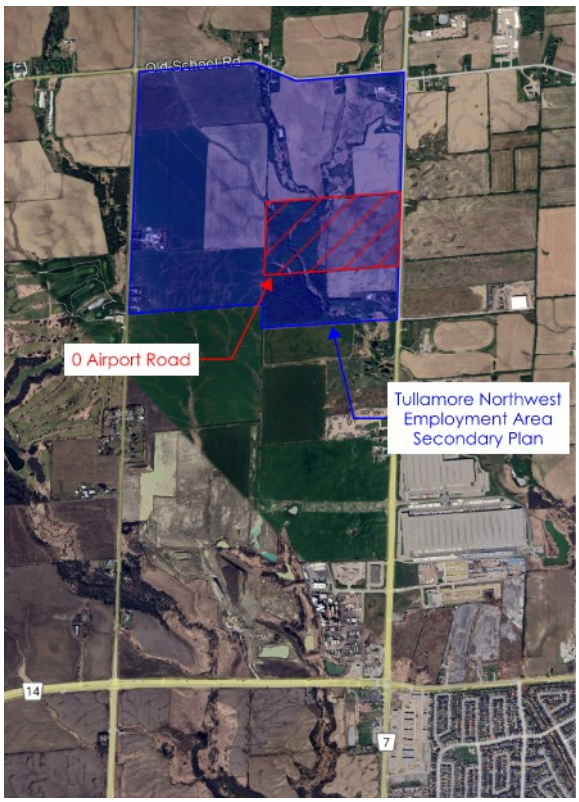
---

**From:** My-Linh Yee <myee@cfcrozier.ca>
**Sent:** September 11, 2025 3:16 PM
**To:** Emma Howlett <Emma.Howlett@caledon.ca>
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Jessica Kwan <jessica.kwan@broccolini.com>; Tong Wang <Tong.Wang@caledon.ca>; Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>; Xiao, Kaiwen <kaiwen.xiao@peelregion.ca>; Mark Condello <markc@gsai.ca>; Ethan Bohnert <ethanb@gsai.ca>
**Subject:** RE: 0 Airport Road - Transportation Terms of Reference

CAUTION: EXTERNAL MAIL. DO NOT CLICK ON LINKS OR OPEN ATTACHMENTS YOU DO NOT TRUST.

Hi Emma,

The file number is PRE 2025-0137 (and the lead planner is Simone Fiore). I have also attached the most recent Site Plan and included the location map below. Please let us know if you need any further information or have any questions.




Cheers,
My-Linh *[me/lin]*

**My-Linh Yee**, EIT
Engineering Intern, Transportation
Office: 905.876.7159
Collingwood | Milton | Toronto | Bradford | Guelph

**Learn how we've strengthened our position as a total build partner.**

CROZIER

This email was sent on behalf of C.F. Crozier & Associates Inc. and may contain confidential and/or privileged information for the sole use of the intended recipient. If you have received this email in error, please contact the sender and delete all copies. Any review or distribution by anyone other than the intended recipient is strictly prohibited.

**From:** Emma Howlett <Emma.Howlett@caledon.ca>
**Sent:** September 11, 2025 2:56 PM
**To:** My-Linh Yee <myee@cfcrozier.ca>
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Jessica Kwan <jessica.kwan@broccolini.com>; Tong Wang <Tong.Wang@caledon.ca>; Hamdani, Hashim <hashim.hamdani@peelregion.ca>
**Subject:** RE: 0 Airport Road - Transportation Terms of Reference

Hi My-Linh,

Does this application have a PRE number related to a PARC Application ? ( your lead planner should have this)

In order for me to complete the review of the TOR, provide an updated site plan and location map.

Best Regards,

**Emma Howlett, P.Eng.**
Transportation Coordinator
Engineering, Public Works, & Transportation Department
Office: 905.584.2272 | Email: Emma.Howlett@caledon.ca

**From:** My-Linh Yee <myee@cfcrozier.ca>
**Sent:** Thursday, September 11, 2025 2:39 PM
**To:** Emma Howlett <Emma.Howlett@caledon.ca>; Barnes, Catherine <catherine.barnes@peelregion.ca>
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Jessica Kwan <jessica.kwan@broccolini.com>
**Subject:** 0 Airport Road - Transportation Terms of Reference

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the contents to be safe.

Hi Emma, Catherine,

I hope you are doing well. Crozier has been retained to prepare a Transportation Impact Study in support of the Zoning By-Law Amendment and Site Plan Amendment applications for the proposed industrial development located at 0 Airport Road. It is noted that the Subject Site is located within the proposed Tullamore Northwest Employment Area Secondary Plan.

The Proposed Development includes 2 industrial buildings totalling approximately 70,000 $m^2$ (750,00 $ft^2$) and is expected to generate 128 and 136 two-way baseline vehicle trips during the weekday a.m. and p.m. peak hours trips, respectively. Accordingly, we proposed the following terms of reference:

Study Intersections

- Airport Road & Old School Road/Healy Road
- Airport Road & Perdue Court/Davis Lane
- Airport Road & 12333 Airport Road/Alban Road (Currently Under Construction)
- Proposed Access(es) off Airport Road

We note that Alban Road is currently under construction, therefore the intersection of Airport Road & 12333 Airport Road/Alban Road will be analyzed as a 3-legged intersection under existing conditions and 4-legged under future conditions.

Existing Traffic Data

- We proposed the use of existing TMCs conducted as part of the Secondary Plan Transportation Study on Wednesday, November 20, 2024.

- The existing traffic data will be grown to 2025 volumes using the agreed upon growth rates utilized in the Secondary Plan Transportation Study, which is as follows:
    - Airport Road: 1.5%
    - Old School Road: 2.0%
    - Healy Road: 2.0%
    - Perdue Court: 0.0%
    - Davis Lane: 0.0%

Existing Conditions

- The existing automobile traffic conditions will be analyzed based on new peak hour traffic counts using Synchro software and assessed level of service, control delay, and volume-to-capacity ratios (HCM 2000). Queue will also be assessed using SimTraffic.
- Weekday a.m. and p.m. peak periods (7:00 a.m. to 10:00 a.m. and 4:00 p.m. to 7:00 p.m.) will be assessed, reflective of peak commuter periods.

Study Horizon

- The study will review the existing (2025), anticipated buildout (2028) and five years post buildout (2033) study horizons. The study horizons are broadly consistent with Region of Peel requirements.

Growth Rates

- The corridor growth rates established in consultation with the Town and Region for the Secondary Plan Transportation Study will be applied to through movements only. The assumed growth rates are:
    - Airport Road: 1.0% (2025 to 2031), 0.5% (2031 to 2033)
    - Old School Road: 2.0% (2025 to 2033)
    - Healy Road: 2.0% (2025 to 2033)
    - Perdue Court: 0.0% (2025 to 2033)
    - Davis Lane: 0.0% (2025 to 2033)

Background Developments

- The following background developments are proposed:
    - Tullamore Industrial Business Park
    - 6034 Mayfield Road
    - Countryside Villages Block 48-2
        - Given that this Secondary Plan area is not built and previously was assumed to be built out by 2021, we have assumed that one-third (33%) of the development will be built out by 2028, and full buildout will occur by 2033 for the purpose of analysis.
    - 13846 & 13940 Airport Road
- We note that the Mayfield-Tullamore Secondary Plan Transportation Study (BA Group, August 2024) did not assign site-generated traffic volumes east of Airport Road. As such, the development is not expected to impact the proposed study area and will not be included as a background development.
- Currently, there are no active plans to develop the remaining lands within the Tullamore Northwest Employment Area Secondary Plan as well as the Town of Caledon Secondary Plan Area F2. Accordingly, these developments are not expected to be built out within the study horizon and are not included as background developments for trip assignment purposes.
- We also understand that a potential east-west collector through the Tullamore Northwest Employment Area Secondary Plan is proposed which will form an intersection with Airport Road north or south of the subject lands (final alignment to be determined). As the Subject Lands are the only lands proposed for development within the Secondary Plan area for the foreseeable future, it is assumed that this east-west

collector and its future intersection with Airport Road will be constructed beyond the study horizons. Operations as this future intersection have been and will continue to be addressed separately as part of the more comprehensive Tullamore Northwest Employment Area Secondary Plan Transportation Study.

Future Conditions

- The following infrastructure improvements are assumed for modelling purposes by the horizons noted:
    - Airport Road: Widening from 2 Lanes to 5 Lanes (4 travel lanes and a two-way left-turn lane) (by 2031)
    - Airport Road & Healy Road: Intersection Realignment and Roundabout (by 2031)
    - Highway 413: New Highway (by 2031, consistent with background planning studies)
- Trip Generation will be based on ITE Trip Generation Manual, 11th edition.
- Trip Distribution will be based on Transportation Tomorrow Survey data and/or existing travel patterns from similar developments (e.g. 12333 Airport Road), modified as required to account for new routes associated with the future Highway 413 interchange.
- Future background and future total conditions will be compared to identify if capacity and queuing issues are forecasted to occur and if mitigation measures are required at the existing or future intersections.
- Roundabout analysis will be conducted using ARCADY software.

Traffic Safety

- The available site distance at the proposed site access will be compared to standards set out by the Transportation Associates of Canada (TAC) Geometric Design Guide for Canadian Roads.
- The site accesses will also be reviewed to confirm it conforms to TAC and Region standards, as applicable.
- The supportability of site access locations and restrictions will be reviewed based on traffic operations and expected queue lengths, as well as applicable access spacing guidelines.

Site Circulation

- Vehicle Turning Diagrams will be provided for the following design vehicles:
    - Wb-20 Truck
    - TAC p-car
    - Caledon Fire Truck (Region of Peel Fire Truck maneuvering assumed to suffice)

Parking and Loading

- The vehicle parking and loading requirements will be evaluated based on the Town of Caledon Zoning By-Law 2006-50 and Traffic By-Law 2024-048, as applicable.
- Should a reduced vehicle parking supply be proposed, the parking supply will be justified using a review of recent approval and proposal trends for similar industrial warehouse developments within the Town of Caledon.
- The bicycle parking requirements will be evaluated for the office component of the Proposed Development based on the recommended rates outlined in the Town of Caledon Active Transportation Master Plan (June 2024).

TDM

- Transportation Demand Management (TDM) opportunities will be assessed, and site-specific measures for the development will be recommended to reduce single-occupancy vehicle (SOV) trips and promote sustainable transportation in line with the Town and Region's mode share targets. Opportunities to provide transit-supportive infrastructure will also be reviewed.

Cheers,
My-Linh *[me/lin]*

**My-Linh Yee**, EIT
Engineering Intern, Transportation
Office: 905.876.7159
Collingwood | Milton | Toronto | Bradford | Guelph

**Learn how we've strengthened our position as a total build partner.**

CROZIER

This email was sent on behalf of C.F. Crozier & Associates Inc. and may contain confidential and/or privileged information for the sole use of the intended recipient. If you have received this email in error, please contact the sender and delete all copies. Any review or distribution by anyone other than the intended recipient is strictly prohibited.

"This message (and any associated files) is intended only for the use of the individual or entity to which it is addressed. The content of the message is the property of the Corporation of the Town of Caledon. The message may contain information that is privileged, confidential, subject to copyright and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are notified that any dissemination, distribution, copying, or modification of this message is strictly prohibited. If you have received this message in error, please notify the sender immediately, advising of the error and delete this message without making a copy. (Information related to this email is automatically monitored and recorded and the content may be required to be disclosed by the Town to a third party in certain circumstances). Thank you."

## My-Linh Yee

**From:** My-Linh Yee
**Sent:** October 28, 2025 10:52 AM
**To:** Xiao, Kaiwen; Hamdani, Hashim; Emma Howlett; Tong Wang
**Cc:** Michael Linton; Mark Condello; Ethan Bohnert; Simone Fiore
**Subject:** RE: 0 Airport Road - Transportation Terms of Reference

Hi Emma, Tong, Hashim, and Kaiwen,

Thanks for taking the time to meet with us last week. I have included a summary of our discussion and the agreed upon approach for this Site-Specific Transportation Impact Study for the Broccolini Airport Road lands (0 Airport Road). We will:

- Review the 2038 future background and future total horizon (10-years post buildout) for the study road network.
    - Buildout of future background improvements and developments will be maintained, consistent with previous correspondence.
- Estimate the site generated trips using ITE Trip Generation Manual.
- Review the 2044 future total horizon (16-years post buildout, in line with the Secondary Plan Transportation Study) as a sensitivity analysis, which will only review the proposed site accesses off Airport Road as well as Airport Road & Future E-W Collector (located south of the Proposed Development).
    - This review will confirm turn lane geometry as well as confirm no back-to-back queueing concerns are present.
- Review access opportunities along Airport Road for other parcels in the Tullamore Northwest Employment Area, as a result of the proposed site accesses. We note that this will also be illustrated in the forthcoming Secondary Plan Transportation Study resubmission.

The following items will be reviewed, subject to confirmation by Emma/Tong:

- Based on the traffic volumes outlined in the previously submitted Secondary Plan Transportation Study, the applied 2% corridor growth rate (plus the applied background developments, including the Mayfield-Tullamore Secondary Plan and Secondary Plan Area F2) would result in 2051 traffic volumes above those noted in the Town of Caledon's 2051 EMME Model Volumes. Accordingly, the justification for the 2% growth rate will be included as part of the Secondary Plan Transportation Study resubmission.

As a reminder, the following items were included in the Secondary Plan Transportation Study (which will be updated as required as part of a resubmission) and will not be included in the Site-Specific Transportation Impact Study:

- Analysis of the Airport Road & Future E-W Road, Torbram Road & Future E-W Road, and Old School Road & Future N-S Road.
- Comprehensive review of the future active transportation network, including potential implementation opportunities for transit, pedestrian and cycling facilities.

Cheers,
My-Linh *[me/lin]*

**My-Linh Yee**, EIT
Engineering Intern, Transportation

Office: 905.876.7159
Collingwood | Milton | Toronto | Bradford | Guelph

**Proudly supporting our communities.**
**Click to learn more.**

CROZIER

This email was sent on behalf of C.F. Crozier & Associates Inc. and may contain confidential and/or privileged information for the sole use of the intended recipient. If you have received this email in error, please contact the sender and delete all copies. Any review or distribution by anyone other than the intended recipient is strictly prohibited.

**From:** Xiao, Kaiwen <kaiwen.xiao@peelregion.ca>
**Sent:** October 17, 2025 10:54 AM
**To:** My-Linh Yee <myee@cfcrozier.ca>; Shen, Yifan <yifan.shen@peelregion.ca>
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Mark Condello <markc@gsai.ca>; Tong Wang <Tong.Wang@caledon.ca>; Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>; Ethan Bohnert <ethanb@gsai.ca>; Simone Fiore <Simone.Fiore@caledon.ca>; Emma Howlett <Emma.Howlett@caledon.ca>
**Subject:** Re: 0 Airport Road - Transportation Terms of Reference

Good morning My-Linh,

Thank you for your assistance with the coordination

Our team would prefer to schedule the meeting for next Friday, October 24.

Thans again.

Best regards,
**Kaiwen Xiao**

Specialist, Transportation Development

Region of Peel working with you

Transportation Division, Public Works

10 Peel Centre Drive Suite B, 4th Floor

Brampton, ON L6T 4B9

This email, including any attachments, is intended for the recipient specified in the message and may contain information which is confidential or privileged. Any unauthorized use or disclosure of this email is prohibited. If you are not the intended recipient or have received this e-mail in error, please notify the sender via return email and permanently delete all copies of the email. Thank you.

---

**From:** My-Linh Yee <myee@cfcrozier.ca>
**Sent:** Thursday, October 16, 2025 4:31 PM
**To:** Shen, Yifan <yifan.shen@peelregion.ca>
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Mark Condello <markc@gsai.ca>; Tong Wang <Tong.Wang@caledon.ca>; Hamdani, Hashim <Hashim.Hamdani@peelregion.ca>; Ethan Bohnert

# APPENDIX B:

## Traffic Data

Spectrum

Turning Movement Count
Location Name: MAYFIELD & AIRPORT ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

## Turning Movement Count (1 . MAYFIELD & AIRPORT ROAD) CustID: 00717433 MioID: 1250745

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach MAYFIELD RD | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach MAYFIELD RD | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right N:W | Thru N:S | Left N:E | U-Turn N:N | Peds N: | Approach Total | Right E:N | Thru E:W | Left E:S | U-Turn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | Left S:W | U-Turn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | Left W:N | U-Turn W:W | Peds W: | Approach Total | | |
| 2024-11-20 07:00:00 | 34 | 67 | 8 | 0 | 0 | 109 | 8 | 98 | 17 | 0 | 1 | 123 | 16 | 42 | 28 | 0 | 0 | 86 | 103 | 143 | 46 | 0 | 0 | 292 | 610 | |
| 2024-11-20 07:15:00 | 27 | 130 | 13 | 1 | 4 | 171 | 6 | 105 | 24 | 0 | 3 | 135 | 15 | 40 | 38 | 0 | 0 | 93 | 84 | 144 | 37 | 0 | 0 | 265 | 664 | |
| 2024-11-20 07:30:00 | 27 | 139 | 11 | 0 | 4 | 177 | 5 | 86 | 21 | 0 | 8 | 112 | 13 | 50 | 41 | 0 | 1 | 104 | 79 | 164 | 30 | 0 | 1 | 273 | 666 | |
| 2024-11-20 07:45:00 | 23 | 120 | 12 | 0 | 1 | 155 | 12 | 90 | 10 | 1 | 2 | 113 | 17 | 57 | 55 | 0 | 0 | 129 | 101 | 151 | 51 | 0 | 0 | 303 | 700 | 2640 |
| 2024-11-20 08:00:00 | 34 | 73 | 19 | 0 | 1 | 126 | 9 | 94 | 23 | 0 | 5 | 126 | 17 | 41 | 41 | 0 | 2 | 99 | 101 | 168 | 41 | 0 | 2 | 310 | 661 | 2691 |
| 2024-11-20 08:15:00 | 23 | 129 | 12 | 0 | 2 | 164 | 17 | 121 | 21 | 0 | 4 | 159 | 25 | 52 | 46 | 0 | 3 | 123 | 84 | 142 | 43 | 0 | 1 | 269 | 715 | 2742 |
| 2024-11-20 08:30:00 | 26 | 100 | 25 | 0 | 1 | 151 | 12 | 109 | 24 | 0 | 1 | 145 | 23 | 45 | 42 | 0 | 4 | 110 | 94 | 161 | 28 | 0 | 2 | 283 | 689 | 2765 |
| 2024-11-20 08:45:00 | 21 | 93 | 14 | 0 | 0 | 128 | 9 | 108 | 20 | 0 | 1 | 137 | 19 | 44 | 37 | 1 | 4 | 101 | 76 | 148 | 44 | 0 | 3 | 268 | 634 | 2699 |
| 2024-11-20 09:00:00 | 34 | 102 | 18 | 2 | 0 | 156 | 9 | 108 | 13 | 0 | 0 | 130 | 20 | 56 | 33 | 0 | 1 | 109 | 56 | 125 | 38 | 0 | 0 | 219 | 614 | 2652 |
| 2024-11-20 09:15:00 | 33 | 89 | 18 | 0 | 1 | 140 | 11 | 97 | 16 | 0 | 2 | 124 | 17 | 19 | 29 | 0 | 4 | 65 | 50 | 110 | 32 | 0 | 2 | 192 | 521 | 2458 |
| 2024-11-20 09:30:00 | 28 | 77 | 17 | 0 | 2 | 122 | 5 | 108 | 20 | 0 | 4 | 133 | 9 | 28 | 24 | 0 | 0 | 61 | 46 | 103 | 31 | 0 | 4 | 180 | 496 | 2265 |
| 2024-11-20 09:45:00 | 30 | 56 | 15 | 0 | 0 | 101 | 11 | 100 | 20 | 0 | 0 | 131 | 9 | 31 | 26 | 0 | 1 | 66 | 47 | 124 | 32 | 0 | 3 | 203 | 501 | 2132 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024-11-20 16:00:00 | 56 | 62 | 19 | 0 | 0 | 137 | 15 | 157 | 27 | 0 | 1 | 199 | 23 | 108 | 60 | 0 | 1 | 191 | 41 | 127 | 33 | 0 | 0 | 201 | 728 | |
| 2024-11-20 16:15:00 | 56 | 62 | 17 | 0 | 0 | 135 | 8 | 180 | 19 | 0 | 5 | 207 | 16 | 124 | 52 | 0 | 5 | 192 | 55 | 133 | 35 | 0 | 4 | 223 | 757 | |
| 2024-11-20 16:30:00 | 67 | 69 | 23 | 0 | 4 | 159 | 15 | 146 | 22 | 0 | 9 | 183 | 25 | 111 | 55 | 0 | 3 | 191 | 47 | 136 | 41 | 0 | 3 | 224 | 757 | |
| 2024-11-20 16:45:00 | 53 | 66 | 20 | 1 | 0 | 140 | 13 | 156 | 24 | 0 | 9 | 193 | 27 | 143 | 73 | 0 | 2 | 243 | 15 | 108 | 39 | 0 | 0 | 162 | 738 | 2980 |
| 2024-11-20 17:00:00 | 42 | 63 | 27 | 0 | 2 | 132 | 7 | 154 | 17 | 0 | 4 | 178 | 29 | 106 | 48 | 0 | 0 | 183 | 28 | 135 | 36 | 0 | 0 | 199 | 692 | 2944 |
| 2024-11-20 17:15:00 | 54 | 67 | 8 | 1 | 1 | 130 | 5 | 155 | 16 | 0 | 2 | 176 | 20 | 90 | 59 | 0 | 4 | 169 | 53 | 177 | 44 | 0 | 3 | 274 | 749 | 2936 |
| 2024-11-20 17:30:00 | 46 | 73 | 15 | 0 | 1 | 134 | 9 | 178 | 20 | 0 | 2 | 207 | 17 | 110 | 66 | 0 | 0 | 193 | 49 | 151 | 31 | 0 | 0 | 231 | 765 | 2944 |
| 2024-11-20 17:45:00 | 49 | 67 | 12 | 0 | 0 | 128 | 10 | 170 | 20 | 0 | 0 | 200 | 14 | 74 | 70 | 0 | 1 | 158 | 52 | 164 | 32 | 0 | 4 | 248 | 734 | 2940 |
| 2024-11-20 18:00:00 | 43 | 66 | 11 | 0 | 0 | 120 | 6 | 144 | 18 | 0 | 5 | 168 | 36 | 73 | 65 | 0 | 0 | 174 | 54 | 140 | 26 | 0 | 2 | 220 | 682 | 2930 |
| 2024-11-20 18:15:00 | 40 | 48 | 10 | 0 | 0 | 98 | 2 | 130 | 17 | 0 | 0 | 149 | 20 | 91 | 95 | 0 | 0 | 206 | 49 | 154 | 33 | 0 | 0 | 236 | 689 | 2870 |
| 2024-11-20 18:30:00 | 40 | 43 | 9 | 2 | 2 | 94 | 6 | 158 | 25 | 0 | 2 | 189 | 17 | 81 | 70 | 0 | 0 | 168 | 45 | 115 | 30 | 0 | 0 | 190 | 641 | 2746 |
| 2024-11-20 18:45:00 | 37 | 49 | 9 | 0 | 0 | 95 | 6 | 122 | 22 | 0 | 1 | 150 | 31 | 60 | 69 | 0 | 0 | 160 | 41 | 113 | 25 | 0 | 0 | 179 | 584 | 2596 |
| **Grand Total** | 923 | 1910 | 362 | 7 | 26 | 3202 | 216 | 3074 | 476 | 1 | 71 | 3767 | 475 | 1676 | 1222 | 1 | 36 | 3374 | 1450 | 3336 | 858 | 0 | 34 | 5644 | **15987** | - |
| **Approach%** | 28.8% | 59.7% | 11.3% | 0.2% | | - | 5.7% | 81.6% | 12.6% | 0% | | - | 14.1% | 49.7% | 36.2% | 0% | | - | 25.7% | 59.1% | 15.2% | 0% | | - | - | - |
| **Totals %** | 5.8% | 11.9% | 2.3% | 0% | | 20% | 1.4% | 19.2% | 3% | 0% | | 23.6% | 3% | 10.5% | 7.6% | 0% | | 21.1% | 9.1% | 20.9% | 5.4% | 0% | | 35.3% | - | - |
| **Heavy** | 199 | 211 | 91 | 0 | | - | 100 | 316 | 122 | 0 | | - | 178 | 231 | 85 | 0 | | - | 83 | 343 | 233 | 0 | | - | - | - |
| **Heavy %** | 21.6% | 11% | 25.1% | 0% | | - | 46.3% | 10.3% | 25.6% | 0% | | - | 37.5% | 13.8% | 7% | 0% | | - | 5.7% | 10.3% | 27.2% | 0% | | - | - | - |
| **Bicycles** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:45 AM - 08:45 AM** **Weather: Overcast Clouds (7.52 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach MAYFIELD RD | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach MAYFIELD RD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 07:45:00 | 23 | 120 | 12 | 0 | 1 | 155 | 12 | 90 | 10 | 1 | 2 | 113 | 17 | 57 | 55 | 0 | 0 | 129 | 101 | 151 | 51 | 0 | 0 | 303 | 700 |
| 2024-11-20 08:00:00 | 34 | 73 | 19 | 0 | 1 | 126 | 9 | 94 | 23 | 0 | 5 | 126 | 17 | 41 | 41 | 0 | 2 | 99 | 101 | 168 | 41 | 0 | 2 | 310 | 661 |
| 2024-11-20 08:15:00 | 23 | 129 | 12 | 0 | 2 | 164 | 17 | 121 | 21 | 0 | 4 | 159 | 25 | 52 | 46 | 0 | 3 | 123 | 84 | 142 | 43 | 0 | 1 | 269 | 715 |
| 2024-11-20 08:30:00 | 26 | 100 | 25 | 0 | 1 | 151 | 12 | 109 | 24 | 0 | 1 | 145 | 23 | 45 | 42 | 0 | 4 | 110 | 94 | 161 | 28 | 0 | 2 | 283 | 689 |
| **Grand Total** | 106 | 422 | 68 | 0 | 5 | 596 | 50 | 414 | 78 | 1 | 12 | 543 | 82 | 195 | 184 | 0 | 9 | 461 | 380 | 622 | 163 | 0 | 5 | 1165 | **2765** |
| **Approach%** | 17.8% | 70.8% | 11.4% | 0% | | - | 9.2% | 76.2% | 14.4% | 0.2% | | - | 17.8% | 42.3% | 39.9% | 0% | | - | 32.6% | 53.4% | 14% | 0% | | - | **-** |
| **Totals %** | 3.8% | 15.3% | 2.5% | 0% | | 21.6% | 1.8% | 15% | 2.8% | 0% | | 19.6% | 3% | 7.1% | 6.7% | 0% | | 16.7% | 13.7% | 22.5% | 5.9% | 0% | | 42.1% | **-** |
| **PHF** | 0.78 | 0.82 | 0.68 | 0 | | 0.91 | 0.74 | 0.86 | 0.81 | 0.25 | | 0.85 | 0.82 | 0.86 | 0.84 | 0 | | 0.89 | 0.94 | 0.93 | 0.8 | 0 | | 0.94 | 0.97 |
| **Heavy** | 36 | 48 | 16 | 0 | | 100 | 20 | 59 | 25 | 0 | | 104 | 36 | 33 | 7 | 0 | | 76 | 23 | 44 | 33 | 0 | | 100 | 380 |
| **Heavy %** | 34% | 11.4% | 23.5% | 0% | | 16.8% | 40% | 14.3% | 32.1% | 0% | | 19.2% | 43.9% | 16.9% | 3.8% | 0% | | 16.5% | 6.1% | 7.1% | 20.2% | 0% | | 8.6% | 13.7% |
| **Lights** | 70 | 374 | 52 | 0 | | 496 | 30 | 355 | 53 | 1 | | 439 | 46 | 162 | 177 | 0 | | 385 | 357 | 578 | 130 | 0 | | 1065 | 2385 |
| **Lights %** | 66% | 88.6% | 76.5% | 0% | | 83.2% | 60% | 85.7% | 67.9% | 100% | | 80.8% | 56.1% | 83.1% | 96.2% | 0% | | 83.5% | 93.9% | 92.9% | 79.8% | 0% | | 91.4% | 86.3% |
| **Single-Unit Trucks** | 11 | 23 | 6 | 0 | | 40 | 8 | 23 | 9 | 0 | | 40 | 3 | 13 | 2 | 0 | | 18 | 8 | 14 | 12 | 0 | | 34 | 132 |
| **Single-Unit Trucks %** | 10.4% | 5.5% | 8.8% | 0% | | 6.7% | 16% | 5.6% | 11.5% | 0% | | 7.4% | 3.7% | 6.7% | 1.1% | 0% | | 3.9% | 2.1% | 2.3% | 7.4% | 0% | | 2.9% | 4.8% |
| **Buses** | 6 | 3 | 4 | 0 | | 13 | 7 | 3 | 2 | 0 | | 12 | 7 | 8 | 3 | 0 | | 18 | 7 | 5 | 14 | 0 | | 26 | 69 |
| **Buses %** | 5.7% | 0.7% | 5.9% | 0% | | 2.2% | 14% | 0.7% | 2.6% | 0% | | 2.2% | 8.5% | 4.1% | 1.6% | 0% | | 3.9% | 1.8% | 0.8% | 8.6% | 0% | | 2.2% | 2.5% |
| **Articulated Trucks** | 19 | 22 | 6 | 0 | | 47 | 5 | 33 | 14 | 0 | | 52 | 26 | 12 | 2 | 0 | | 40 | 8 | 25 | 7 | 0 | | 40 | 179 |
| **Articulated Trucks %** | 17.9% | 5.2% | 8.8% | 0% | | 7.9% | 10% | 8% | 17.9% | 0% | | 9.6% | 31.7% | 6.2% | 1.1% | 0% | | 8.7% | 2.1% | 4% | 4.3% | 0% | | 3.4% | 6.5% |
| **Pedestrians** | - | - | - | - | 5 | - | - | - | - | - | 12 | - | - | - | - | - | 9 | - | - | - | - | - | 5 | - | **-** |
| **Pedestrians%** | - | - | - | - | 16.1% | | - | - | - | - | 38.7% | | - | - | - | - | 29% | | - | - | - | - | 16.1% | | **-** |
| **Bicycles on Crosswalk** | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | **-** |
| **Bicycles on Crosswalk%** | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | **-** |

Spectrum

Turning Movement Count
Location Name: MAYFIELD & AIRPORT ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

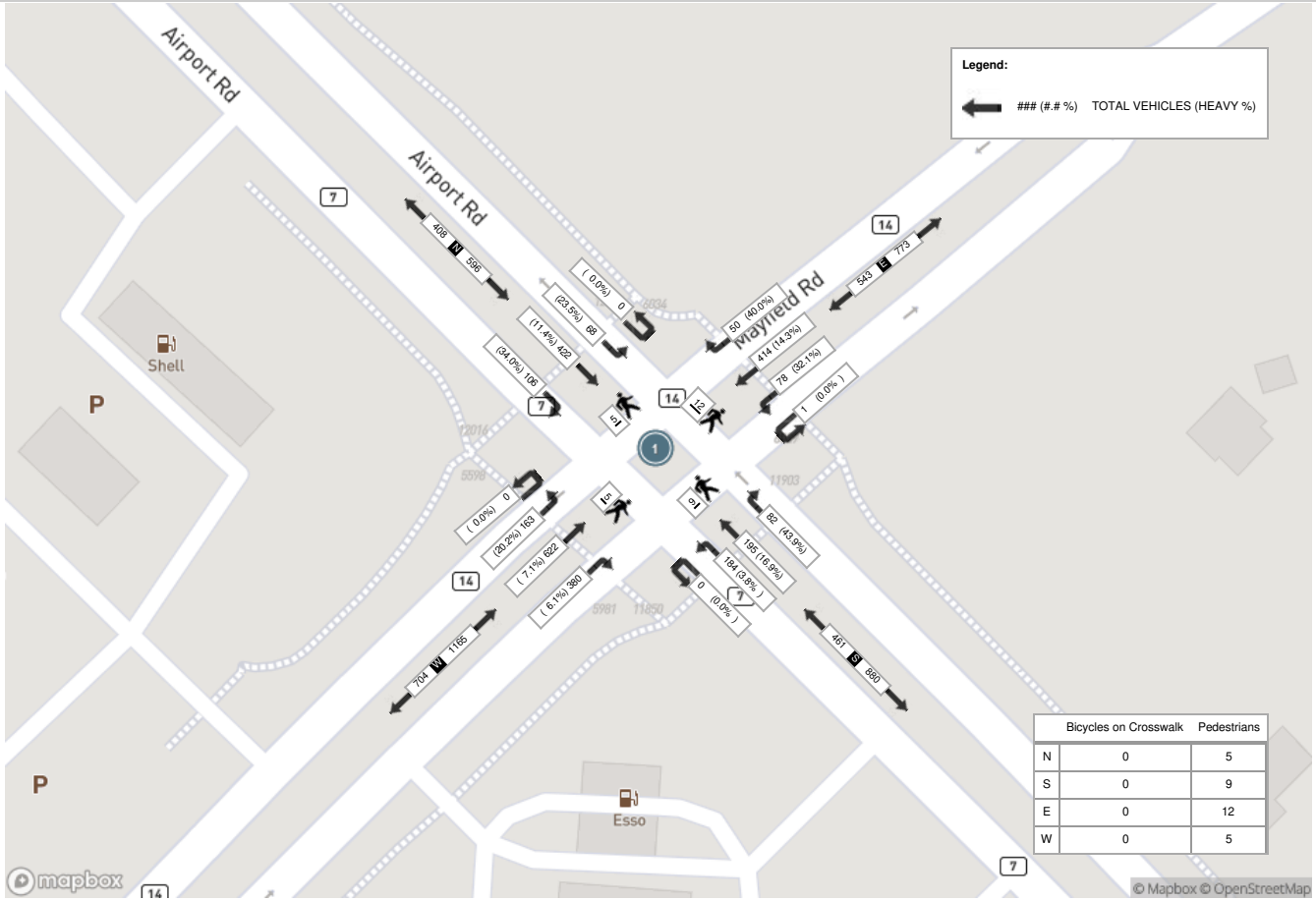
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:00 PM - 05:00 PM Weather: Mist (8.21 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach MAYFIELD RD | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach MAYFIELD RD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 16:00:00 | 56 | 62 | 19 | 0 | 0 | 137 | 15 | 157 | 27 | 0 | 1 | 199 | 23 | 108 | 60 | 0 | 1 | 191 | 41 | 127 | 33 | 0 | 0 | 201 | 728 |
| 2024-11-20 16:15:00 | 56 | 62 | 17 | 0 | 0 | 135 | 8 | 180 | 19 | 0 | 5 | 207 | 16 | 124 | 52 | 0 | 5 | 192 | 55 | 133 | 35 | 0 | 4 | 223 | 757 |
| 2024-11-20 16:30:00 | 67 | 69 | 23 | 0 | 4 | 159 | 15 | 146 | 22 | 0 | 9 | 183 | 25 | 111 | 55 | 0 | 3 | 191 | 47 | 136 | 41 | 0 | 3 | 224 | 757 |
| 2024-11-20 16:45:00 | 53 | 66 | 20 | 1 | 0 | 140 | 13 | 156 | 24 | 0 | 9 | 193 | 27 | 143 | 73 | 0 | 2 | 243 | 15 | 108 | 39 | 0 | 0 | 162 | 738 |
| **Grand Total** | 232 | 259 | 79 | 1 | 4 | 571 | 51 | 639 | 92 | 0 | 24 | 782 | 91 | 486 | 240 | 0 | 11 | 817 | 158 | 504 | 148 | 0 | 7 | 810 | **2980** |
| **Approach%** | 40.6% | 45.4% | 13.8% | 0.2% | | - | 6.5% | 81.7% | 11.8% | 0% | | - | 11.1% | 59.5% | 29.4% | 0% | | - | 19.5% | 62.2% | 18.3% | 0% | | - | **-** |
| **Totals %** | 7.8% | 8.7% | 2.7% | 0% | | 19.2% | 1.7% | 21.4% | 3.1% | 0% | | 26.2% | 3.1% | 16.3% | 8.1% | 0% | | 27.4% | 5.3% | 16.9% | 5% | 0% | | 27.2% | **-** |
| **PHF** | 0.87 | 0.94 | 0.86 | 0.25 | | 0.9 | 0.85 | 0.89 | 0.85 | 0 | | 0.94 | 0.84 | 0.85 | 0.82 | 0 | | 0.84 | 0.72 | 0.93 | 0.9 | 0 | | 0.9 | 0.98 |
| **Heavy** | 33 | 23 | 20 | 0 | | 76 | 29 | 37 | 19 | 0 | | 85 | 33 | 48 | 15 | 0 | | 96 | 8 | 75 | 44 | 0 | | 127 | 384 |
| **Heavy %** | 14.2% | 8.9% | 25.3% | 0% | | 13.3% | 56.9% | 5.8% | 20.7% | 0% | | 10.9% | 36.3% | 9.9% | 6.3% | 0% | | 11.8% | 5.1% | 14.9% | 29.7% | 0% | | 15.7% | 12.9% |
| **Lights** | 199 | 236 | 59 | 1 | | 495 | 22 | 602 | 73 | 0 | | 697 | 58 | 438 | 225 | 0 | | 721 | 150 | 429 | 104 | 0 | | 683 | 2596 |
| **Lights %** | 85.8% | 91.1% | 74.7% | 100% | | 86.7% | 43.1% | 94.2% | 79.3% | 0% | | 89.1% | 63.7% | 90.1% | 93.8% | 0% | | 88.2% | 94.9% | 85.1% | 70.3% | 0% | | 84.3% | 87.1% |
| **Single-Unit Trucks** | 13 | 13 | 9 | 0 | | 35 | 6 | 15 | 7 | 0 | | 28 | 6 | 13 | 10 | 0 | | 29 | 6 | 32 | 4 | 0 | | 42 | 134 |
| **Single-Unit Trucks %** | 5.6% | 5% | 11.4% | 0% | | 6.1% | 11.8% | 2.3% | 7.6% | 0% | | 3.6% | 6.6% | 2.7% | 4.2% | 0% | | 3.5% | 3.8% | 6.3% | 2.7% | 0% | | 5.2% | 4.5% |
| **Buses** | 3 | 2 | 1 | 0 | | 6 | 8 | 3 | 2 | 0 | | 13 | 6 | 21 | 0 | 0 | | 27 | 1 | 1 | 17 | 0 | | 19 | 65 |
| **Buses %** | 1.3% | 0.8% | 1.3% | 0% | | 1.1% | 15.7% | 0.5% | 2.2% | 0% | | 1.7% | 6.6% | 4.3% | 0% | 0% | | 3.3% | 0.6% | 0.2% | 11.5% | 0% | | 2.3% | 2.2% |
| **Articulated Trucks** | 17 | 8 | 10 | 0 | | 35 | 15 | 19 | 10 | 0 | | 44 | 21 | 14 | 5 | 0 | | 40 | 1 | 42 | 23 | 0 | | 66 | 185 |
| **Articulated Trucks %** | 7.3% | 3.1% | 12.7% | 0% | | 6.1% | 29.4% | 3% | 10.9% | 0% | | 5.6% | 23.1% | 2.9% | 2.1% | 0% | | 4.9% | 0.6% | 8.3% | 15.5% | 0% | | 8.1% | 6.2% |
| **Pedestrians** | - | - | - | - | 4 | - | - | - | - | - | 24 | - | - | - | - | - | 11 | - | - | - | - | - | 7 | - | **-** |
| **Pedestrians%** | - | - | - | - | 8.7% | | - | - | - | - | 52.2% | | - | - | - | - | 23.9% | | - | - | - | - | 15.2% | | **-** |
| **Bicycles on Crosswalk** | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | **-** |
| **Bicycles on Crosswalk%** | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | - | - | - | - | 0% | | **-** |

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:45 AM - 08:45 AM** **Weather: Overcast Clouds (7.52 °C)**

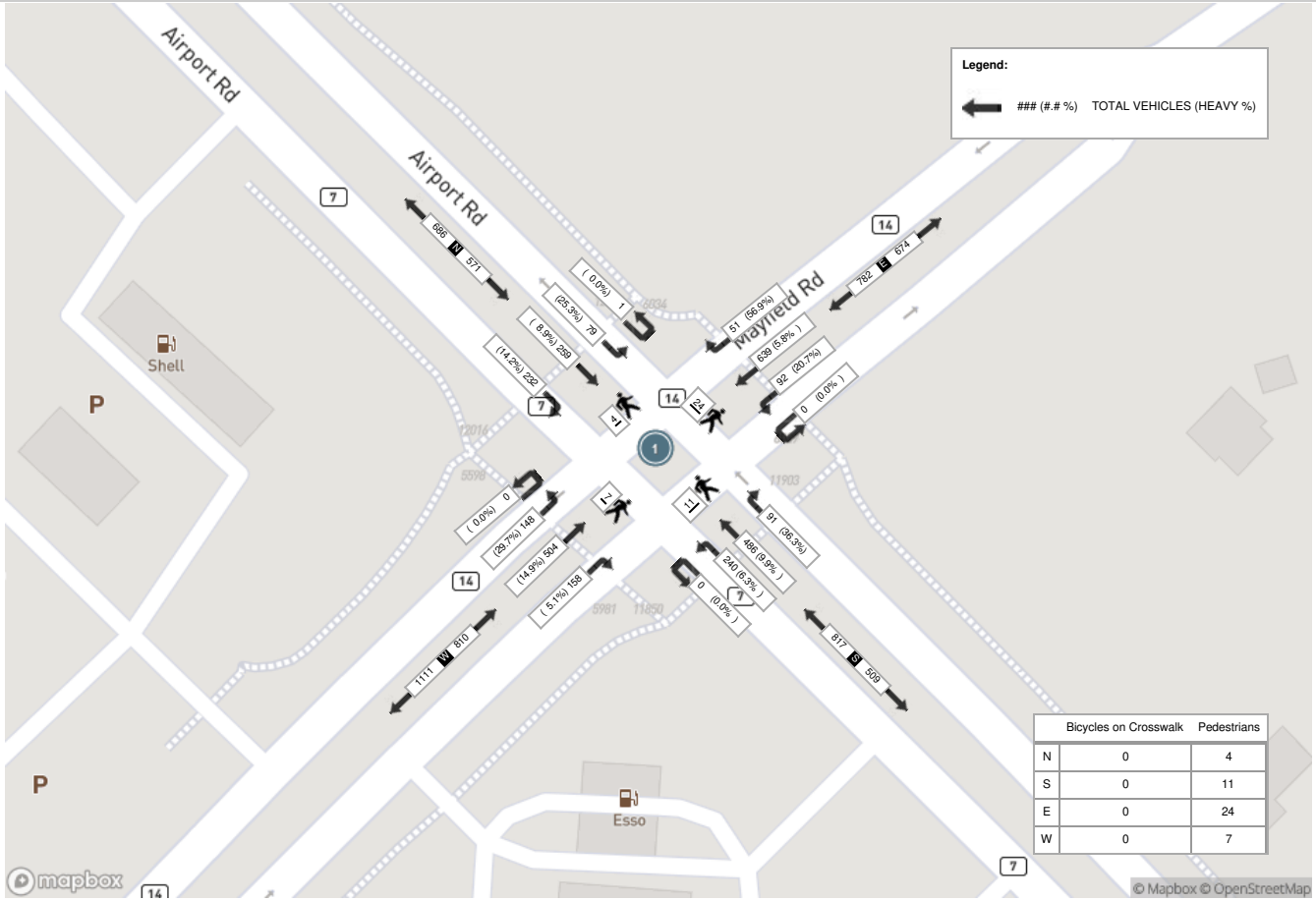


Spectrum

Turning Movement Count
Location Name: MAYFIELD & AIRPORT ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:00 PM - 05:00 PM** **Weather: Mist (8.21 °C)**



Spectrum

Turning Movement Count
Location Name: AIRPORT ROAD & OLD SCHOOL ROAD / HEALY ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

## Turning Movement Count (4 . AIRPORT ROAD & OLD SCHOOL ROAD / HEALY ROAD) MioID: 1250780

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach HEALY ROAD | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach OLD SCHOOL ROAD | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right N:W | Thru N:S | Left N:E | U-Turn N:N | Peds N: | Approach Total | Right E:N | Thru E:W | Left E:S | U-Turn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | Left S:W | U-Turn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | Left W:N | U-Turn W:W | Peds W: | Approach Total | | |
| 2024-11-20 07:00:00 | 1 | 92 | 1 | 0 | 0 | 94 | 1 | 16 | 7 | 0 | 0 | 24 | 33 | 37 | 2 | 0 | 0 | 72 | 1 | 31 | 6 | 0 | 0 | 38 | 228 | |
| 2024-11-20 07:15:00 | 3 | 129 | 3 | 0 | 0 | 135 | 1 | 25 | 11 | 0 | 0 | 37 | 27 | 33 | 1 | 0 | 0 | 61 | 7 | 32 | 2 | 0 | 0 | 41 | 274 | |
| 2024-11-20 07:30:00 | 1 | 118 | 5 | 0 | 0 | 124 | 1 | 18 | 13 | 0 | 0 | 32 | 31 | 30 | 1 | 0 | 0 | 62 | 12 | 50 | 1 | 0 | 0 | 63 | 281 | |
| 2024-11-20 07:45:00 | 1 | 100 | 3 | 0 | 0 | 104 | 1 | 20 | 13 | 0 | 0 | 34 | 22 | 48 | 3 | 0 | 0 | 73 | 9 | 45 | 5 | 0 | 0 | 59 | 270 | 1053 |
| 2024-11-20 08:00:00 | 6 | 90 | 1 | 0 | 0 | 97 | 0 | 16 | 13 | 0 | 0 | 29 | 19 | 25 | 3 | 0 | 0 | 47 | 11 | 40 | 2 | 0 | 0 | 53 | 226 | 1051 |
| 2024-11-20 08:15:00 | 2 | 118 | 2 | 0 | 0 | 122 | 3 | 15 | 11 | 0 | 0 | 29 | 13 | 37 | 0 | 0 | 0 | 50 | 8 | 38 | 6 | 0 | 0 | 52 | 253 | 1030 |
| 2024-11-20 08:30:00 | 1 | 99 | 4 | 0 | 0 | 104 | 1 | 13 | 16 | 0 | 0 | 30 | 11 | 48 | 2 | 0 | 0 | 61 | 11 | 47 | 4 | 0 | 0 | 62 | 257 | 1006 |
| 2024-11-20 08:45:00 | 0 | 75 | 4 | 0 | 0 | 79 | 1 | 11 | 12 | 0 | 0 | 24 | 13 | 36 | 0 | 0 | 0 | 49 | 10 | 38 | 2 | 0 | 0 | 50 | 202 | 938 |
| 2024-11-20 09:00:00 | 4 | 90 | 1 | 0 | 0 | 95 | 2 | 14 | 19 | 0 | 0 | 35 | 18 | 36 | 0 | 0 | 0 | 54 | 12 | 30 | 3 | 0 | 0 | 45 | 229 | 941 |
| 2024-11-20 09:15:00 | 7 | 78 | 2 | 0 | 0 | 87 | 1 | 7 | 12 | 0 | 0 | 20 | 4 | 33 | 1 | 0 | 0 | 38 | 4 | 20 | 2 | 0 | 0 | 26 | 171 | 859 |
| 2024-11-20 09:30:00 | 3 | 80 | 0 | 0 | 0 | 83 | 1 | 9 | 9 | 0 | 0 | 19 | 9 | 14 | 2 | 0 | 0 | 25 | 3 | 28 | 4 | 0 | 0 | 35 | 162 | 764 |
| 2024-11-20 09:45:00 | 4 | 49 | 1 | 0 | 0 | 54 | 0 | 8 | 11 | 0 | 0 | 19 | 10 | 35 | 3 | 0 | 0 | 48 | 6 | 18 | 3 | 0 | 0 | 27 | 148 | 710 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024-11-20 16:00:00 | 6 | 50 | 0 | 0 | 0 | 56 | 4 | 62 | 30 | 0 | 0 | 96 | 21 | 99 | 5 | 0 | 0 | 125 | 5 | 32 | 5 | 0 | 0 | 42 | 319 | |
| 2024-11-20 16:15:00 | 5 | 52 | 3 | 0 | 0 | 60 | 2 | 64 | 28 | 0 | 0 | 94 | 16 | 108 | 7 | 0 | 0 | 131 | 4 | 20 | 3 | 0 | 0 | 27 | 312 | |
| 2024-11-20 16:30:00 | 4 | 57 | 3 | 0 | 0 | 64 | 1 | 69 | 23 | 0 | 0 | 93 | 16 | 102 | 4 | 0 | 0 | 122 | 6 | 38 | 8 | 0 | 0 | 52 | 331 | |
| 2024-11-20 16:45:00 | 6 | 58 | 2 | 0 | 0 | 66 | 4 | 56 | 27 | 0 | 0 | 87 | 22 | 112 | 9 | 0 | 0 | 143 | 6 | 32 | 4 | 0 | 0 | 42 | 338 | 1300 |
| 2024-11-20 17:00:00 | 5 | 47 | 2 | 0 | 0 | 54 | 2 | 65 | 20 | 0 | 0 | 87 | 17 | 105 | 7 | 0 | 0 | 129 | 6 | 41 | 6 | 0 | 0 | 53 | 323 | 1304 |
| 2024-11-20 17:15:00 | 7 | 51 | 2 | 0 | 0 | 60 | 2 | 56 | 28 | 0 | 0 | 86 | 11 | 104 | 4 | 0 | 0 | 119 | 2 | 16 | 9 | 0 | 0 | 27 | 292 | 1284 |
| 2024-11-20 17:30:00 | 5 | 49 | 1 | 0 | 0 | 55 | 4 | 73 | 31 | 0 | 0 | 108 | 20 | 114 | 11 | 0 | 0 | 145 | 2 | 32 | 1 | 0 | 0 | 35 | 343 | 1296 |
| 2024-11-20 17:45:00 | 7 | 57 | 1 | 0 | 0 | 65 | 3 | 54 | 33 | 0 | 0 | 90 | 13 | 69 | 4 | 0 | 0 | 86 | 3 | 26 | 3 | 0 | 0 | 32 | 273 | 1231 |
| 2024-11-20 18:00:00 | 4 | 53 | 0 | 0 | 0 | 57 | 0 | 56 | 24 | 0 | 0 | 80 | 21 | 94 | 3 | 0 | 0 | 118 | 3 | 24 | 1 | 0 | 0 | 28 | 283 | 1191 |
| 2024-11-20 18:15:00 | 5 | 30 | 1 | 0 | 0 | 36 | 2 | 65 | 27 | 0 | 0 | 94 | 16 | 65 | 3 | 0 | 0 | 84 | 3 | 31 | 2 | 0 | 0 | 36 | 250 | 1149 |
| 2024-11-20 18:30:00 | 2 | 42 | 3 | 0 | 0 | 47 | 10 | 53 | 23 | 0 | 0 | 86 | 21 | 79 | 4 | 0 | 0 | 104 | 2 | 13 | 0 | 0 | 0 | 15 | 252 | 1058 |
| 2024-11-20 18:45:00 | 8 | 33 | 2 | 0 | 0 | 43 | 0 | 34 | 19 | 0 | 0 | 53 | 6 | 72 | 4 | 0 | 0 | 82 | 4 | 15 | 1 | 0 | 0 | 20 | 198 | 983 |
| **Grand Total** | 97 | 1697 | 47 | 0 | 0 | 1841 | 47 | 879 | 460 | 0 | 0 | 1386 | 410 | 1535 | 83 | 0 | 0 | 2028 | 140 | 737 | 83 | 0 | 0 | 960 | **6215** | - |
| **Approach%** | 5.3% | 92.2% | 2.6% | 0% | | - | 3.4% | 63.4% | 33.2% | 0% | | - | 20.2% | 75.7% | 4.1% | 0% | | - | 14.6% | 76.8% | 8.6% | 0% | | - | **-** | - |
| **Totals %** | 1.6% | 27.3% | 0.8% | 0% | | 29.6% | 0.8% | 14.1% | 7.4% | 0% | | 22.3% | 6.6% | 24.7% | 1.3% | 0% | | 32.6% | 2.3% | 11.9% | 1.3% | 0% | | 15.4% | **-** | - |
| **Heavy** | 2 | 262 | 9 | 0 | | - | 6 | 15 | 35 | 0 | | - | 29 | 158 | 7 | 0 | | - | 10 | 11 | 7 | 0 | | - | **-** | - |
| **Heavy %** | 2.1% | 15.4% | 19.1% | 0% | | - | 12.8% | 1.7% | 7.6% | 0% | | - | 7.1% | 10.3% | 8.4% | 0% | | - | 7.1% | 1.5% | 8.4% | 0% | | - | **-** | - |
| **Bicycles** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | **-** | - |
| **Bicycle %** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | **-** | - |

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:00 AM - 08:00 AM Weather: Overcast Clouds (7.52 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach HEALY ROAD | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach OLD SCHOOL ROAD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 07:00:00 | 1 | 92 | 1 | 0 | 0 | 94 | 1 | 16 | 7 | 0 | 0 | 24 | 33 | 37 | 2 | 0 | 0 | 72 | 1 | 31 | 6 | 0 | 0 | 38 | 228 |
| 2024-11-20 07:15:00 | 3 | 129 | 3 | 0 | 0 | 135 | 1 | 25 | 11 | 0 | 0 | 37 | 27 | 33 | 1 | 0 | 0 | 61 | 7 | 32 | 2 | 0 | 0 | 41 | 274 |
| 2024-11-20 07:30:00 | 1 | 118 | 5 | 0 | 0 | 124 | 1 | 18 | 13 | 0 | 0 | 32 | 31 | 30 | 1 | 0 | 0 | 62 | 12 | 50 | 1 | 0 | 0 | 63 | 281 |
| 2024-11-20 07:45:00 | 1 | 100 | 3 | 0 | 0 | 104 | 1 | 20 | 13 | 0 | 0 | 34 | 22 | 48 | 3 | 0 | 0 | 73 | 9 | 45 | 5 | 0 | 0 | 59 | 270 |
| **Grand Total** | 6 | 439 | 12 | 0 | 0 | 457 | 4 | 79 | 44 | 0 | 0 | 127 | 113 | 148 | 7 | 0 | 0 | 268 | 29 | 158 | 14 | 0 | 0 | 201 | **1053** |
| **Approach%** | 1.3% | 96.1% | 2.6% | 0% | | - | 3.1% | 62.2% | 34.6% | 0% | | - | 42.2% | 55.2% | 2.6% | 0% | | - | 14.4% | 78.6% | 7% | 0% | | - | **-** |
| **Totals %** | 0.6% | 41.7% | 1.1% | 0% | | 43.4% | 0.4% | 7.5% | 4.2% | 0% | | 12.1% | 10.7% | 14.1% | 0.7% | 0% | | 25.5% | 2.8% | 15% | 1.3% | 0% | | 19.1% | **-** |
| **PHF** | 0.5 | 0.85 | 0.6 | 0 | | 0.85 | 1 | 0.79 | 0.85 | 0 | | 0.86 | 0.86 | 0.77 | 0.58 | 0 | | 0.92 | 0.6 | 0.79 | 0.58 | 0 | | 0.8 | 0.94 |
| **Heavy** | 1 | 53 | 2 | 0 | | 56 | 0 | 3 | 3 | 0 | | 6 | 7 | 37 | 1 | 0 | | 45 | 1 | 2 | 3 | 0 | | 6 | 113 |
| **Heavy %** | 16.7% | 12.1% | 16.7% | 0% | | 12.3% | 0% | 3.8% | 6.8% | 0% | | 4.7% | 6.2% | 25% | 14.3% | 0% | | 16.8% | 3.4% | 1.3% | 21.4% | 0% | | 3% | 10.7% |
| **Lights** | 5 | 386 | 10 | 0 | | 401 | 4 | 76 | 41 | 0 | | 121 | 106 | 111 | 6 | 0 | | 223 | 28 | 156 | 11 | 0 | | 195 | 940 |
| **Lights %** | 83.3% | 87.9% | 83.3% | 0% | | 87.7% | 100% | 96.2% | 93.2% | 0% | | 95.3% | 93.8% | 75% | 85.7% | 0% | | 83.2% | 96.6% | 98.7% | 78.6% | 0% | | 97% | 89.3% |
| **Single-Unit Trucks** | 1 | 20 | 0 | 0 | | 21 | 0 | 2 | 2 | 0 | | 4 | 2 | 16 | 0 | 0 | | 18 | 1 | 2 | 1 | 0 | | 4 | 47 |
| **Single-Unit Trucks %** | 16.7% | 4.6% | 0% | 0% | | 4.6% | 0% | 2.5% | 4.5% | 0% | | 3.1% | 1.8% | 10.8% | 0% | 0% | | 6.7% | 3.4% | 1.3% | 7.1% | 0% | | 2% | 4.5% |
| **Buses** | 0 | 3 | 2 | 0 | | 5 | 0 | 0 | 0 | 0 | | 0 | 5 | 10 | 1 | 0 | | 16 | 0 | 0 | 2 | 0 | | 2 | 23 |
| **Buses %** | 0% | 0.7% | 16.7% | 0% | | 1.1% | 0% | 0% | 0% | 0% | | 0% | 4.4% | 6.8% | 14.3% | 0% | | 6% | 0% | 0% | 14.3% | 0% | | 1% | 2.2% |
| **Articulated Trucks** | 0 | 30 | 0 | 0 | | 30 | 0 | 1 | 1 | 0 | | 2 | 0 | 11 | 0 | 0 | | 11 | 0 | 0 | 0 | 0 | | 0 | 43 |
| **Articulated Trucks %** | 0% | 6.8% | 0% | 0% | | 6.6% | 0% | 1.3% | 2.3% | 0% | | 1.6% | 0% | 7.4% | 0% | 0% | | 4.1% | 0% | 0% | 0% | 0% | | 0% | 4.1% |

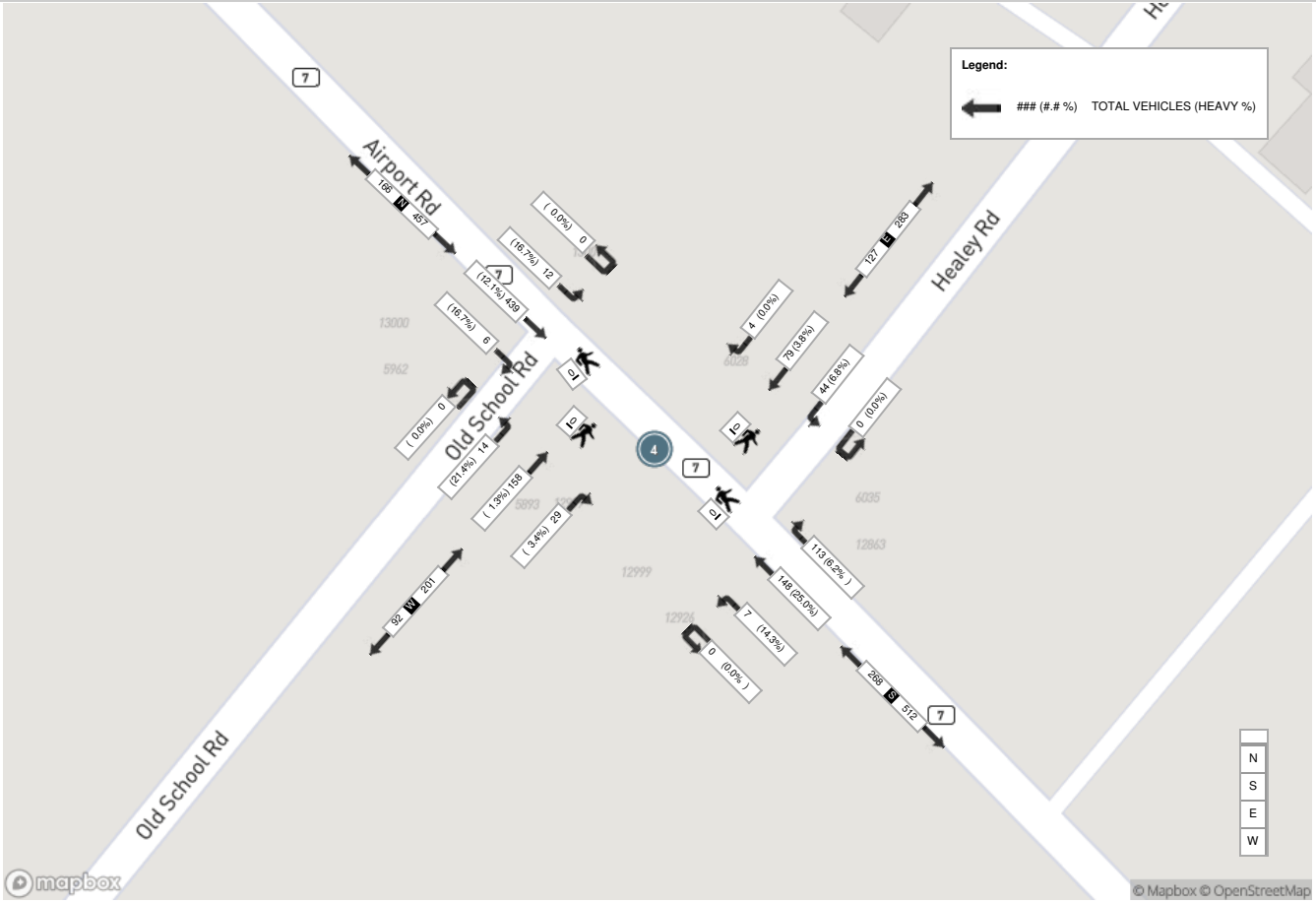
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:15 PM - 05:15 PM Weather: Mist (8.21 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach HEALY ROAD | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach OLD SCHOOL ROAD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 16:15:00 | 5 | 52 | 3 | 0 | 0 | 60 | 2 | 64 | 28 | 0 | 0 | 94 | 16 | 108 | 7 | 0 | 0 | 131 | 4 | 20 | 3 | 0 | 0 | 27 | 312 |
| 2024-11-20 16:30:00 | 4 | 57 | 3 | 0 | 0 | 64 | 1 | 69 | 23 | 0 | 0 | 93 | 16 | 102 | 4 | 0 | 0 | 122 | 6 | 38 | 8 | 0 | 0 | 52 | 331 |
| 2024-11-20 16:45:00 | 6 | 58 | 2 | 0 | 0 | 66 | 4 | 56 | 27 | 0 | 0 | 87 | 22 | 112 | 9 | 0 | 0 | 143 | 6 | 32 | 4 | 0 | 0 | 42 | 338 |
| 2024-11-20 17:00:00 | 5 | 47 | 2 | 0 | 0 | 54 | 2 | 65 | 20 | 0 | 0 | 87 | 17 | 105 | 7 | 0 | 0 | 129 | 6 | 41 | 6 | 0 | 0 | 53 | 323 |
| **Grand Total** | 20 | 214 | 10 | 0 | 0 | 244 | 9 | 254 | 98 | 0 | 0 | 361 | 71 | 427 | 27 | 0 | 0 | 525 | 22 | 131 | 21 | 0 | 0 | 174 | **1304** |
| **Approach%** | 8.2% | 87.7% | 4.1% | 0% | | - | 2.5% | 70.4% | 27.1% | 0% | | - | 13.5% | 81.3% | 5.1% | 0% | | - | 12.6% | 75.3% | 12.1% | 0% | | - | **-** |
| **Totals %** | 1.5% | 16.4% | 0.8% | 0% | | 18.7% | 0.7% | 19.5% | 7.5% | 0% | | 27.7% | 5.4% | 32.7% | 2.1% | 0% | | 40.3% | 1.7% | 10% | 1.6% | 0% | | 13.3% | **-** |
| **PHF** | 0.83 | 0.92 | 0.83 | 0 | | 0.92 | 0.56 | 0.92 | 0.88 | 0 | | 0.96 | 0.81 | 0.95 | 0.75 | 0 | | 0.92 | 0.92 | 0.8 | 0.66 | 0 | | 0.82 | 0.96 |
| **Heavy** | 1 | 48 | 1 | 0 | | 50 | 1 | 2 | 4 | 0 | | 7 | 3 | 22 | 2 | 0 | | 27 | 3 | 3 | 2 | 0 | | 8 | 92 |
| **Heavy %** | 5% | 22.4% | 10% | 0% | | 20.5% | 11.1% | 0.8% | 4.1% | 0% | | 1.9% | 4.2% | 5.2% | 7.4% | 0% | | 5.1% | 13.6% | 2.3% | 9.5% | 0% | | 4.6% | 7.1% |
| **Lights** | 19 | 166 | 9 | 0 | | 194 | 8 | 252 | 94 | 0 | | 354 | 68 | 405 | 25 | 0 | | 498 | 19 | 128 | 19 | 0 | | 166 | 1212 |
| **Lights %** | 95% | 77.6% | 90% | 0% | | 79.5% | 88.9% | 99.2% | 95.9% | 0% | | 98.1% | 95.8% | 94.8% | 92.6% | 0% | | 94.9% | 86.4% | 97.7% | 90.5% | 0% | | 95.4% | 92.9% |
| **Single-Unit Trucks** | 1 | 21 | 1 | 0 | | 23 | 1 | 0 | 1 | 0 | | 2 | 1 | 12 | 2 | 0 | | 15 | 0 | 2 | 1 | 0 | | 3 | 43 |
| **Single-Unit Trucks %** | 5% | 9.8% | 10% | 0% | | 9.4% | 11.1% | 0% | 1% | 0% | | 0.6% | 1.4% | 2.8% | 7.4% | 0% | | 2.9% | 0% | 1.5% | 4.8% | 0% | | 1.7% | 3.3% |
| **Buses** | 0 | 9 | 0 | 0 | | 9 | 0 | 2 | 3 | 0 | | 5 | 1 | 0 | 0 | 0 | | 1 | 3 | 1 | 1 | 0 | | 5 | 20 |
| **Buses %** | 0% | 4.2% | 0% | 0% | | 3.7% | 0% | 0.8% | 3.1% | 0% | | 1.4% | 1.4% | 0% | 0% | 0% | | 0.2% | 13.6% | 0.8% | 4.8% | 0% | | 2.9% | 1.5% |
| **Articulated Trucks** | 0 | 18 | 0 | 0 | | 18 | 0 | 0 | 0 | 0 | | 0 | 1 | 10 | 0 | 0 | | 11 | 0 | 0 | 0 | 0 | | 0 | 29 |
| **Articulated Trucks %** | 0% | 8.4% | 0% | 0% | | 7.4% | 0% | 0% | 0% | 0% | | 0% | 1.4% | 2.3% | 0% | 0% | | 2.1% | 0% | 0% | 0% | 0% | | 0% | 2.2% |

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:00 AM - 08:00 AM** **Weather: Overcast Clouds (7.52 °C)**

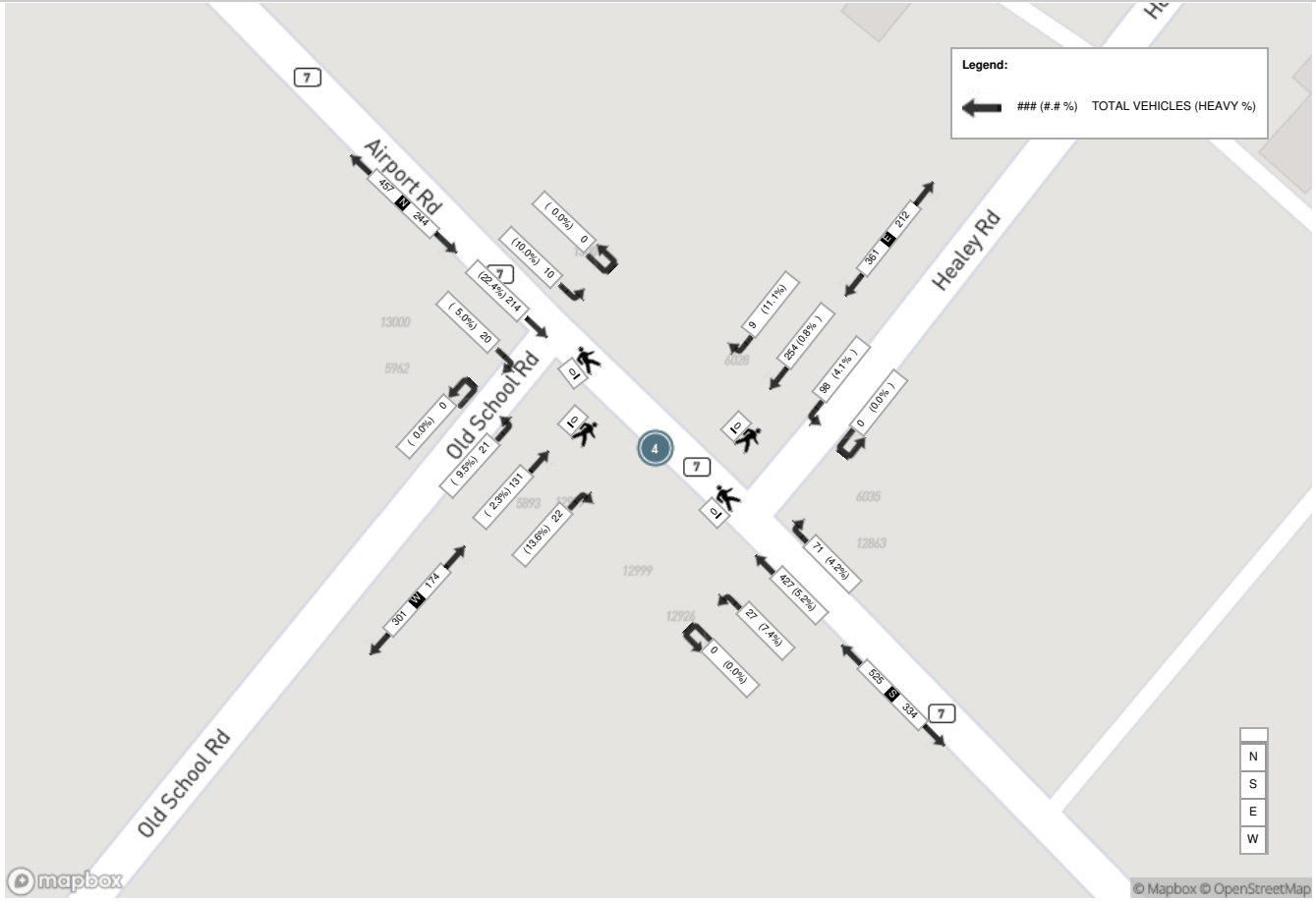


Spectrum

Turning Movement Count
Location Name: AIRPORT ROAD & OLD SCHOOL ROAD / HEALY ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:15 PM - 05:15 PM Weather: Mist (8.21 °C)**



Spectrum

Turning Movement Count
Location Name: TORBRAM ROAD & OLD SCHOOL ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

## Turning Movement Count (3 . TORBRAM ROAD & OLD SCHOOL ROAD) MioID: 1250776

| Start Time | N Approach TORBRAM ROAD | | | | | | E Approach OLD SCHOOL ROAD | | | | | | S Approach TORBRAM ROAD | | | | | | W Approach OLD SCHOOL ROAD | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right N:W | Thru N:S | Left N:E | U-Turn N:N | Peds N: | Approach Total | Right E:N | Thru E:W | Left E:S | U-Turn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | Left S:W | U-Turn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | Left W:N | U-Turn W:W | Peds W: | Approach Total | | |
| 2024-11-20 07:00:00 | 2 | 40 | 0 | 0 | 0 | 42 | 0 | 15 | 2 | 0 | 0 | 17 | 4 | 6 | 1 | 0 | 0 | 11 | 8 | 36 | 1 | 0 | 0 | 45 | 115 | |
| 2024-11-20 07:15:00 | 1 | 45 | 1 | 0 | 0 | 47 | 0 | 28 | 0 | 0 | 0 | 28 | 3 | 11 | 3 | 0 | 0 | 17 | 8 | 50 | 1 | 0 | 0 | 59 | 151 | |
| 2024-11-20 07:30:00 | 3 | 77 | 0 | 0 | 0 | 80 | 0 | 18 | 1 | 0 | 0 | 19 | 0 | 16 | 3 | 0 | 0 | 19 | 15 | 53 | 0 | 0 | 0 | 68 | 186 | |
| 2024-11-20 07:45:00 | 7 | 76 | 0 | 0 | 0 | 83 | 1 | 23 | 0 | 0 | 0 | 24 | 3 | 12 | 2 | 0 | 0 | 17 | 16 | 59 | 1 | 0 | 0 | 76 | 200 | 652 |
| 2024-11-20 08:00:00 | 4 | 59 | 1 | 0 | 0 | 64 | 1 | 13 | 3 | 0 | 0 | 17 | 1 | 14 | 1 | 0 | 0 | 16 | 13 | 49 | 2 | 0 | 0 | 64 | 161 | 698 |
| 2024-11-20 08:15:00 | 2 | 63 | 3 | 0 | 0 | 68 | 0 | 20 | 2 | 0 | 0 | 22 | 5 | 17 | 6 | 0 | 0 | 28 | 10 | 53 | 1 | 0 | 0 | 64 | 182 | 729 |
| 2024-11-20 08:30:00 | 3 | 38 | 2 | 0 | 0 | 43 | 0 | 13 | 0 | 0 | 0 | 13 | 5 | 14 | 2 | 0 | 0 | 21 | 12 | 47 | 3 | 0 | 0 | 62 | 139 | 682 |
| 2024-11-20 08:45:00 | 2 | 27 | 0 | 0 | 0 | 29 | 0 | 16 | 0 | 0 | 0 | 16 | 2 | 18 | 3 | 0 | 0 | 23 | 10 | 57 | 3 | 0 | 0 | 70 | 138 | 620 |
| 2024-11-20 09:00:00 | 0 | 35 | 2 | 0 | 0 | 37 | 0 | 11 | 1 | 0 | 0 | 12 | 3 | 17 | 1 | 0 | 0 | 21 | 1 | 30 | 0 | 0 | 0 | 31 | 101 | 560 |
| 2024-11-20 09:15:00 | 2 | 30 | 1 | 0 | 0 | 33 | 0 | 16 | 2 | 0 | 0 | 18 | 0 | 13 | 3 | 0 | 0 | 16 | 3 | 22 | 2 | 0 | 0 | 27 | 94 | 472 |
| 2024-11-20 09:30:00 | 0 | 25 | 2 | 0 | 0 | 27 | 0 | 13 | 1 | 0 | 0 | 14 | 3 | 11 | 2 | 0 | 0 | 16 | 5 | 31 | 1 | 0 | 0 | 37 | 94 | 427 |
| 2024-11-20 09:45:00 | 0 | 20 | 2 | 0 | 0 | 22 | 0 | 15 | 2 | 0 | 0 | 17 | 3 | 9 | 2 | 0 | 0 | 14 | 2 | 24 | 2 | 0 | 0 | 28 | 81 | 370 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024-11-20 16:00:00 | 1 | 18 | 1 | 0 | 0 | 20 | 1 | 64 | 6 | 0 | 0 | 71 | 2 | 61 | 9 | 0 | 0 | 72 | 3 | 30 | 3 | 0 | 0 | 36 | 199 | |
| 2024-11-20 16:15:00 | 4 | 20 | 1 | 0 | 0 | 25 | 0 | 71 | 2 | 0 | 0 | 73 | 1 | 60 | 8 | 0 | 0 | 69 | 5 | 29 | 6 | 0 | 0 | 40 | 207 | |
| 2024-11-20 16:30:00 | 1 | 22 | 0 | 0 | 0 | 23 | 0 | 82 | 5 | 0 | 0 | 87 | 7 | 60 | 6 | 0 | 0 | 73 | 4 | 41 | 2 | 0 | 0 | 47 | 230 | |
| 2024-11-20 16:45:00 | 3 | 28 | 0 | 0 | 0 | 31 | 3 | 64 | 5 | 0 | 0 | 72 | 4 | 72 | 9 | 0 | 0 | 85 | 3 | 41 | 3 | 0 | 0 | 47 | 235 | 871 |
| 2024-11-20 17:00:00 | 4 | 21 | 0 | 0 | 0 | 25 | 0 | 74 | 4 | 0 | 0 | 78 | 6 | 51 | 13 | 0 | 0 | 70 | 4 | 45 | 3 | 0 | 0 | 52 | 225 | 897 |
| 2024-11-20 17:15:00 | 1 | 21 | 0 | 0 | 0 | 22 | 1 | 64 | 2 | 0 | 0 | 67 | 6 | 54 | 15 | 0 | 0 | 75 | 1 | 18 | 2 | 0 | 0 | 21 | 185 | 875 |
| 2024-11-20 17:30:00 | 0 | 22 | 0 | 0 | 0 | 22 | 1 | 81 | 2 | 0 | 0 | 84 | 1 | 48 | 13 | 0 | 0 | 62 | 6 | 35 | 2 | 0 | 0 | 43 | 211 | 856 |
| 2024-11-20 17:45:00 | 1 | 15 | 1 | 0 | 0 | 17 | 1 | 58 | 2 | 0 | 0 | 61 | 3 | 41 | 11 | 0 | 0 | 55 | 6 | 24 | 3 | 0 | 0 | 33 | 166 | 787 |
| 2024-11-20 18:00:00 | 1 | 19 | 0 | 0 | 0 | 20 | 0 | 69 | 0 | 0 | 0 | 69 | 2 | 33 | 11 | 0 | 0 | 46 | 4 | 31 | 2 | 0 | 0 | 37 | 172 | 734 |
| 2024-11-20 18:15:00 | 0 | 17 | 1 | 0 | 0 | 18 | 2 | 66 | 5 | 0 | 0 | 73 | 0 | 28 | 11 | 0 | 0 | 39 | 2 | 33 | 3 | 0 | 0 | 38 | 168 | 717 |
| 2024-11-20 18:30:00 | 2 | 20 | 1 | 0 | 0 | 23 | 0 | 63 | 2 | 0 | 0 | 65 | 0 | 14 | 7 | 0 | 0 | 21 | 2 | 18 | 2 | 0 | 0 | 22 | 131 | 637 |
| 2024-11-20 18:45:00 | 1 | 9 | 0 | 0 | 0 | 10 | 0 | 44 | 2 | 0 | 0 | 46 | 1 | 22 | 4 | 0 | 0 | 27 | 4 | 18 | 0 | 0 | 0 | 22 | 105 | 576 |
| **Grand Total** | 45 | 767 | 19 | 0 | 0 | 831 | 11 | 1001 | 51 | 0 | 0 | 1063 | 65 | 702 | 146 | 0 | 0 | 913 | 147 | 874 | 48 | 0 | 0 | 1069 | **3876** | - |
| **Approach%** | 5.4% | 92.3% | 2.3% | 0% | | - | 1% | 94.2% | 4.8% | 0% | | - | 7.1% | 76.9% | 16% | 0% | | - | 13.8% | 81.8% | 4.5% | 0% | | - | - | - |
| **Totals %** | 1.2% | 19.8% | 0.5% | 0% | | 21.4% | 0.3% | 25.8% | 1.3% | 0% | | 27.4% | 1.7% | 18.1% | 3.8% | 0% | | 23.6% | 3.8% | 22.5% | 1.2% | 0% | | 27.6% | - | - |
| **Heavy** | 1 | 13 | 3 | 0 | | - | 1 | 18 | 0 | 0 | | - | 2 | 5 | 4 | 0 | | - | 5 | 23 | 1 | 0 | | - | - | - |
| **Heavy %** | 2.2% | 1.7% | 15.8% | 0% | | - | 9.1% | 1.8% | 0% | 0% | | - | 3.1% | 0.7% | 2.7% | 0% | | - | 3.4% | 2.6% | 2.1% | 0% | | - | - | - |
| **Bicycles** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |

Spectrum

Turning Movement Count
Location Name: TORBRAM ROAD & OLD SCHOOL ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:30 AM - 08:30 AM** **Weather: Overcast Clouds (7.52 °C)**

| Start Time | N Approach TORBRAM ROAD | | | | | | E Approach OLD SCHOOL ROAD | | | | | | S Approach TORBRAM ROAD | | | | | | W Approach OLD SCHOOL ROAD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 07:30:00 | 3 | 77 | 0 | 0 | 0 | 80 | 0 | 18 | 1 | 0 | 0 | 19 | 0 | 16 | 3 | 0 | 0 | 19 | 15 | 53 | 0 | 0 | 0 | 68 | 186 |
| 2024-11-20 07:45:00 | 7 | 76 | 0 | 0 | 0 | 83 | 1 | 23 | 0 | 0 | 0 | 24 | 3 | 12 | 2 | 0 | 0 | 17 | 16 | 59 | 1 | 0 | 0 | 76 | 200 |
| 2024-11-20 08:00:00 | 4 | 59 | 1 | 0 | 0 | 64 | 1 | 13 | 3 | 0 | 0 | 17 | 1 | 14 | 1 | 0 | 0 | 16 | 13 | 49 | 2 | 0 | 0 | 64 | 161 |
| 2024-11-20 08:15:00 | 2 | 63 | 3 | 0 | 0 | 68 | 0 | 20 | 2 | 0 | 0 | 22 | 5 | 17 | 6 | 0 | 0 | 28 | 10 | 53 | 1 | 0 | 0 | 64 | 182 |
| **Grand Total** | 16 | 275 | 4 | 0 | 0 | 295 | 2 | 74 | 6 | 0 | 0 | 82 | 9 | 59 | 12 | 0 | 0 | 80 | 54 | 214 | 4 | 0 | 0 | 272 | **729** |
| **Approach%** | 5.4% | 93.2% | 1.4% | 0% | | - | 2.4% | 90.2% | 7.3% | 0% | | - | 11.3% | 73.8% | 15% | 0% | | - | 19.9% | 78.7% | 1.5% | 0% | | - | **-** |
| **Totals %** | 2.2% | 37.7% | 0.5% | 0% | | 40.5% | 0.3% | 10.2% | 0.8% | 0% | | 11.2% | 1.2% | 8.1% | 1.6% | 0% | | 11% | 7.4% | 29.4% | 0.5% | 0% | | 37.3% | **-** |
| **PHF** | 0.57 | 0.89 | 0.33 | 0 | | 0.89 | 0.5 | 0.8 | 0.5 | 0 | | 0.85 | 0.45 | 0.87 | 0.5 | 0 | | 0.71 | 0.84 | 0.91 | 0.5 | 0 | | 0.89 | 0.91 |
| **Heavy** | 0 | 1 | 1 | 0 | | 2 | 0 | 1 | 0 | 0 | | 1 | 1 | 1 | 2 | 0 | | 4 | 4 | 4 | 0 | 0 | | 8 | 15 |
| **Heavy %** | 0% | 0.4% | 25% | 0% | | 0.7% | 0% | 1.4% | 0% | 0% | | 1.2% | 11.1% | 1.7% | 16.7% | 0% | | 5% | 7.4% | 1.9% | 0% | 0% | | 2.9% | 2.1% |
| **Lights** | 16 | 274 | 3 | 0 | | 293 | 2 | 73 | 6 | 0 | | 81 | 8 | 58 | 10 | 0 | | 76 | 50 | 210 | 4 | 0 | | 264 | 714 |
| **Lights %** | 100% | 99.6% | 75% | 0% | | 99.3% | 100% | 98.6% | 100% | 0% | | 98.8% | 88.9% | 98.3% | 83.3% | 0% | | 95% | 92.6% | 98.1% | 100% | 0% | | 97.1% | 97.9% |
| **Single-Unit Trucks** | 0 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | 0 | | 1 | 0 | 0 | 0 | 0 | | 0 | 1 | 1 | 0 | 0 | | 2 | 3 |
| **Single-Unit Trucks %** | 0% | 0% | 0% | 0% | | 0% | 0% | 1.4% | 0% | 0% | | 1.2% | 0% | 0% | 0% | 0% | | 0% | 1.9% | 0.5% | 0% | 0% | | 0.7% | 0.4% |
| **Buses** | 0 | 1 | 1 | 0 | | 2 | 0 | 0 | 0 | 0 | | 0 | 1 | 1 | 2 | 0 | | 4 | 2 | 2 | 0 | 0 | | 4 | 10 |
| **Buses %** | 0% | 0.4% | 25% | 0% | | 0.7% | 0% | 0% | 0% | 0% | | 0% | 11.1% | 1.7% | 16.7% | 0% | | 5% | 3.7% | 0.9% | 0% | 0% | | 1.5% | 1.4% |
| **Articulated Trucks** | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 1 | 1 | 0 | 0 | | 2 | 2 |
| **Articulated Trucks %** | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 1.9% | 0.5% | 0% | 0% | | 0.7% | 0.3% |

Spectrum

Turning Movement Count
Location Name: TORBRAM ROAD & OLD SCHOOL ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

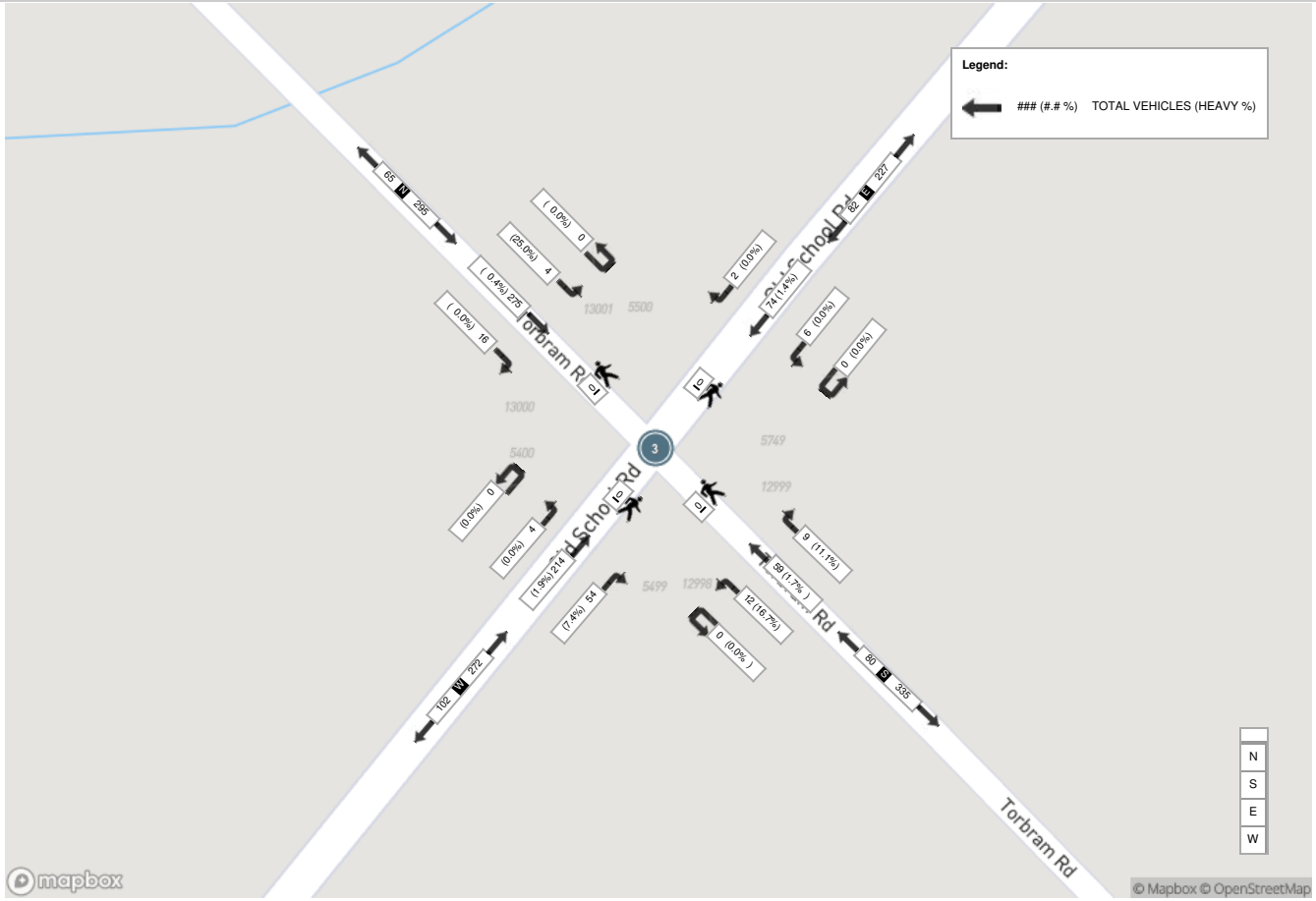
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:15 PM - 05:15 PM Weather: Mist (8.21 °C)**

| Start Time | N Approach TORBRAM ROAD | | | | | | E Approach OLD SCHOOL ROAD | | | | | | S Approach TORBRAM ROAD | | | | | | W Approach OLD SCHOOL ROAD | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 16:15:00 | 4 | 20 | 1 | 0 | 0 | 25 | 0 | 71 | 2 | 0 | 0 | 73 | 1 | 60 | 8 | 0 | 0 | 69 | 5 | 29 | 6 | 0 | 0 | 40 | 207 |
| 2024-11-20 16:30:00 | 1 | 22 | 0 | 0 | 0 | 23 | 0 | 82 | 5 | 0 | 0 | 87 | 7 | 60 | 6 | 0 | 0 | 73 | 4 | 41 | 2 | 0 | 0 | 47 | 230 |
| 2024-11-20 16:45:00 | 3 | 28 | 0 | 0 | 0 | 31 | 3 | 64 | 5 | 0 | 0 | 72 | 4 | 72 | 9 | 0 | 0 | 85 | 3 | 41 | 3 | 0 | 0 | 47 | 235 |
| 2024-11-20 17:00:00 | 4 | 21 | 0 | 0 | 0 | 25 | 0 | 74 | 4 | 0 | 0 | 78 | 6 | 51 | 13 | 0 | 0 | 70 | 4 | 45 | 3 | 0 | 0 | 52 | 225 |
| **Grand Total** | 12 | 91 | 1 | 0 | 0 | 104 | 3 | 291 | 16 | 0 | 0 | 310 | 18 | 243 | 36 | 0 | 0 | 297 | 16 | 156 | 14 | 0 | 0 | 186 | **897** |
| **Approach%** | 11.5% | 87.5% | 1% | 0% | | - | 1% | 93.9% | 5.2% | 0% | | - | 6.1% | 81.8% | 12.1% | 0% | | - | 8.6% | 83.9% | 7.5% | 0% | | - | **-** |
| **Totals %** | 1.3% | 10.1% | 0.1% | 0% | | 11.6% | 0.3% | 32.4% | 1.8% | 0% | | 34.6% | 2% | 27.1% | 4% | 0% | | 33.1% | 1.8% | 17.4% | 1.6% | 0% | | 20.7% | **-** |
| **PHF** | 0.75 | 0.81 | 0.25 | 0 | | 0.84 | 0.25 | 0.89 | 0.8 | 0 | | 0.89 | 0.64 | 0.84 | 0.69 | 0 | | 0.87 | 0.8 | 0.87 | 0.58 | 0 | | 0.89 | 0.95 |
| **Heavy** | 0 | 3 | 1 | 0 | | 4 | 0 | 4 | 0 | 0 | | 4 | 1 | 0 | 0 | 0 | | 1 | 0 | 5 | 0 | 0 | | 5 | 14 |
| **Heavy %** | 0% | 3.3% | 100% | 0% | | 3.8% | 0% | 1.4% | 0% | 0% | | 1.3% | 5.6% | 0% | 0% | 0% | | 0.3% | 0% | 3.2% | 0% | 0% | | 2.7% | 1.6% |
| **Lights** | 12 | 88 | 0 | 0 | | 100 | 3 | 287 | 16 | 0 | | 306 | 17 | 243 | 36 | 0 | | 296 | 16 | 151 | 14 | 0 | | 181 | 883 |
| **Lights %** | 100% | 96.7% | 0% | 0% | | 96.2% | 100% | 98.6% | 100% | 0% | | 98.7% | 94.4% | 100% | 100% | 0% | | 99.7% | 100% | 96.8% | 100% | 0% | | 97.3% | 98.4% |
| **Single-Unit Trucks** | 0 | 0 | 0 | 0 | | 0 | 0 | 2 | 0 | 0 | | 2 | 0 | 0 | 0 | 0 | | 0 | 0 | 2 | 0 | 0 | | 2 | 4 |
| **Single-Unit Trucks %** | 0% | 0% | 0% | 0% | | 0% | 0% | 0.7% | 0% | 0% | | 0.6% | 0% | 0% | 0% | 0% | | 0% | 0% | 1.3% | 0% | 0% | | 1.1% | 0.4% |
| **Buses** | 0 | 3 | 1 | 0 | | 4 | 0 | 2 | 0 | 0 | | 2 | 1 | 0 | 0 | 0 | | 1 | 0 | 3 | 0 | 0 | | 3 | 10 |
| **Buses %** | 0% | 3.3% | 100% | 0% | | 3.8% | 0% | 0.7% | 0% | 0% | | 0.6% | 5.6% | 0% | 0% | 0% | | 0.3% | 0% | 1.9% | 0% | 0% | | 1.6% | 1.1% |
| **Articulated Trucks** | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |
| **Articulated Trucks %** | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% |

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:30 AM - 08:30 AM** **Weather: Overcast Clouds (7.52 °C)**

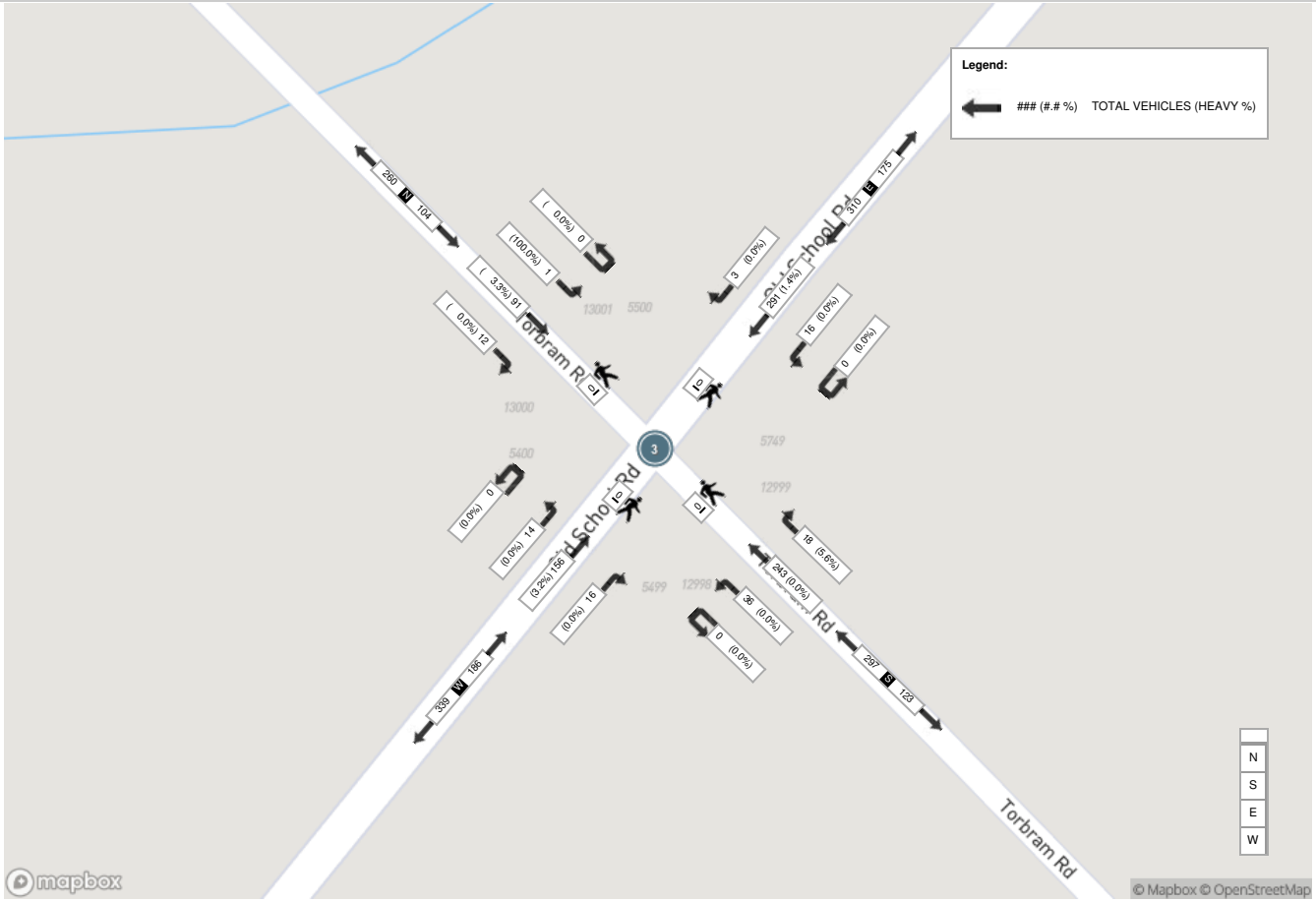


Spectrum

Turning Movement Count
Location Name: TORBRAM ROAD & OLD SCHOOL ROAD
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:15 PM - 05:15 PM** **Weather: Mist (8.21 °C)**



Spectrum

Turning Movement Count
Location Name: AIRPORT ROAD & 12333 AIRPORT ROAD SITE ACCESS
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

## Turning Movement Count (5 . AIRPORT ROAD & 12333 AIRPORT ROAD SITE ACCESS) CustID: 00718361 MioID: 1250791

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach 12333 AIRPORT ROAD SITE ACCESS | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach 12333 AIRPORT ROAD SITE ACCESS | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right N:W | Thru N:S | Left N:E | U-Turn N:N | Peds N: | Approach Total | Right E:N | Thru E:W | Left E:S | U-Turn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | Left S:W | U-Turn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | Left W:N | U-Turn W:W | Peds W: | Approach Total | | |
| 2024-11-20 07:00:00 | 0 | 84 | 2 | 0 | 0 | 86 | 1 | 0 | 11 | 0 | 1 | 12 | 8 | 70 | 0 | 2 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 178 | |
| 2024-11-20 07:15:00 | 0 | 126 | 1 | 0 | 0 | 127 | 1 | 0 | 8 | 0 | 1 | 9 | 8 | 65 | 0 | 0 | 0 | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 209 | |
| 2024-11-20 07:30:00 | 0 | 167 | 2 | 0 | 0 | 169 | 0 | 0 | 6 | 0 | 5 | 6 | 5 | 58 | 0 | 1 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 239 | |
| 2024-11-20 07:45:00 | 0 | 122 | 4 | 0 | 0 | 126 | 0 | 0 | 9 | 0 | 2 | 9 | 15 | 75 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 225 | 851 |
| 2024-11-20 08:00:00 | 0 | 115 | 1 | 0 | 0 | 116 | 2 | 0 | 19 | 0 | 1 | 21 | 18 | 53 | 0 | 0 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 208 | 881 |
| 2024-11-20 08:15:00 | 0 | 130 | 0 | 0 | 0 | 130 | 0 | 0 | 10 | 0 | 0 | 10 | 12 | 56 | 0 | 0 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 0 | 208 | 880 |
| 2024-11-20 08:30:00 | 0 | 137 | 0 | 0 | 0 | 137 | 2 | 0 | 8 | 0 | 1 | 10 | 12 | 56 | 2 | 0 | 1 | 70 | 0 | 0 | 0 | 0 | 1 | 0 | 217 | 858 |
| 2024-11-20 08:45:00 | 0 | 102 | 0 | 0 | 0 | 102 | 0 | 0 | 10 | 0 | 0 | 10 | 7 | 54 | 0 | 0 | 0 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 173 | 806 |
| 2024-11-20 09:00:00 | 0 | 126 | 1 | 0 | 0 | 127 | 2 | 0 | 4 | 0 | 0 | 6 | 12 | 63 | 0 | 0 | 0 | 75 | 1 | 0 | 0 | 0 | 0 | 1 | 209 | 807 |
| 2024-11-20 09:15:00 | 0 | 105 | 0 | 0 | 0 | 105 | 0 | 0 | 6 | 0 | 0 | 6 | 8 | 27 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 1 | 0 | 1 | 147 | 746 |
| 2024-11-20 09:30:00 | 0 | 81 | 0 | 0 | 0 | 81 | 1 | 0 | 5 | 0 | 0 | 6 | 6 | 30 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 652 |
| 2024-11-20 09:45:00 | 0 | 69 | 0 | 0 | 0 | 69 | 0 | 0 | 4 | 0 | 0 | 4 | 10 | 48 | 0 | 2 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 612 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024-11-20 16:00:00 | 0 | 89 | 1 | 0 | 0 | 90 | 0 | 0 | 11 | 0 | 0 | 11 | 2 | 126 | 0 | 0 | 0 | 128 | 0 | 0 | 0 | 0 | 1 | 0 | 229 | |
| 2024-11-20 16:15:00 | 0 | 88 | 0 | 0 | 0 | 88 | 1 | 0 | 9 | 0 | 1 | 10 | 8 | 153 | 0 | 0 | 0 | 161 | 0 | 0 | 0 | 0 | 0 | 0 | 259 | |
| 2024-11-20 16:30:00 | 0 | 90 | 1 | 0 | 0 | 91 | 4 | 0 | 18 | 0 | 0 | 22 | 8 | 117 | 0 | 1 | 0 | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 239 | |
| 2024-11-20 16:45:00 | 0 | 84 | 1 | 0 | 0 | 85 | 2 | 0 | 7 | 0 | 2 | 9 | 9 | 154 | 0 | 1 | 0 | 164 | 0 | 0 | 0 | 0 | 0 | 0 | 258 | 985 |
| 2024-11-20 17:00:00 | 0 | 75 | 0 | 0 | 0 | 75 | 0 | 0 | 3 | 0 | 0 | 3 | 5 | 133 | 0 | 0 | 0 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 216 | 972 |
| 2024-11-20 17:15:00 | 0 | 94 | 0 | 0 | 0 | 94 | 0 | 0 | 15 | 0 | 0 | 15 | 3 | 117 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 229 | 942 |
| 2024-11-20 17:30:00 | 0 | 82 | 1 | 0 | 0 | 83 | 1 | 0 | 8 | 0 | 0 | 9 | 6 | 137 | 0 | 0 | 0 | 143 | 0 | 0 | 0 | 0 | 0 | 0 | 235 | 938 |
| 2024-11-20 17:45:00 | 0 | 95 | 2 | 0 | 0 | 97 | 0 | 0 | 12 | 0 | 0 | 12 | 1 | 87 | 0 | 0 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 197 | 877 |
| 2024-11-20 18:00:00 | 0 | 95 | 1 | 0 | 0 | 96 | 2 | 0 | 4 | 0 | 0 | 6 | 3 | 95 | 0 | 2 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 202 | 863 |
| 2024-11-20 18:15:00 | 0 | 64 | 0 | 0 | 0 | 64 | 0 | 0 | 7 | 0 | 0 | 7 | 1 | 99 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 171 | 805 |
| 2024-11-20 18:30:00 | 0 | 69 | 0 | 0 | 0 | 69 | 0 | 0 | 5 | 0 | 0 | 5 | 6 | 103 | 0 | 0 | 0 | 109 | 0 | 0 | 0 | 0 | 0 | 0 | 183 | 753 |
| 2024-11-20 18:45:00 | 0 | 50 | 0 | 0 | 0 | 50 | 1 | 0 | 4 | 0 | 0 | 5 | 6 | 77 | 0 | 1 | 0 | 84 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 695 |
| **Grand Total** | 0 | 2339 | 18 | 0 | 0 | 2357 | 20 | 0 | 203 | 0 | 14 | 223 | 179 | 2053 | 2 | 10 | 1 | 2244 | 1 | 0 | 0 | 1 | 2 | 2 | **4826** | - |
| **Approach%** | 0% | 99.2% | 0.8% | 0% | | - | 9% | 0% | 91% | 0% | | - | 8% | 91.5% | 0.1% | 0.4% | | - | 50% | 0% | 0% | 50% | | - | - | - |
| **Totals %** | 0% | 48.5% | 0.4% | 0% | | 48.8% | 0.4% | 0% | 4.2% | 0% | | 4.6% | 3.7% | 42.5% | 0% | 0.2% | | 46.5% | 0% | 0% | 0% | 0% | | 0% | - | - |
| **Heavy** | 0 | 301 | 8 | 0 | | - | 6 | 0 | 95 | 0 | | - | 81 | 221 | 2 | 0 | | - | 1 | 0 | 0 | 0 | | - | - | - |
| **Heavy %** | 0% | 12.9% | 44.4% | 0% | | - | 30% | 0% | 46.8% | 0% | | - | 45.3% | 10.8% | 100% | 0% | | - | 100% | 0% | 0% | 0% | | - | - | - |
| **Bicycles** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:15 AM - 08:15 AM Weather: Overcast Clouds (7.52 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach 12333 AIRPORT ROAD SITE ACCESS | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach 12333 AIRPORT ROAD SITE ACCESS | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 07:15:00 | 0 | 126 | 1 | 0 | 0 | 127 | 1 | 0 | 8 | 0 | 1 | 9 | 8 | 65 | 0 | 0 | 0 | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 209 |
| 2024-11-20 07:30:00 | 0 | 167 | 2 | 0 | 0 | 169 | 0 | 0 | 6 | 0 | 5 | 6 | 5 | 58 | 0 | 1 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 239 |
| 2024-11-20 07:45:00 | 0 | 122 | 4 | 0 | 0 | 126 | 0 | 0 | 9 | 0 | 2 | 9 | 15 | 75 | 0 | 0 | 0 | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 225 |
| 2024-11-20 08:00:00 | 0 | 115 | 1 | 0 | 0 | 116 | 2 | 0 | 19 | 0 | 1 | 21 | 18 | 53 | 0 | 0 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 208 |
| **Grand Total** | 0 | 530 | 8 | 0 | 0 | 538 | 3 | 0 | 42 | 0 | 9 | 45 | 46 | 251 | 0 | 1 | 0 | 298 | 0 | 0 | 0 | 0 | 0 | 0 | **881** |
| **Approach%** | 0% | 98.5% | 1.5% | 0% | | - | 6.7% | 0% | 93.3% | 0% | | - | 15.4% | 84.2% | 0% | 0.3% | | - | 0% | 0% | 0% | 0% | | - | **-** |
| **Totals %** | 0% | 60.2% | 0.9% | 0% | | 61.1% | 0.3% | 0% | 4.8% | 0% | | 5.1% | 5.2% | 28.5% | 0% | 0.1% | | 33.8% | 0% | 0% | 0% | 0% | | 0% | **-** |
| **PHF** | 0 | 0.79 | 0.5 | 0 | | 0.8 | 0.38 | 0 | 0.55 | 0 | | 0.54 | 0.64 | 0.84 | 0 | 0.25 | | 0.83 | 0 | 0 | 0 | 0 | | 0 | 0.92 |
| **Heavy** | 0 | 58 | 3 | 0 | | 61 | 1 | 0 | 23 | 0 | | 24 | 12 | 43 | 0 | 0 | | 55 | 0 | 0 | 0 | 0 | | 0 | 140 |
| **Heavy %** | 0% | 10.9% | 37.5% | 0% | | 11.3% | 33.3% | 0% | 54.8% | 0% | | 53.3% | 26.1% | 17.1% | 0% | 0% | | 18.5% | 0% | 0% | 0% | 0% | | 0% | 15.9% |
| **Lights** | 0 | 472 | 5 | 0 | | 477 | 2 | 0 | 19 | 0 | | 21 | 34 | 208 | 0 | 1 | | 243 | 0 | 0 | 0 | 0 | | 0 | 741 |
| **Lights %** | 0% | 89.1% | 62.5% | 0% | | 88.7% | 66.7% | 0% | 45.2% | 0% | | 46.7% | 73.9% | 82.9% | 0% | 100% | | 81.5% | 0% | 0% | 0% | 0% | | 0% | 84.1% |
| **Single-Unit Trucks** | 0 | 23 | 2 | 0 | | 25 | 0 | 0 | 10 | 0 | | 10 | 6 | 14 | 0 | 0 | | 20 | 0 | 0 | 0 | 0 | | 0 | 55 |
| **Single-Unit Trucks %** | 0% | 4.3% | 25% | 0% | | 4.6% | 0% | 0% | 23.8% | 0% | | 22.2% | 13% | 5.6% | 0% | 0% | | 6.7% | 0% | 0% | 0% | 0% | | 0% | 6.2% |
| **Buses** | 0 | 6 | 0 | 0 | | 6 | 0 | 0 | 1 | 0 | | 1 | 0 | 11 | 0 | 0 | | 11 | 0 | 0 | 0 | 0 | | 0 | 18 |
| **Buses %** | 0% | 1.1% | 0% | 0% | | 1.1% | 0% | 0% | 2.4% | 0% | | 2.2% | 0% | 4.4% | 0% | 0% | | 3.7% | 0% | 0% | 0% | 0% | | 0% | 2% |
| **Articulated Trucks** | 0 | 29 | 1 | 0 | | 30 | 1 | 0 | 12 | 0 | | 13 | 6 | 18 | 0 | 0 | | 24 | 0 | 0 | 0 | 0 | | 0 | 67 |
| **Articulated Trucks %** | 0% | 5.5% | 12.5% | 0% | | 5.6% | 33.3% | 0% | 28.6% | 0% | | 28.9% | 13% | 7.2% | 0% | 0% | | 8.1% | 0% | 0% | 0% | 0% | | 0% | 7.6% |
| **Pedestrians** | - | - | - | - | 0 | - | - | - | - | - | 9 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | **-** |
| **Pedestrians%** | - | - | - | - | 0% | | - | - | - | - | 100% | | - | - | - | - | 0% | | - | - | - | - | 0% | | **-** |

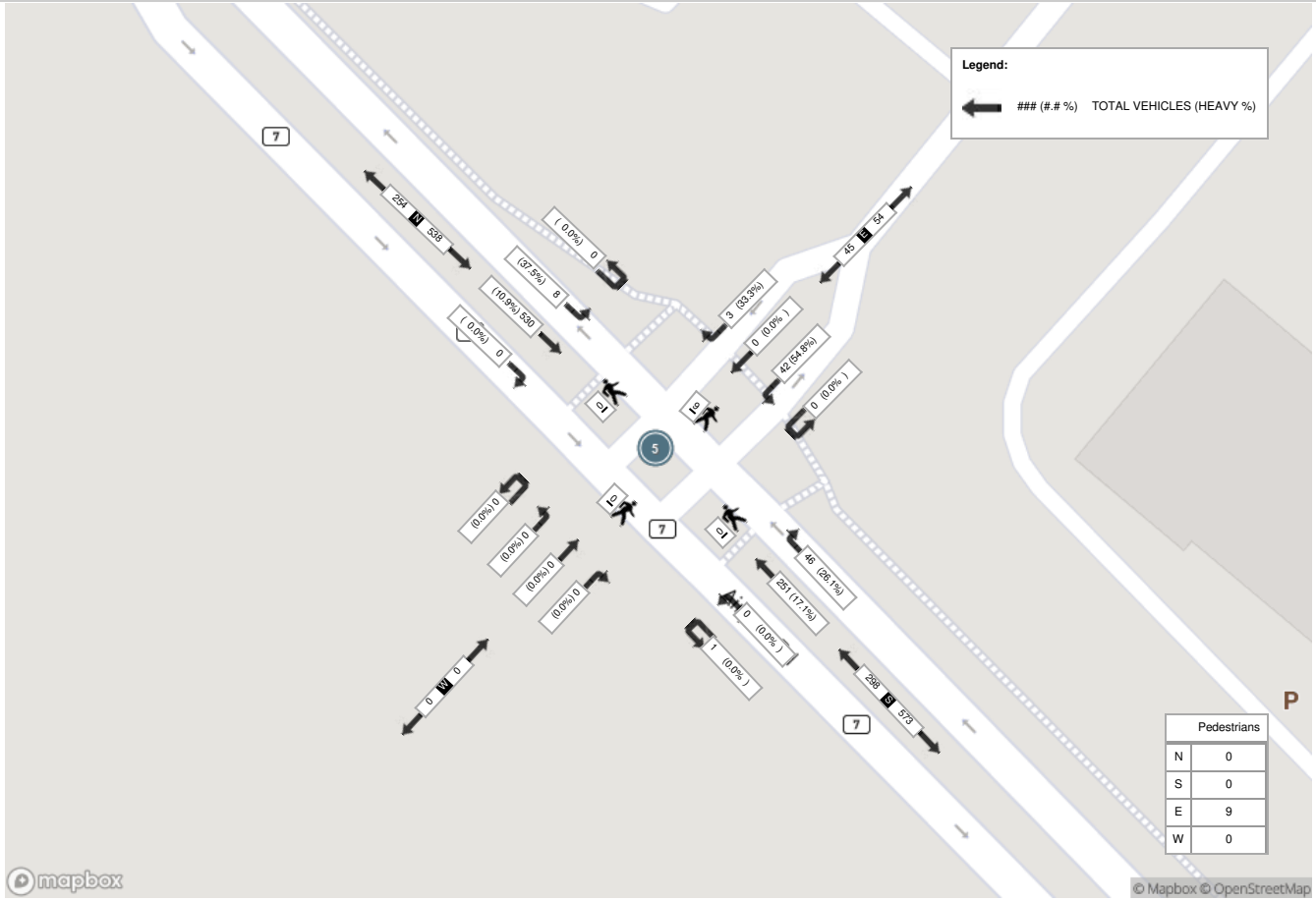
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:00 PM - 05:00 PM Weather: Mist (8.21 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach 12333 AIRPORT ROAD SITE ACCESS | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach 12333 AIRPORT ROAD SITE ACCESS | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 16:00:00 | 0 | 89 | 1 | 0 | 0 | 90 | 0 | 0 | 11 | 0 | 0 | 11 | 2 | 126 | 0 | 0 | 0 | 128 | 0 | 0 | 0 | 0 | 1 | 0 | 229 |
| 2024-11-20 16:15:00 | 0 | 88 | 0 | 0 | 0 | 88 | 1 | 0 | 9 | 0 | 1 | 10 | 8 | 153 | 0 | 0 | 0 | 161 | 0 | 0 | 0 | 0 | 0 | 0 | 259 |
| 2024-11-20 16:30:00 | 0 | 90 | 1 | 0 | 0 | 91 | 4 | 0 | 18 | 0 | 0 | 22 | 8 | 117 | 0 | 1 | 0 | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 239 |
| 2024-11-20 16:45:00 | 0 | 84 | 1 | 0 | 0 | 85 | 2 | 0 | 7 | 0 | 2 | 9 | 9 | 154 | 0 | 1 | 0 | 164 | 0 | 0 | 0 | 0 | 0 | 0 | 258 |
| **Grand Total** | 0 | 351 | 3 | 0 | 0 | 354 | 7 | 0 | 45 | 0 | 3 | 52 | 27 | 550 | 0 | 2 | 0 | 579 | 0 | 0 | 0 | 0 | 1 | 0 | **985** |
| **Approach%** | 0% | 99.2% | 0.8% | 0% | | - | 13.5% | 0% | 86.5% | 0% | | - | 4.7% | 95% | 0% | 0.3% | | - | 0% | 0% | 0% | 0% | | - | **-** |
| **Totals %** | 0% | 35.6% | 0.3% | 0% | | 35.9% | 0.7% | 0% | 4.6% | 0% | | 5.3% | 2.7% | 55.8% | 0% | 0.2% | | 58.8% | 0% | 0% | 0% | 0% | | 0% | **-** |
| **PHF** | 0 | 0.98 | 0.75 | 0 | | 0.97 | 0.44 | 0 | 0.63 | 0 | | 0.59 | 0.75 | 0.89 | 0 | 0.5 | | 0.88 | 0 | 0 | 0 | 0 | | 0 | 0.95 |
| **Heavy** | 0 | 52 | 1 | 0 | | 53 | 0 | 0 | 18 | 0 | | 18 | 13 | 37 | 0 | 0 | | 50 | 0 | 0 | 0 | 0 | | 0 | 121 |
| **Heavy %** | 0% | 14.8% | 33.3% | 0% | | 15% | 0% | 0% | 40% | 0% | | 34.6% | 48.1% | 6.7% | 0% | 0% | | 8.6% | 0% | 0% | 0% | 0% | | 0% | 12.3% |
| **Lights** | 0 | 299 | 2 | 0 | | 301 | 7 | 0 | 27 | 0 | | 34 | 14 | 513 | 0 | 2 | | 529 | 0 | 0 | 0 | 0 | | 0 | 864 |
| **Lights %** | 0% | 85.2% | 66.7% | 0% | | 85% | 100% | 0% | 60% | 0% | | 65.4% | 51.9% | 93.3% | 0% | 100% | | 91.4% | 0% | 0% | 0% | 0% | | 0% | 87.7% |
| **Single-Unit Trucks** | 0 | 17 | 1 | 0 | | 18 | 0 | 0 | 8 | 0 | | 8 | 4 | 12 | 0 | 0 | | 16 | 0 | 0 | 0 | 0 | | 0 | 42 |
| **Single-Unit Trucks %** | 0% | 4.8% | 33.3% | 0% | | 5.1% | 0% | 0% | 17.8% | 0% | | 15.4% | 14.8% | 2.2% | 0% | 0% | | 2.8% | 0% | 0% | 0% | 0% | | 0% | 4.3% |
| **Buses** | 0 | 18 | 0 | 0 | | 18 | 0 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | 0 | | 1 | 0 | 0 | 0 | 0 | | 0 | 19 |
| **Buses %** | 0% | 5.1% | 0% | 0% | | 5.1% | 0% | 0% | 0% | 0% | | 0% | 0% | 0.2% | 0% | 0% | | 0.2% | 0% | 0% | 0% | 0% | | 0% | 1.9% |
| **Articulated Trucks** | 0 | 17 | 0 | 0 | | 17 | 0 | 0 | 10 | 0 | | 10 | 9 | 24 | 0 | 0 | | 33 | 0 | 0 | 0 | 0 | | 0 | 60 |
| **Articulated Trucks %** | 0% | 4.8% | 0% | 0% | | 4.8% | 0% | 0% | 22.2% | 0% | | 19.2% | 33.3% | 4.4% | 0% | 0% | | 5.7% | 0% | 0% | 0% | 0% | | 0% | 6.1% |
| **Pedestrians** | - | - | - | - | 0 | - | - | - | - | - | 3 | - | - | - | - | - | 0 | - | - | - | - | - | 1 | - | **-** |
| **Pedestrians%** | - | - | - | - | 0% | | - | - | - | - | 75% | | - | - | - | - | 0% | | - | - | - | - | 25% | | **-** |

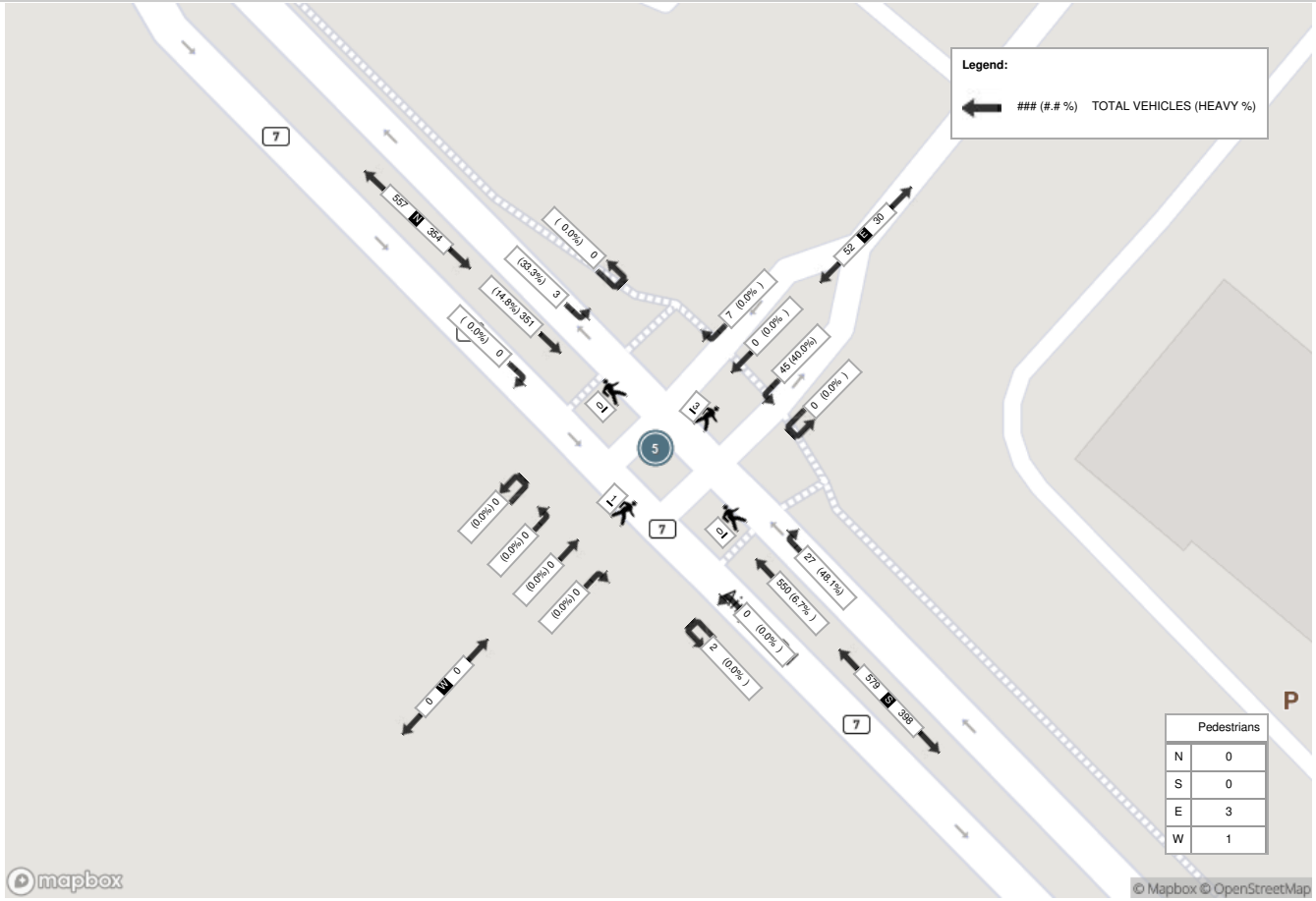
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:15 AM - 08:15 AM** **Weather: Overcast Clouds (7.52 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:00 PM - 05:00 PM** **Weather: Mist (8.21 °C)**



Spectrum

Turning Movement Count
Location Name: AIRPORT ROAD & PERDUE COURT / DAVIS LANE
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

## Turning Movement Count (6 . AIRPORT ROAD & PERDUE COURT / DAVIS LANE) CustID: 00717933 MioID: 1250811

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach DAVIS LANE | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach PERDUE COURT | | | | | | Int. Total (15 min) | Int. Total (1 hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right N:W | Thru N:S | Left N:E | U-Turn N:N | Peds N: | Approach Total | Right E:N | Thru E:W | Left E:S | U-Turn E:E | Peds E: | Approach Total | Right S:E | Thru S:N | Left S:W | U-Turn S:S | Peds S: | Approach Total | Right W:S | Thru W:E | Left W:N | U-Turn W:W | Peds W: | Approach Total | | |
| 2024-11-20 07:00:00 | 1 | 94 | 0 | 0 | 0 | 95 | 8 | 0 | 12 | 0 | 1 | 20 | 13 | 81 | 9 | 0 | 0 | 103 | 6 | 0 | 0 | 0 | 0 | 6 | 224 | |
| 2024-11-20 07:15:00 | 1 | 135 | 0 | 0 | 0 | 136 | 3 | 0 | 20 | 0 | 2 | 23 | 10 | 70 | 7 | 0 | 0 | 87 | 9 | 1 | 1 | 0 | 0 | 11 | 257 | |
| 2024-11-20 07:30:00 | 1 | 173 | 0 | 0 | 0 | 174 | 1 | 0 | 6 | 0 | 6 | 7 | 9 | 65 | 8 | 0 | 0 | 82 | 5 | 0 | 1 | 0 | 0 | 6 | 269 | |
| 2024-11-20 07:45:00 | 1 | 122 | 1 | 0 | 0 | 124 | 1 | 0 | 6 | 0 | 4 | 7 | 5 | 97 | 18 | 1 | 0 | 121 | 5 | 0 | 0 | 0 | 0 | 5 | 257 | 1007 |
| 2024-11-20 08:00:00 | 0 | 120 | 1 | 0 | 0 | 121 | 1 | 0 | 4 | 0 | 2 | 5 | 5 | 73 | 19 | 0 | 1 | 97 | 7 | 0 | 1 | 0 | 2 | 8 | 231 | 1014 |
| 2024-11-20 08:15:00 | 1 | 140 | 2 | 0 | 0 | 143 | 0 | 0 | 5 | 0 | 0 | 5 | 13 | 69 | 25 | 0 | 0 | 107 | 11 | 0 | 0 | 0 | 0 | 11 | 266 | 1023 |
| 2024-11-20 08:30:00 | 1 | 132 | 4 | 0 | 0 | 137 | 2 | 0 | 8 | 0 | 1 | 10 | 9 | 66 | 21 | 0 | 0 | 96 | 6 | 0 | 4 | 0 | 0 | 10 | 253 | 1007 |
| 2024-11-20 08:45:00 | 2 | 113 | 3 | 0 | 0 | 118 | 3 | 0 | 10 | 0 | 0 | 13 | 19 | 61 | 13 | 0 | 0 | 93 | 8 | 0 | 0 | 0 | 1 | 8 | 232 | 982 |
| 2024-11-20 09:00:00 | 4 | 118 | 8 | 0 | 0 | 130 | 1 | 0 | 17 | 0 | 0 | 18 | 29 | 66 | 14 | 0 | 0 | 109 | 4 | 0 | 2 | 2 | 0 | 8 | 265 | 1016 |
| 2024-11-20 09:15:00 | 0 | 102 | 7 | 0 | 0 | 109 | 1 | 0 | 26 | 0 | 0 | 27 | 31 | 35 | 8 | 0 | 0 | 74 | 6 | 0 | 2 | 0 | 1 | 8 | 218 | 968 |
| 2024-11-20 09:30:00 | 0 | 83 | 1 | 0 | 0 | 84 | 1 | 0 | 29 | 0 | 2 | 30 | 18 | 36 | 6 | 0 | 0 | 60 | 9 | 0 | 1 | 0 | 2 | 10 | 184 | 899 |
| 2024-11-20 09:45:00 | 2 | 74 | 1 | 0 | 0 | 77 | 2 | 0 | 16 | 0 | 0 | 18 | 9 | 58 | 11 | 0 | 0 | 78 | 7 | 0 | 0 | 0 | 0 | 7 | 180 | 847 |
| ***BREAK*** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2024-11-20 16:00:00 | 1 | 90 | 2 | 2 | 0 | 95 | 1 | 0 | 12 | 0 | 0 | 13 | 17 | 114 | 11 | 0 | 0 | 142 | 11 | 0 | 2 | 0 | 0 | 13 | 263 | |
| 2024-11-20 16:15:00 | 1 | 100 | 4 | 0 | 0 | 105 | 3 | 0 | 19 | 0 | 1 | 22 | 16 | 169 | 7 | 0 | 0 | 192 | 15 | 0 | 3 | 0 | 0 | 18 | 337 | |
| 2024-11-20 16:30:00 | 1 | 116 | 5 | 1 | 0 | 123 | 1 | 0 | 23 | 0 | 4 | 24 | 16 | 139 | 5 | 2 | 0 | 162 | 13 | 0 | 1 | 0 | 0 | 14 | 323 | |
| 2024-11-20 16:45:00 | 1 | 98 | 5 | 1 | 0 | 105 | 4 | 0 | 16 | 0 | 5 | 20 | 10 | 166 | 12 | 0 | 0 | 188 | 14 | 0 | 1 | 0 | 0 | 15 | 328 | 1251 |
| 2024-11-20 17:00:00 | 6 | 67 | 6 | 6 | 0 | 85 | 0 | 0 | 22 | 0 | 2 | 22 | 7 | 134 | 12 | 1 | 0 | 154 | 19 | 0 | 1 | 0 | 0 | 20 | 281 | 1269 |
| 2024-11-20 17:15:00 | 0 | 113 | 0 | 1 | 0 | 114 | 5 | 0 | 10 | 0 | 0 | 15 | 7 | 119 | 9 | 0 | 0 | 135 | 16 | 0 | 0 | 0 | 0 | 16 | 280 | 1212 |
| 2024-11-20 17:30:00 | 1 | 90 | 2 | 2 | 1 | 95 | 0 | 0 | 8 | 0 | 2 | 8 | 5 | 130 | 11 | 0 | 0 | 146 | 16 | 0 | 0 | 0 | 0 | 16 | 265 | 1154 |
| 2024-11-20 17:45:00 | 1 | 104 | 0 | 0 | 0 | 105 | 0 | 0 | 10 | 0 | 0 | 10 | 4 | 94 | 13 | 0 | 0 | 111 | 8 | 0 | 1 | 0 | 0 | 9 | 235 | 1061 |
| 2024-11-20 18:00:00 | 2 | 95 | 1 | 1 | 0 | 99 | 0 | 0 | 4 | 0 | 0 | 4 | 1 | 104 | 4 | 0 | 1 | 109 | 10 | 0 | 0 | 0 | 2 | 10 | 222 | 1002 |
| 2024-11-20 18:15:00 | 0 | 71 | 0 | 0 | 0 | 71 | 0 | 0 | 4 | 0 | 0 | 4 | 5 | 98 | 9 | 1 | 0 | 113 | 7 | 0 | 1 | 0 | 0 | 8 | 196 | 918 |
| 2024-11-20 18:30:00 | 0 | 81 | 0 | 0 | 0 | 81 | 1 | 0 | 4 | 0 | 0 | 5 | 3 | 108 | 8 | 1 | 0 | 120 | 9 | 0 | 0 | 0 | 0 | 9 | 215 | 868 |
| 2024-11-20 18:45:00 | 1 | 64 | 0 | 0 | 0 | 65 | 0 | 0 | 3 | 0 | 1 | 3 | 1 | 82 | 7 | 0 | 0 | 90 | 11 | 0 | 0 | 0 | 0 | 11 | 169 | 802 |
| **Grand Total** | 29 | 2495 | 53 | 14 | 1 | 2591 | 39 | 0 | 294 | 0 | 33 | 333 | 262 | 2234 | 267 | 6 | 2 | 2769 | 232 | 1 | 22 | 2 | 8 | 257 | **5950** | - |
| **Approach%** | 1.1% | 96.3% | 2% | 0.5% | | - | 11.7% | 0% | 88.3% | 0% | | - | 9.5% | 80.7% | 9.6% | 0.2% | | - | 90.3% | 0.4% | 8.6% | 0.8% | | - | - | - |
| **Totals %** | 0.5% | 41.9% | 0.9% | 0.2% | | 43.5% | 0.7% | 0% | 4.9% | 0% | | 5.6% | 4.4% | 37.5% | 4.5% | 0.1% | | 46.5% | 3.9% | 0% | 0.4% | 0% | | 4.3% | - | - |
| **Heavy** | 16 | 341 | 43 | 0 | | - | 23 | 0 | 88 | 0 | | - | 181 | 279 | 97 | 0 | | - | 70 | 0 | 7 | 2 | | - | - | - |
| **Heavy %** | 55.2% | 13.7% | 81.1% | 0% | | - | 59% | 0% | 29.9% | 0% | | - | 69.1% | 12.5% | 36.3% | 0% | | - | 30.2% | 0% | 31.8% | 100% | | - | - | - |
| **Bicycles** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |
| **Bicycle %** | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - | - | - | | - | - | - |

Crozier & Associates
SUITE 301 211 YONGE STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 07:30 AM - 08:30 AM** **Weather: Overcast Clouds (7.52 °C)**

| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach DAVIS LANE | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach PERDUE COURT | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 07:30:00 | 1 | 173 | 0 | 0 | 0 | 174 | 1 | 0 | 6 | 0 | 6 | 7 | 9 | 65 | 8 | 0 | 0 | 82 | 5 | 0 | 1 | 0 | 0 | 6 | 269 |
| 2024-11-20 07:45:00 | 1 | 122 | 1 | 0 | 0 | 124 | 1 | 0 | 6 | 0 | 4 | 7 | 5 | 97 | 18 | 1 | 0 | 121 | 5 | 0 | 0 | 0 | 0 | 5 | 257 |
| 2024-11-20 08:00:00 | 0 | 120 | 1 | 0 | 0 | 121 | 1 | 0 | 4 | 0 | 2 | 5 | 5 | 73 | 19 | 0 | 1 | 97 | 7 | 0 | 1 | 0 | 2 | 8 | 231 |
| 2024-11-20 08:15:00 | 1 | 140 | 2 | 0 | 0 | 143 | 0 | 0 | 5 | 0 | 0 | 5 | 13 | 69 | 25 | 0 | 0 | 107 | 11 | 0 | 0 | 0 | 0 | 11 | 266 |
| **Grand Total** | 3 | 555 | 4 | 0 | 0 | 562 | 3 | 0 | 21 | 0 | 12 | 24 | 32 | 304 | 70 | 1 | 1 | 407 | 28 | 0 | 2 | 0 | 2 | 30 | **1023** |
| **Approach%** | 0.5% | 98.8% | 0.7% | 0% | | - | 12.5% | 0% | 87.5% | 0% | | - | 7.9% | 74.7% | 17.2% | 0.2% | | - | 93.3% | 0% | 6.7% | 0% | | - | **-** |
| **Totals %** | 0.3% | 54.3% | 0.4% | 0% | | 54.9% | 0.3% | 0% | 2.1% | 0% | | 2.3% | 3.1% | 29.7% | 6.8% | 0.1% | | 39.8% | 2.7% | 0% | 0.2% | 0% | | 2.9% | **-** |
| **PHF** | 0.75 | 0.8 | 0.5 | 0 | | 0.81 | 0.75 | 0 | 0.88 | 0 | | 0.86 | 0.62 | 0.78 | 0.7 | 0.25 | | 0.84 | 0.64 | 0 | 0.5 | 0 | | 0.68 | 0.95 |
| **Heavy** | 0 | 70 | 2 | 0 | | 72 | 3 | 0 | 14 | 0 | | 17 | 11 | 46 | 15 | 0 | | 72 | 21 | 0 | 2 | 0 | | 23 | 184 |
| **Heavy %** | 0% | 12.6% | 50% | 0% | | 12.8% | 100% | 0% | 66.7% | 0% | | 70.8% | 34.4% | 15.1% | 21.4% | 0% | | 17.7% | 75% | 0% | 100% | 0% | | 76.7% | 18% |
| **Lights** | 3 | 485 | 2 | 0 | | 490 | 0 | 0 | 7 | 0 | | 7 | 21 | 258 | 55 | 1 | | 335 | 7 | 0 | 0 | 0 | | 7 | 839 |
| **Lights %** | 100% | 87.4% | 50% | 0% | | 87.2% | 0% | 0% | 33.3% | 0% | | 29.2% | 65.6% | 84.9% | 78.6% | 100% | | 82.3% | 25% | 0% | 0% | 0% | | 23.3% | 82% |
| **Single-Unit Trucks** | 0 | 32 | 1 | 0 | | 33 | 0 | 0 | 0 | 0 | | 0 | 0 | 18 | 12 | 0 | | 30 | 11 | 0 | 2 | 0 | | 13 | 76 |
| **Single-Unit Trucks %** | 0% | 5.8% | 25% | 0% | | 5.9% | 0% | 0% | 0% | 0% | | 0% | 0% | 5.9% | 17.1% | 0% | | 7.4% | 39.3% | 0% | 100% | 0% | | 43.3% | 7.4% |
| **Buses** | 0 | 3 | 1 | 0 | | 4 | 2 | 0 | 10 | 0 | | 12 | 11 | 7 | 0 | 0 | | 18 | 0 | 0 | 0 | 0 | | 0 | 34 |
| **Buses %** | 0% | 0.5% | 25% | 0% | | 0.7% | 66.7% | 0% | 47.6% | 0% | | 50% | 34.4% | 2.3% | 0% | 0% | | 4.4% | 0% | 0% | 0% | 0% | | 0% | 3.3% |
| **Articulated Trucks** | 0 | 35 | 0 | 0 | | 35 | 1 | 0 | 4 | 0 | | 5 | 0 | 21 | 3 | 0 | | 24 | 10 | 0 | 0 | 0 | | 10 | 74 |
| **Articulated Trucks %** | 0% | 6.3% | 0% | 0% | | 6.2% | 33.3% | 0% | 19% | 0% | | 20.8% | 0% | 6.9% | 4.3% | 0% | | 5.9% | 35.7% | 0% | 0% | 0% | | 33.3% | 7.2% |
| **Bicycles on Road** | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |
| **Bicycles on Road %** | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% |
| **Pedestrians** | - | - | - | - | 0 | - | - | - | - | - | 12 | - | - | - | - | - | 1 | - | - | - | - | - | 2 | - | **-** |
| **Pedestrians%** | - | - | - | - | 0% | | - | - | - | - | 80% | | - | - | - | - | 6.7% | | - | - | - | - | 13.3% | | **-** |

Spectrum

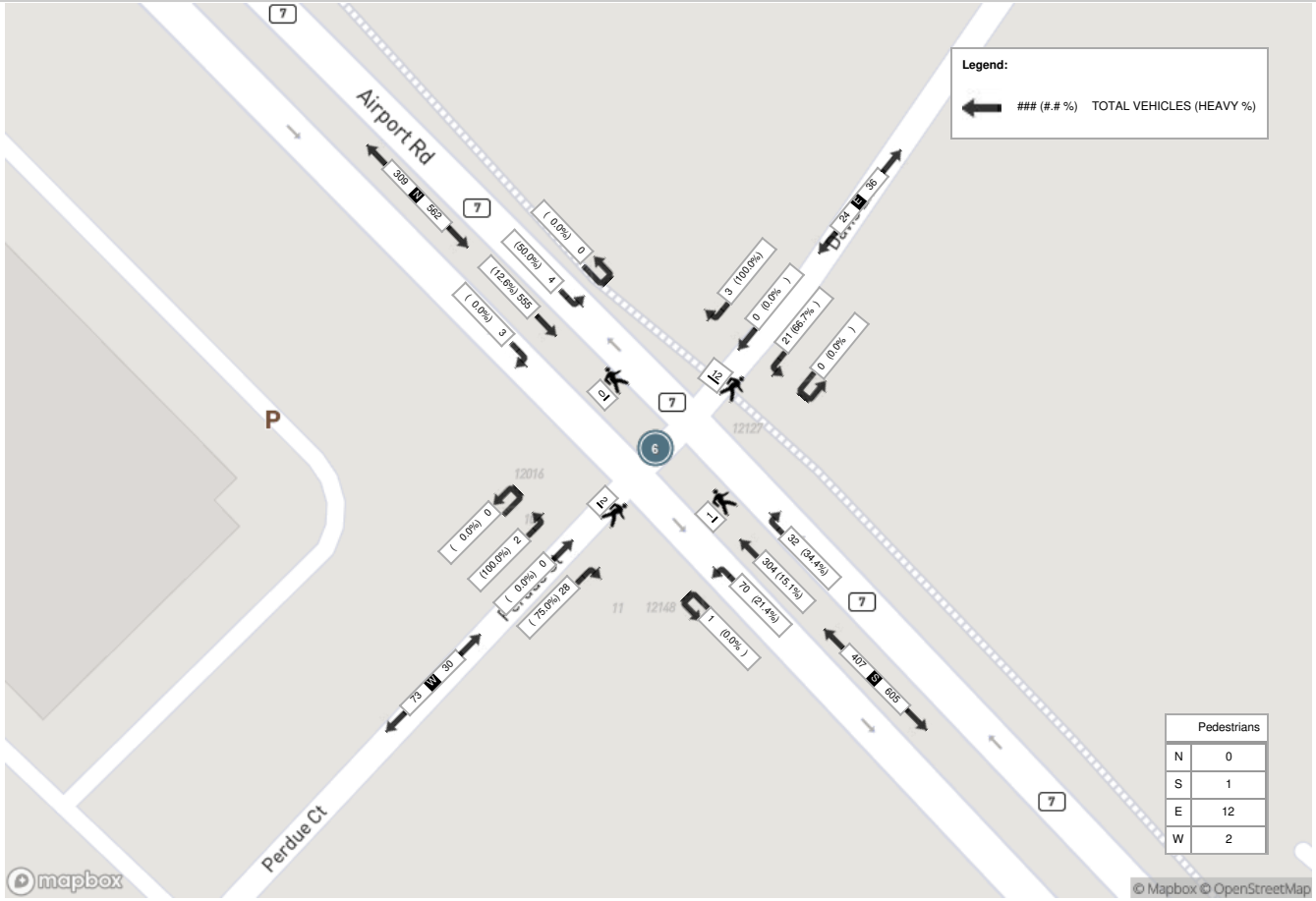
Turning Movement Count
Location Name: AIRPORT ROAD & PERDUE COURT / DAVIS LANE
Date: Wed, Nov 20, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:15 PM - 05:15 PM Weather: Mist (8.21 °C)**

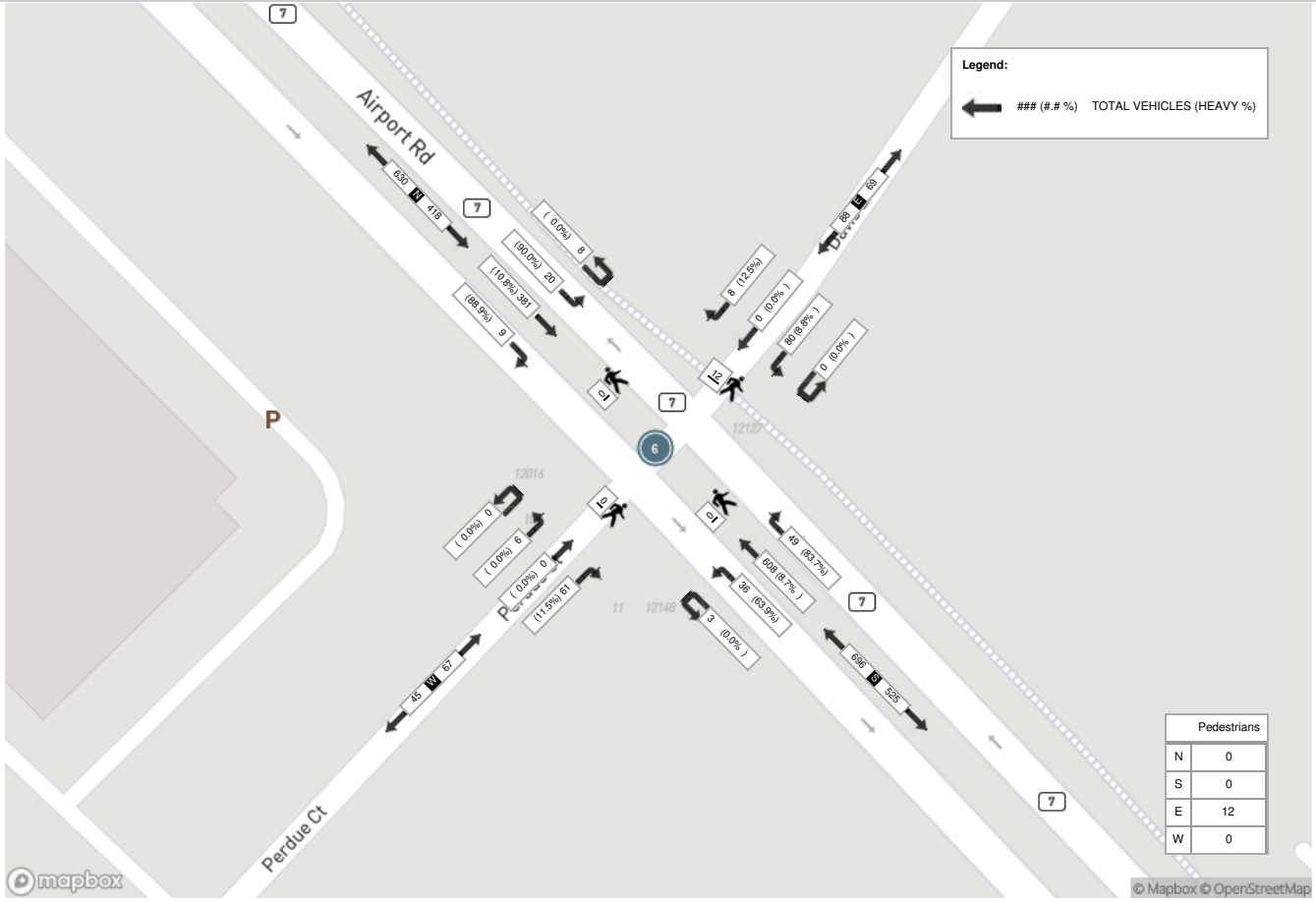
| Start Time | N Approach AIRPORT ROAD | | | | | | E Approach DAVIS LANE | | | | | | S Approach AIRPORT ROAD | | | | | | W Approach PERDUE COURT | | | | | | Int. Total (15 min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | Right | Thru | Left | U-Turn | Peds | Approach Total | |
| 2024-11-20 16:15:00 | 1 | 100 | 4 | 0 | 0 | 105 | 3 | 0 | 19 | 0 | 1 | 22 | 16 | 169 | 7 | 0 | 0 | 192 | 15 | 0 | 3 | 0 | 0 | 18 | 337 |
| 2024-11-20 16:30:00 | 1 | 116 | 5 | 1 | 0 | 123 | 1 | 0 | 23 | 0 | 4 | 24 | 16 | 139 | 5 | 2 | 0 | 162 | 13 | 0 | 1 | 0 | 0 | 14 | 323 |
| 2024-11-20 16:45:00 | 1 | 98 | 5 | 1 | 0 | 105 | 4 | 0 | 16 | 0 | 5 | 20 | 10 | 166 | 12 | 0 | 0 | 188 | 14 | 0 | 1 | 0 | 0 | 15 | 328 |
| 2024-11-20 17:00:00 | 6 | 67 | 6 | 6 | 0 | 85 | 0 | 0 | 22 | 0 | 2 | 22 | 7 | 134 | 12 | 1 | 0 | 154 | 19 | 0 | 1 | 0 | 0 | 20 | 281 |
| **Grand Total** | 9 | 381 | 20 | 8 | 0 | 418 | 8 | 0 | 80 | 0 | 12 | 88 | 49 | 608 | 36 | 3 | 0 | 696 | 61 | 0 | 6 | 0 | 0 | 67 | **1269** |
| **Approach%** | 2.2% | 91.1% | 4.8% | 1.9% | | - | 9.1% | 0% | 90.9% | 0% | | - | 7% | 87.4% | 5.2% | 0.4% | | - | 91% | 0% | 9% | 0% | | - | **-** |
| **Totals %** | 0.7% | 30% | 1.6% | 0.6% | | 32.9% | 0.6% | 0% | 6.3% | 0% | | 6.9% | 3.9% | 47.9% | 2.8% | 0.2% | | 54.8% | 4.8% | 0% | 0.5% | 0% | | 5.3% | **-** |
| **PHF** | 0.38 | 0.82 | 0.83 | 0.33 | | 0.85 | 0.5 | 0 | 0.87 | 0 | | 0.92 | 0.77 | 0.9 | 0.75 | 0.38 | | 0.91 | 0.8 | 0 | 0.5 | 0 | | 0.84 | 0.94 |
| **Heavy** | 8 | 41 | 18 | 0 | | 67 | 1 | 0 | 7 | 0 | | 8 | 41 | 53 | 23 | 0 | | 117 | 7 | 0 | 0 | 0 | | 7 | 199 |
| **Heavy %** | 88.9% | 10.8% | 90% | 0% | | 16% | 12.5% | 0% | 8.8% | 0% | | 9.1% | 83.7% | 8.7% | 63.9% | 0% | | 16.8% | 11.5% | 0% | 0% | 0% | | 10.4% | 15.7% |
| **Lights** | 1 | 340 | 2 | 8 | | 351 | 7 | 0 | 73 | 0 | | 80 | 8 | 555 | 13 | 3 | | 579 | 54 | 0 | 6 | 0 | | 60 | 1070 |
| **Lights %** | 11.1% | 89.2% | 10% | 100% | | 84% | 87.5% | 0% | 91.3% | 0% | | 90.9% | 16.3% | 91.3% | 36.1% | 100% | | 83.2% | 88.5% | 0% | 100% | 0% | | 89.6% | 84.3% |
| **Single-Unit Trucks** | 3 | 23 | 2 | 0 | | 28 | 0 | 0 | 2 | 0 | | 2 | 0 | 17 | 5 | 0 | | 22 | 2 | 0 | 0 | 0 | | 2 | 54 |
| **Single-Unit Trucks %** | 33.3% | 6% | 10% | 0% | | 6.7% | 0% | 0% | 2.5% | 0% | | 2.3% | 0% | 2.8% | 13.9% | 0% | | 3.2% | 3.3% | 0% | 0% | 0% | | 3% | 4.3% |
| **Buses** | 0 | 1 | 16 | 0 | | 17 | 1 | 0 | 3 | 0 | | 4 | 39 | 0 | 0 | 0 | | 39 | 0 | 0 | 0 | 0 | | 0 | 60 |
| **Buses %** | 0% | 0.3% | 80% | 0% | | 4.1% | 12.5% | 0% | 3.8% | 0% | | 4.5% | 79.6% | 0% | 0% | 0% | | 5.6% | 0% | 0% | 0% | 0% | | 0% | 4.7% |
| **Articulated Trucks** | 5 | 17 | 0 | 0 | | 22 | 0 | 0 | 2 | 0 | | 2 | 2 | 36 | 18 | 0 | | 56 | 5 | 0 | 0 | 0 | | 5 | 85 |
| **Articulated Trucks %** | 55.6% | 4.5% | 0% | 0% | | 5.3% | 0% | 0% | 2.5% | 0% | | 2.3% | 4.1% | 5.9% | 50% | 0% | | 8% | 8.2% | 0% | 0% | 0% | | 7.5% | 6.7% |
| **Bicycles on Road** | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 |
| **Bicycles on Road %** | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | 0% | | 0% | 0% |
| **Pedestrians** | - | - | - | - | 0 | - | - | - | - | - | 12 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | **-** |
| **Pedestrians%** | - | - | - | - | 0% | | - | - | - | - | 100% | | - | - | - | - | 0% | | - | - | - | - | 0% | | **-** |

**Peak Hour: 07:30 AM - 08:30 AM** **Weather: Overcast Clouds (7.52 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

**Peak Hour: 04:15 PM - 05:15 PM** **Weather: Mist (8.21 °C)**



# REGIONAL MUNICIPALITY OF PEEL

**Traffic Signal Timing Parameters**

| | | | | |
|---|---|---|---|---|
| **Database Date** | **Oct. 08, 2024** | | **Prepared Date** | **Oct. 08, 2024** |
| **Database Rev** | **MaxView** | | **Completed By** | **A.P** |
| **Timing Card / Field rev** | **N/A** | | **Checked By** | **S.A** |

**Location** — **Airport Road @ Mayfield Road**

| Phase # | Street Name - Direction | Vehicle Minimum (s) | Pedestrian Minimum (s) | | Amber (s) | All Red (s) | TIME PERIOD (s) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | WALK | FDWALK | | | AM SPLITS | OFF SPLITS | PM SPLITS |
| 1 | Airport Road - NB P.P. LT. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 12.0 | 12.0 | 12.0 |
| 2 | Airport Road - SB | 12.0 | 12.0 | 23.0 | 4.0 | 2.9 | 43.0 | 43.0 | 43.0 |
| 3 | Mayfield Road - EB P.P. LT. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 15.0 | 15.0 | 25.0 |
| 4 | Mayfield Road - WB | 12.0 | 12.0 | 27.0 | 4.0 | 3.1 | 50.0 | 50.0 | 55.0 |
| 5 | Airport Road - SB P.P.LT. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 12.0 | 12.0 | 12.0 |
| 6 | Airport Road - NB | 12.0 | 12.0 | 23.0 | 4.0 | 2.9 | 43.0 | 43.0 | 43.0 |
| 7 | Mayfield Road - WB P.P. LT. | 5.0 | 0.0 | 0.0 | 3.0 | 0.0 | 15.0 | 15.0 | 25.0 |
| 8 | Mayfield Road - EB | 12.0 | 12.0 | 27.0 | 4.0 | 3.1 | 50.0 | 50.0 | 55.0 |

**System Control**
Yes

**Semi-Actuated Mode**
Yes

| TIME (M-F) | PEAK | CYCLE LENGTH (s) | OFFSET (s) |
|---|---|---|---|
| 06:30 - 09:00 | AM | 120 | 30 |
| 09:00 - 15:00 | OFF | 120 | 94 |
| 15:00 - 19:30 | PM | 135 | 65 |

# REGIONAL MUNICIPALITY OF PEEL

**Traffic Signal Timing Parameters**

| | | | | |
|---|---|---|---|---|
| **Database Date** | **Nov. 07, 2024** | | **Prepared Date** | **Nov. 07, 2024** |
| **Database Rev** | **Rev. 2** | | **Completed By** | **A.P** |
| **Timing Card / Field rev** | **N/A** | | **Checked By** | **M.H** |

**Location** — **Airport Road @ Old School Road/ Healey Road**

| Phase # | Street Name - Direction | Vehicle Minimum (s) | Pedestrian Minimum (s) | | Amber (s) | All Red (s) | TIME PERIOD (s) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | WALK | FDWALK | | | AM SPLITS | OFF SPLITS | PM SPLITS |
| 1 | Not in Use | - | - | - | - | - | - | - | - |
| 2 | Airport Road - SB | 12.0 | 10.0 | 5.0 | 4.6 | 3.1 | 70.0 | 40.0 | 60.0 |
| 3 | Old School Road - EB + OL SB RT | 8.0 | 10.0 | 10.0 | 4.2 | 2.0 | 25.0 | 15.0 | 28.0 |
| 4 | Healey Road - WB + OL NB RT | 8.0 | 10.0 | 10.0 | 4.2 | 2.0 | 25.0 | 25.0 | 42.0 |
| 5 | Not in Use | - | - | - | - | - | - | - | - |
| 6 | Airport Road - NB | 12.0 | 10.0 | 5.0 | 4.6 | 3.1 | 70.0 | 40.0 | 60.0 |
| 7 | Not in Use | - | - | - | - | - | - | - | - |
| 8 | Computer Phase | 8.0 | 10.0 | 10.0 | 4.2 | 2.0 | 50.0 | 40.0 | 70.0 |

**System Control**
No

**Semi-Actuated Mode**
Yes

| TIME (M-F) | PEAK | CYCLE LENGTH (s) | OFFSET (s) |
|---|---|---|---|
| 06:00 - 09:00 | AM | 120 | 0 |
| 09:00 - 15:00 | OFF | 80 | 0 |
| 15:00 - 19:00 | PM | 130 | 0 |

# REGIONAL MUNICIPALITY OF PEEL

**Traffic Signal Timing Parameters**

| | | | | |
|---|---|---|---|---|
| **Database Date** | **Oct. 16, 2024** | | **Prepared Date** | **Oct. 16, 2024** |
| **Database Rev** | **MaxView** | | **Completed By** | **A.P** |
| **Timing Card / Field rev** | **N/A** | | **Checked By** | **S.A** |

| **Location** | **Airport Road @ Street "A"** |
|---|---|

| **Phase #** | **Street Name - Direction** | **Vehicle Minimum (s)** | **Pedestrian Minimum (s)** | | **Amber (s)** | **All Red (s)** | **TIME PERIOD (s) (Green+Amber+All Red)** | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | **WALK** | **FDWALK** | | | **AM SPLITS** | **OFF SPLITS** | **PM SPLITS** |
| **1** | Not in Use | - | - | - | - | - | - | - | - |
| **2** | Airport Road - SB | 12 | 8 | 21 | 4.6 | 2 | 82 | 62 | 82 |
| **3** | Not in Use | - | - | - | - | - | - | - | - |
| **4** | Street "A" | 12 | 8 | 20 | 4 | 4.2 | 38 | 38 | 38 |
| **5** | Not in Use | - | - | - | - | - | - | - | - |
| **6** | Airport Road - NB | 12 | 8 | 21 | 4.6 | 2 | 82 | 62 | 82 |
| **7** | Not in Use | - | - | - | - | - | - | - | - |
| **8** | Computer Phase | 12 | 8 | 20 | 4 | 4.2 | 38 | 38 | 38 |

**System Control**
No

**Semi-Actuated Mode**
Yes

| **TIME (M-F)** | **PEAK** | **CYCLE LENGTH (s)** | **OFFSET (s)** |
|---|---|---|---|
| 06:00 - 09:00 | AM | 120 | 113 |
| 09:00 - 15:00 | OFF | 100 | 77 |
| 15:00 - 19:00 | PM | 120 | 58 |

**Date:** October 16, 2024
**Requestor:** My-Linh Yee, Crozier
**Request Type:** Growth Rate Data Request
**Location:** Airport Road between Mayfield Road and Old School Road

My-Linh Yee,

See below the forecasted compound annual growth rate values for Airport Road between Mayfield Road and Old School Road.

| 2011 to 2021 | 2021 to 2031 | 2031 to 2041 |
|---|---|---|
| 2.0% | 1.5% | 0.5% |

These growth rates do not account for the accelerated growth rate targets set out by Bill 23, as those forecasts are not yet approved by the Regional Council. These growth rates are estimated using several sources including socioeconomic data and results from the Region of Peel's Travel Demand Forecasting Model. These rates assume a road widening occurring between 2021 and 2031. It is important to exercise professional judgment when using these values.

If you require further assistance, please contact me at transportationplanningdata@peelregion.ca

Regards,

**Karan Bedi**
Intermediate Planner, Transportation Planning
Transportation Division | Public Works | Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9

**Date:** October 16, 2024
**Requestor:** My-Linh Yee, Crozier
**Request Type:** Growth Rate Data Request
**Location:** Mayfield Road between Torbram Road and Airport Road

My-Linh Yee,

See below the forecasted compound annual growth rate values for Mayfield Road between Torbram Road and Airport Road.

| 2011 to 2021 | 2021 to 2031 | 2031 to 2041 |
|---|---|---|
| 1.0% | 1.0% | 0.5% |

These growth rates do not account for the accelerated growth rate targets set out by Bill 23, as those forecasts are not yet approved by the Regional Council. These growth rates are estimated using several sources including socioeconomic data and results from the Region of Peel's Travel Demand Forecasting Model. These rates assume a road widening occurring between 2021 and 2031. It is important to exercise professional judgment when using these values.

If you require further assistance, please contact me at transportationplanningdata@peelregion.ca

Regards,

**Karan Bedi**
Intermediate Planner, Transportation Planning
Transportation Division | Public Works | Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9

# APPENDIX C:

## Tullamore Northwest Employment Area Secondary Plan Transportation Study Excerpts

# TRANSPORTATION STUDY

# TULLAMORE NORTHWEST EMPLOYMENT AREA SECONDARY PLAN

## TOWN OF CALEDON
## REGION OF PEEL

**PREPARED FOR:**

**BROCCOLINI AIRPORT ROAD LP**

**PREPARED BY:**

**C.F. CROZIER & ASSOCIATES INC.**
**211 YONGE STREET, SUITE 301**
**TORONTO, ON M5B 1M4**

**MAY 2025**

**CFCA FILE NO. 2778-7228**

The material in this report reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

CROZIER

# 1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by the Broccolini Airport Road Limited Partnership (Broccolini) to prepare a Transportation Study in support the Tullamore Northwest Employment Area Secondary Plan, located in the Town of Caledon, Region of Peel. This study provides a review of the ability of the planned mobility framework to support the future buildout of the Secondary Plan lands, and outlines recommendations from a transportation perspective to ensure multi-modal transportation demands can be accommodated.

## 1.1 Development Lands

The Secondary Plan area covers an area of 165.7 ha and currently consists of agricultural fields, forested areas, and natural heritage areas. The Subject Lands are bound by Old School Road to the north, the proposed Tullamore Industrial Business Park to the south, Airport Road to the east and Torbram Road to the west.

**Figure 1** outlines the Secondary Plan Location.

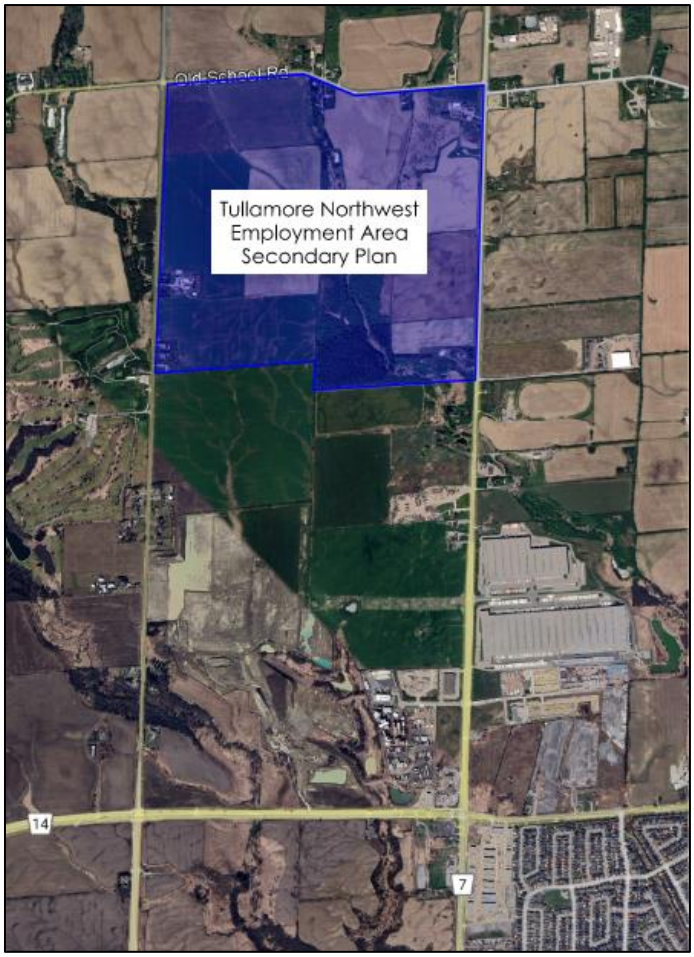



**Figure 1: Secondary Plan Location**

## 1.2 Development Proposal

Per the Land Use Schedule prepared by Glen Schnarr & Associates Inc., the Tullamore Northwest Employment Area will consist of various industrial employment uses.
**Figure 2** outlines the Land Use Schedule.

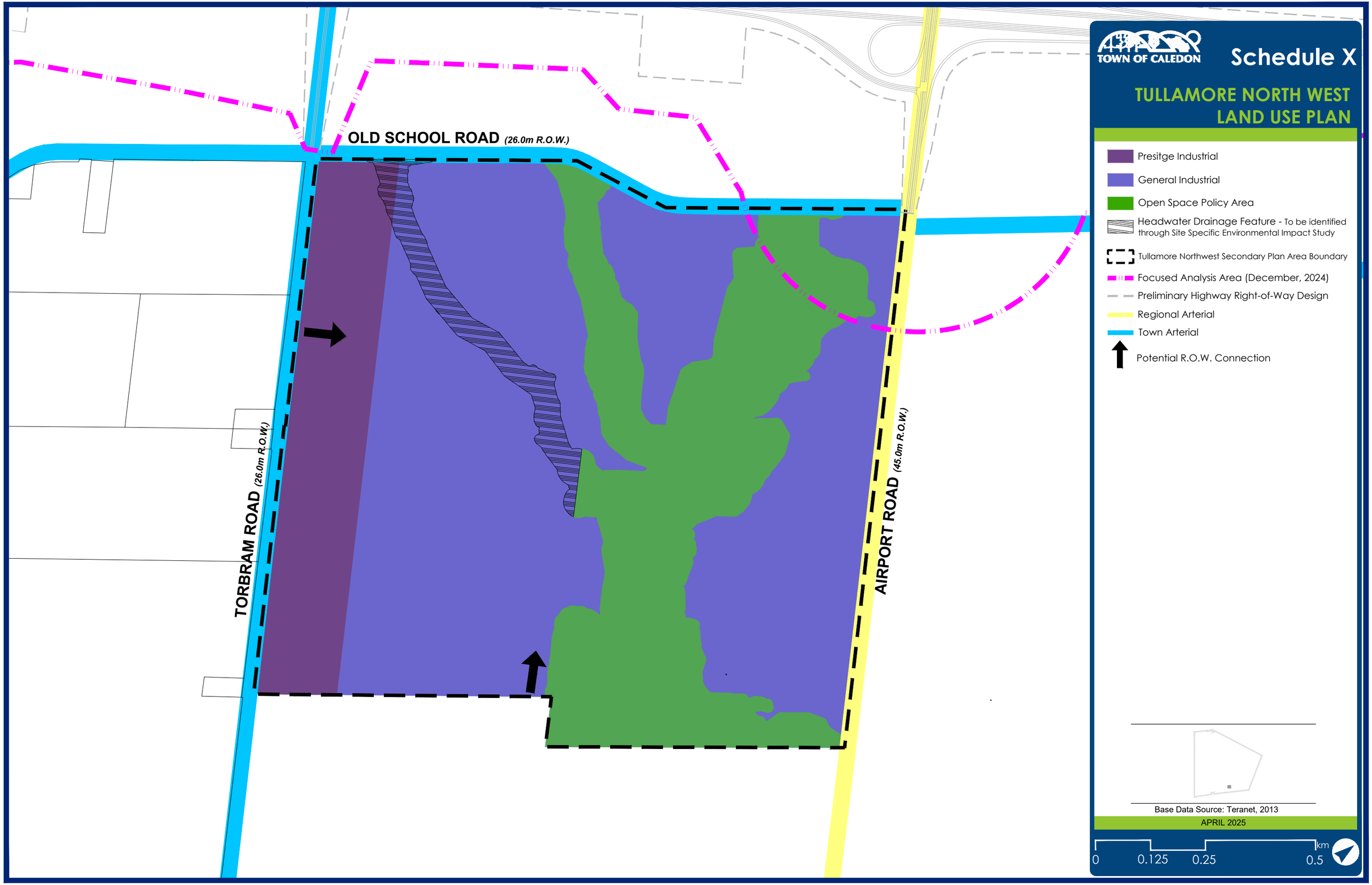

OLD SCHOOL ROAD (26.0m R.O.W.)
TORBRAM ROAD (26.0m R.O.W.)
AIRPORT ROAD (45.0m R.O.W.)
TOWN OF CALEDON
Schedule X
TULLAMORE NORTH WEST
LAND USE PLAN
Presitge Industrial
General Industrial
Open Space Policy Area
Headwater Drainage Feature - To be identified through Site Specific Environmental Impact Study
Tullamore Northwest Secondary Plan Area Boundary
Focused Analysis Area (December, 2024)
Preliminary Highway Right-of-Way Design
Regional Arterial
Town Arterial
Potential R.O.W. Connection
Base Data Source: Teranet, 2013
APRIL 2025
0
0.125
0.25
0.5
km

Figure 2

### 5.2 Corridor Growth Rates

Region of Peel staff provided growth rates for regional roads between 2024 and 2041. These growth rates were applied to through movements along the regional study roadways. As the Region did not have growth rates beyond 2041 at the time of writing, the growth rates provided for 2031 to 2041 was applied between 2041 and 2044.

An industry standard annual 2.0% corridor growth rate was applied to through movements along Town collector roads, consistent with the Tullamore Industrial Business Park Transportation Impact Study Update (April 2024).

No growth was applied along the local roadways planned as part of future developments. Based on the configuration of these roadways, any corridor traffic growth would be attributed to the planned buildout of future developments. Moreover, future traffic growth on these roadways is expected to be captured by the background development traffic assignment, as applicable.

**Table 12** summarizes the growth rates applied to the study roadways.

**Table 12: Applied Annual Growth Rates**

| Corridor | 2024 to 2031 | 2031 to 2041 | 2041 to 2044 |
|---|---|---|---|
| Mayfield Road | 1.0% | 0.5% | 0.5% |
| Airport Road | 1.5% | 0.5% | 0.5% |
| Torbram Road | 2.0% | 2.0% | 2.0% |
| Old School Road/Healy Road | 2.0% | 2.0% | 2.0% |
| Street A | 0.0% | 0.0% | 0.0% |
| Street B | 0.0% | 0.0% | 0.0% |
| Street C | 0.0% | 0.0% | 0.0% |

### 5.3 Background Developments

**Table 13** outlines the noted developments proposed near the Subject Site and are included as background developments.

## 5.4 Warrants Assessment

Signal warrants were assessed for the unsignalized study intersections under 2044 future background conditions.

The analysis was conducted based on Chapter 4 of the Ontario Traffic Manual Book 12: Traffic Signals (MTO, March 2012). As only peak hour volumes were available, Justification 7: Projected Volumes was selected as the most appropriate warrant to assess the unsignalized study intersections.

The average hour volume was determined using the following formula from Ontario Traffic Manual Book 12:

$$AHV = (amPHV + pmPHV) / 4$$

Where:

AHV = average hour volume
amPHV = a.m. peak hour volume
pmPHV = p.m. peak hour volume

For roadways with operational speeds of 60 km/h or lower, restricted flow was used. Conversely, unrestricted flow was used for roadways with operating speeds above 60 km/h.

**Table 15** summarizes the future background signal warrant analysis.

**Table 15: Future Background Signal Warrant Analysis**

| Intersection | Flow Conditions | Lanes on Major Road | Signal Warranted? |
|---|---|---|---|
| Airport Road & Perdue Court/Davis Lane | Free | 2+ Lanes | No |

Signals are not warranted at Airport Road & Perdue Court/Davis Lane, under future background conditions.

**Appendix J** includes the warrants assessment reports.

## 5.5 Traffic Modelling and Assumptions

The section herein outlines the traffic modelling assumptions used in evaluating future background conditions.

### *5.5.1 Road Geometry*

The Synchro model was updated to reflect the widening of Mayfield Road, Airport Road, Torbram Road and Old School Road within the study area for the 2044 horizon year.

Mayfield Road and Airport Road was modelled based on the geometry outlined in the most recent detailed design drawings prepared as part of the Mayfield Road and Airport Road Environmental Assessments, respectively. Furthermore, intersections proposed along Airport Road and Mayfield Road as part of the Tullamore Industrial Business Park were modelled based on the 60% detailed design drawings submitted.

As outlined in **Section 4.2.3** and **Section 4.2.4**, the design for the widening of Torbram Road and Old School Road is not publicly available at the time of writing. For modelling purposes, a two-way left-turn lane, through lane and through-right lane is proposed along the Torbram Road and Old School Road corridors, consistent with the Town's recommended cross-section. A storage length of 55 m is assumed for the two-way left-turn lane.

Auxiliary turn lanes for future study intersections were also recommended as part of the background developments. **Table 16** outlines the planned auxiliary turn lane storage under future background conditions.

**Table 16: Future Background Auxiliary Turn Lane Storage Length**

| Intersection | Movement | Storage Length | Source |
|---|---|---|---|
| Airport Road & Street A/12333 Airport Road | EBL | 55 m | Tullamore Industrial Business Park |
| | NBL | 120 m | |
| | SBR | 100 m | |
| Mayfield Road & Street B | EBL | 160 m | Tullamore Industrial Business Park |
| | WBR | 130 m | |
| | SBL | 55 m | |
| | EBR | 30 m | Countryside Villages Block 48-2 |
| | WBL | 105 m | |
| | NBL | 55 m | |
| Torbram Road & Street C | EBL | 55 m | Tullamore Industrial Business Park |
| | WBL | 55 m | |
| | NBL[1] | 55 m | Mayfield-Tullamore Secondary Plan |
| | SBL[1] | 55 m | |

*Note 1: Auxiliary turn lane storage of 55 m assumed for Torbram Road corridor.*

Changes to the existing intersection control were modelled based on planned background improvements and developments as well as to support future background traffic. **Table 17** summarizes the intersection control upgrades under future background conditions.

**Table 17: Future Background Intersection Control**

| Intersection | Intersection Control Type | | Source |
|---|---|---|---|
| | Existing | Planned | |
| Airport Road & Old School Road/Healy Road | Signal | Roundabout | Airport Road Environmental Assessment |
| Torbram Road & Old School Road | All-Way Stop | Signal | Mayfield-Tullamore Secondary Plan |
| Airport Road & Perdue Court/Davis Lane | Two-Way Stop | Signal | N/A[1] |
| Mayfield Road & Street B | N/A | Signal | Tullamore Industrial Business Park |
| Torbram Road & Street C | N/A | Signal | Mayfield-Tullamore Secondary Plan |

*Note 1: Recommended to support future background traffic operations.*

### *5.5.2 Modelling Parameters*

Consistent with existing conditions, PHFs of 1.00 were kept unchanged for all Town and Region roads, per the Region's guidelines.

The signal timing plan splits for all signalized study intersections were optimized. Signals along the Mayfield Road and Airport Road corridor were modelled as actuated-coordinated, with all other signalized study intersections modelled as semi actuated-uncoordinated.

**Table 18** outlines the modelled cycles lengths for the signalized study intersections.

**Table 18: Modelled Cycle Lengths**

| Intersection | Cycle Length | | Source |
|---|---|---|---|
| | A.M. | P.M. | |
| Torbram Road & Old School Road | 100 s | 100 s | Mayfield-Tullamore Secondary Plan |
| Airport Road & Perdue Court/Davis Lane | 120 s | 120 s | Assumed[1] |
| Mayfield Road & Street B | 120 s | 135 s | Tullamore Industrial Business Park |
| Torbram Road & Street C | 100 s | 100 s | Mayfield-Tullamore Secondary Plan |

*Note 1: Consistent with existing cycle lengths for Airport Road & Street A/12333 Airport Road intersection.*

It is noted that the Mayfield-Tullamore Secondary Plan Transportation Study (BA Group, August 2024) recommended a 200 s cycle length along the Mayfield Road corridor to accommodate the high traffic volumes expected. While the increased cycle length is expected to improve the operations of critical movements, this cycle length is atypical for the Mayfield Road corridor. Thus, the existing cycle lengths of 120 s and 135 s for the weekday a.m. and p.m. peak hours, respectively, was maintained herein for consistency.

The Mayfield-Tullamore Secondary Plan is located west of the Tullamore Northwest Employment Area and fronts Torbram Road. Due to the environmental constraints, there are no proposed intersections with Torbram Road along the Tullamore Northwest Employment Area frontage. Thus, any proposed connection to Torbram Road will be a T-intersection with no continuity into the Mayfield-Tullamore Secondary Plan.

There are currently no plans or schedules for the Town of Caledon Secondary Plan Area F2, which is east of the Subject Lands, fronting Airport Road. Nevertheless, there may be the opportunity for east-west connectivity to be provided between the Tullamore Northwest Employment Area and the Secondary Plan Area F2.

Overall, the potential connection opportunities identified provides the opportunity to implement roadway connectivity with the developments proposed nearby and reduces the number of additional intersections proposed along the external study road network.

**Appendix I** includes the relevant background development excerpts.

# 7.0 Site Generated Traffic

This section herein reviews the trip generation forecasts associated with the proposed Tullamore Northwest Employment Area Secondary Plan. The typical four-stage model approach, consisting of trip generation, trip distribution, mode split adjustment, and trip assignment, was largely followed to forecast vehicle trips associated with the Tullamore Northwest Employment Area.

## 7.1 Development Yield

For the purposes of trip generation, a high-level gross floor area (GFA) estimate of approximately 5,200,000 $ft^2$ was provided by Glen Schnarr & Associates Inc. However, this gross floor area is not intended to provide a limit of development GFA for the Secondary Plan area. Moreover, to support the flexibility of various development scenarios within the Secondary Plan lands, the more conservative "Industrial Park" land use, instead of the typical "Warehousing" land use, was adopted for analysis herein.

## 7.2 Trip Generation

To forecast the trips generated by the Proposed Development, the data provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition (September 2021) were used. The ITE Trip Generation Manual is a publication of the ITE that includes trip generation data that have been voluntarily collected and submitted to ITE from members across the United States and Canada. The data represents recorded trips into and out of various sites associated with different land use codes.

### *7.2.1 Baseline Trip Generation*

The baseline industrial trips were generated based on the Land Use Category (LUC) 130 "Industrial Park". As the exact industrial land use(s) proposed within the Tullamore Northwest Employment Area are not finalized and the Land Use Schedule permits a range of industrial uses, LUC 130 "Industrial Park" was used for a conservative analysis.

Fitted curve estimates and average rates in a general urban/suburban setting are provided in the ITE Trip Generation Manual, 11th Edition (September 2021). Fitted curve estimates were used if

available, and deemed accurate (i.e., more than 20 data points and coefficient of determination $R^2 > 0.75$).

**Table 26** outlines the baseline vehicle trip generation for the Proposed Development.

**Table 26: Baseline Vehicle Trip Generation**

| Land Use | Statistic | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|
| | | | | In | Out | Total |
| **Total Vehicle** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | 0.34/1000 ft² | 1,428 | 335 | 1,763 |
| | | P.M. | 0.34/1000 ft² | 388 | 1,375 | 1,763 |
| **Heavy Truck** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | 0.04/1000 ft² | 93 | 114 | 207 |
| | | P.M. | 0.04/1000 ft² | 79 | 129 | 207 |
| **Passenger Car** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | N/A | 1,334 | 221 | 1,555 |
| | | P.M. | | 309 | 1,246 | 1,555 |

*Note 1: Rounding may cause the appearance of discrepancies.*

The Tullamore Northwest Employment Area is expected to generate 1,763 two-way baseline vehicle trips during both the weekday a.m. and p.m. peak hours.

### *7.2.2 Mode Split Adjustment*

There is an inherent mode split included in the ITE vehicle trip generation rates, that may differ from the Town's mode split targets for new developments. As the ITE trip generation forecast accounts for typical suburban mode splits, an adjustment factor was included in analysis to account for the sustainable mode split targets identified in the Region's Transportation Master Plan (December 2017).

As outlined in Institute of Transportation Engineers (ITE) Trip Generation Handbook, 3rd Edition (September 2017), the trip generation rates for suburban context included an automobile split of 95% or higher for residential trips. For the site generated trips, a target vehicle mode split of 78% was used per the Region's Transportation Master Plan. As such, a mode split adjustment factor of 0.82 was applied.

The mode split adjustment factor was only applied to passenger car trips as heavy truck trips are not generally impacted by reduced automobile mode split targets and the corresponding initiatives to reduce vehicle use.

**Table 27** outlines the mode split adjusted passenger car trip generation.

**Table 27: Mode Split Adjusted Passenger Car Trip Generation**

| Land Use | Statistic | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|
| | | | | In | Out | Total |
| **Passenger Car** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | 0.82 mode split adjustment factor | 1,096 | 181 | 1,277 |
| | | P.M. | | 254 | 1,023 | 1,277 |

*Note 1: Rounding may cause the appearance of discrepancies.*

The Tullamore Northwest Employment Area is expected to generate 1,277 two-way mode split adjusted passenger car trips during both the weekday a.m. and p.m. peak hours.

### *7.2.3 Summary*

**Table 28** summarizes the Proposed Development's forecasted vehicle trip generation.

**Table 28: Vehicle Trip Generation**

| Land Use | Statistic | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|
| | | | | In | Out | Total |
| **Total Vehicle** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | N/A | 1,189 | 295 | 1,484 |
| | | P.M. | | 332 | 1,152 | 1,484 |
| **Heavy Truck** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | N/A | 93 | 114 | 207 |
| | | P.M. | | 79 | 129 | 207 |
| **Passenger Car** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | N/A | 1,096 | 181 | 1,277 |
| | | P.M. | | 254 | 1,023 | 1,277 |

*Note 1: Rounding may cause the appearance of discrepancies.*

The Tullamore Northwest Employment Area is expected to generate a total of 1,484 two-way vehicle trips during the weekday a.m. and p.m. peak hours. Of these vehicle trips, 207 and 1,277 two-way heavy truck and passenger car trips, respectively, are expected during the weekday a.m. and p.m. peak hours.

It is noted that the estimated development size is at the higher end of the available ITE data for LUC 130 "Industrial Park", and site generated trips would not increase linearly for larger industrial buildings. As a linear trip generation rate was applied herein, the aforementioned trip generation may also be considered conservative from this perspective.

## 7.3 Land Use Comparison

The exact industrial land use(s) expected for the Subject Lands is unknown at the time of writing, As such, Land Use Code (LUC) 130 "Industrial Park" was used herein, which can encompass a range of industrial uses.

It is noted that the majority of the existing, approved and proposed industrial developments within the study area and southern Caledon are warehouses, which forecasts a significantly lower trip generation in comparison to other industrial uses. For comparative purposes, the trip generation for LUC 150 "Warehousing" was also reviewed herein.

**Table 29** outlines the vehicle trip generation comparison for both LUC 130 "Industrial Park" and LUC 150 "Warehousing"

**Table 29: Total Vehicle Trip Generation (Comparison)**

| Land Use | Statistic | Peak Hour | Equation | Trips[1] | | |
|---|---|---|---|---|---|---|
| | | | | In | Out | Total |
| **Industrial Park** | | | | | | |
| LUC 130 "Industrial Park" | ~5,200,000 ft² | A.M. | 0.34/1000 ft² | 1,428 | 335 | 1,763 |
| | | P.M. | 0.34/1000 ft² | 388 | 1,375 | 1,763 |
| **Warehousing** | | | | | | |
| LUC 150 "Warehousing" | ~5,200,000 ft² | A.M. | 0.17/1000 ft² | 679 (-749) | 203 (-132) | 881 (-881) |
| | | P.M. | 0.18/1000 ft² | 261 (-126) | 672 (-703) | 933 (-829) |

As outlined in **Table 29**, LUC 150 "Warehousing" results in 50% and 53% fewer trips than LUC 130 "Industrial Park". Should warehousing be pursued for some or all of the Secondary Plan area, a significant reduction in actual trips is expected. Therefore, the subsequent analysis prepared using the trip generation associated with LUC 130 "Industrial Park" can be considered conservative.

## 7.4 Trip Distribution

### *7.4.1 Passenger Car Trips*

The site generated passenger car trips were distributed to the study road network based on 2022 Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey consisting of transportation patterns for households in the Greater Toronto and Hamilton Area and surrounding area.

The Subject Property is located in 2006 Greater Toronto Area (GTA) Zone 3014, which primarily consists of greenfield lands and some existing industrial buildings. To increase the sample size of the query, proxy zones were also included. 2006 GTA Zone 3015, 2006 GTA Zone 3440 and 2006 GTA Zone 3441 were used as proxy zones. These zones are adjacent to the subject zone and includes industrial developments, thus these zones are expected to have similar travel patterns to the Subject Lands.

The TTS data was filtered to trips entering and existing the subject and proxy zones for work purposes during the weekday a.m. and p.m. peak hours, respectively, which reflect the peak commuter directions.

**Table 30** summarizes the trip distribution for employment passenger car trips.

**Table 30: Passenger Car Trip Distribution**

| Direction | Inbound | Outbound | External Network Gateway |
|---|---|---|---|
| North | 29% | 18% | Airport Road, Torbram Road |
| South | 13% | 25% | Airport Road, Torbram Road |
| East | 6% | 7% | Mayfield Road, Healy Road |
| West | 29% | 24% | Mayfield Road, Old School Road |
| Highway 413 (via North) | 23% | 26% | Airport Road |
| **Total** | **100%** | **100%** | **-** |

It is noted that the trip distribution was adjusted to capture the more convenient routing options, as a result of the future Highway 413, especially pertaining to heavy truck traffic.

**Appendix B** includes the TTS data.

### *7.4.2 Heavy Truck Trips*

The site generated heavy truck trips were distributed to the study road network based on the expected travel routes for heavy vehicle traffic and roadways where heavy trucks are permitted. Heavy trucks will primarily rely on Highway 413 as well as Airport Road, Mayfield Road and the proposed collector road network within the Tullamore Northwest Employment Area and Tullamore Industrial Business Park. The remaining study roadways are not expected to support heavy vehicle traffic under future conditions.

Due to the proposed Highway 413, a portion of current heavy vehicle traffic along Mayfield Road is expected to instead use Highway 413. As there are currently no details regarding the shift in heavy vehicle distribution, it is assumed that two-thirds of all truck traffic will use Highway 413, with the remaining one-third will use Mayfield Road. It is assumed that heavy vehicle traffic will access the Highway 413 via the planned Airport Road interchange.

All traffic along Mayfield was then distributed based on existing eastbound and westbound travel patterns observed in the existing turning movement counts.

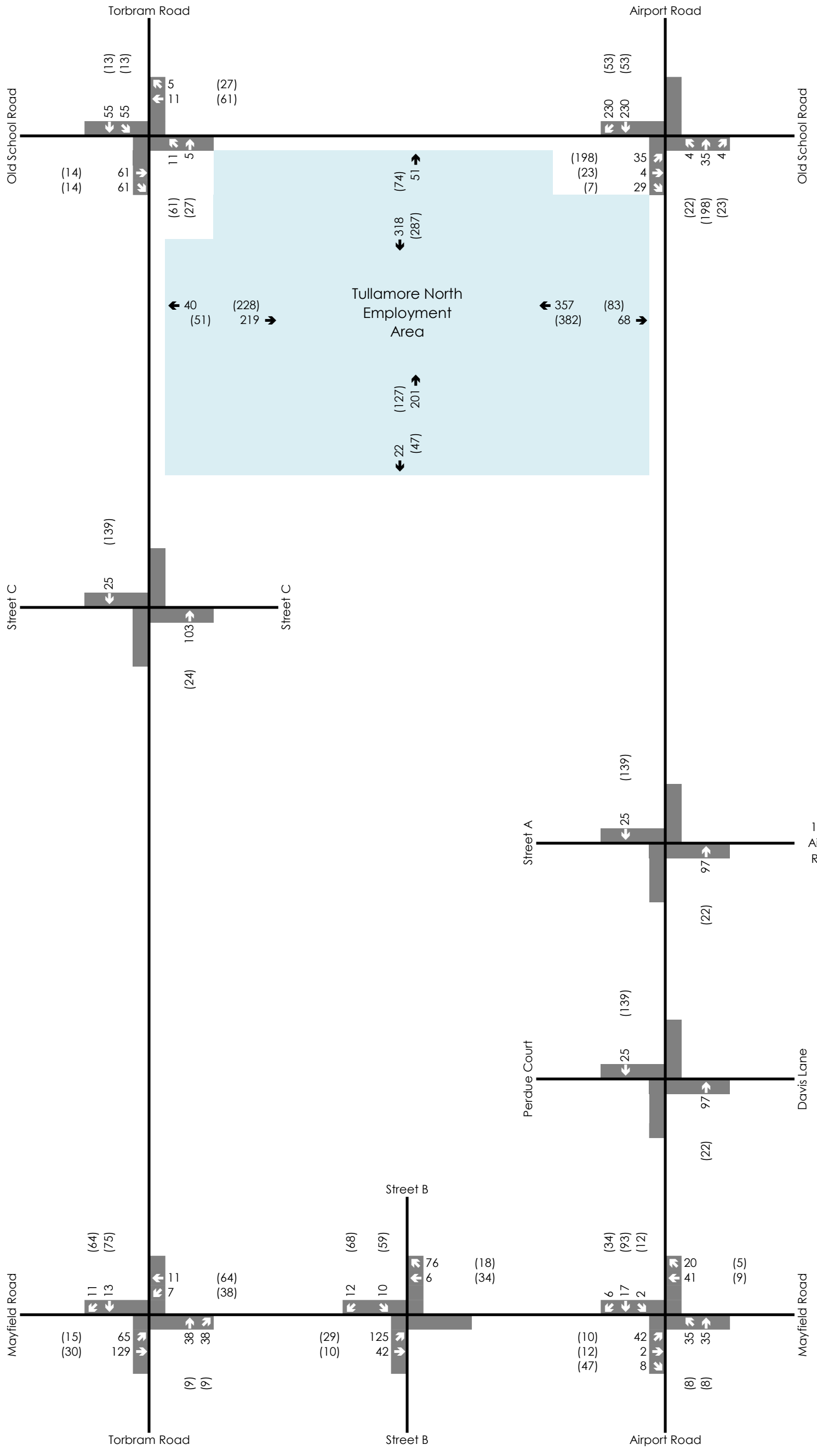
This estimated shift in truck traffic distribution was based on Mayfield Road being the current primary truck corridor, partly because Highway 410 terminates just north of Mayfield and Highway 427 terminates on McKenzie Drive, approximately 3.4 km south of Mayfield Road. The implementation of Highway 413 will provide more convenient and direct routes to the

surrounding highways, with the Airport Road interchange being located 500 m from the Subject Lands.

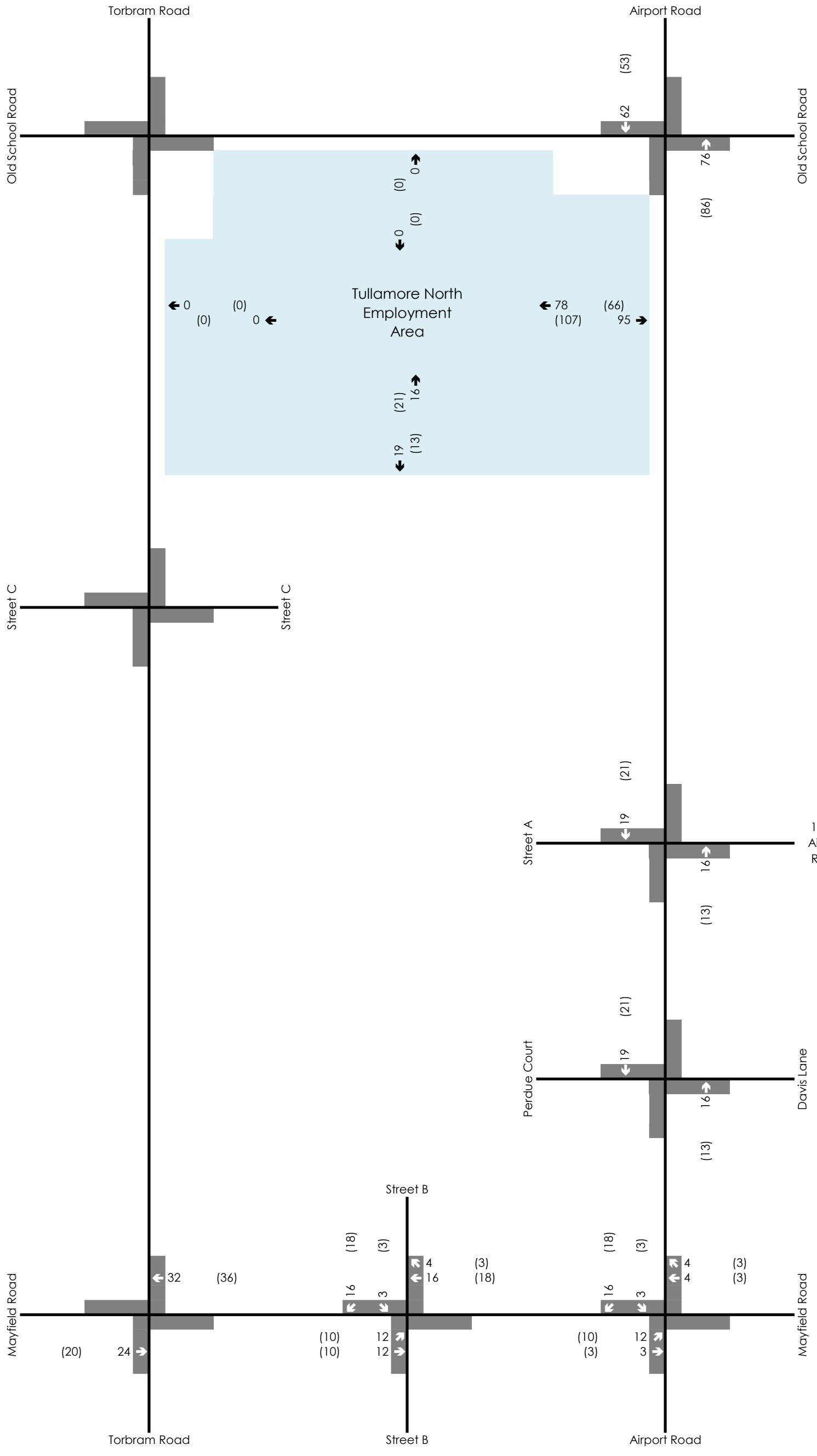
### 7.5 Trip Assignment

The site generated trips were distributed throughout the external study road network based on the trip distribution outlined above. As outlined in **Section 6.2**, future road connections are assumed off Airport Road, Torbram Road and Old School Road as well as off Mayfield Road via Tullamore Industrial Business Park.

**Figure 15**, **Figure 16** and **Figure 17** outlines the passenger car, heavy truck and total site generated volumes, respectively.




| Legend | Tullamore Northwest Employment Area Secondary Plan | CROZIER CONSULTING ENGINEERS | Figure 15 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes<br>{xx} Weekend Peak Hour Traffic Volumes | Passenger Car Site Traffic Volumes | | Project No. 2278-7228<br>Date: 04/30/25<br>Analyst. MY |




**Legend**

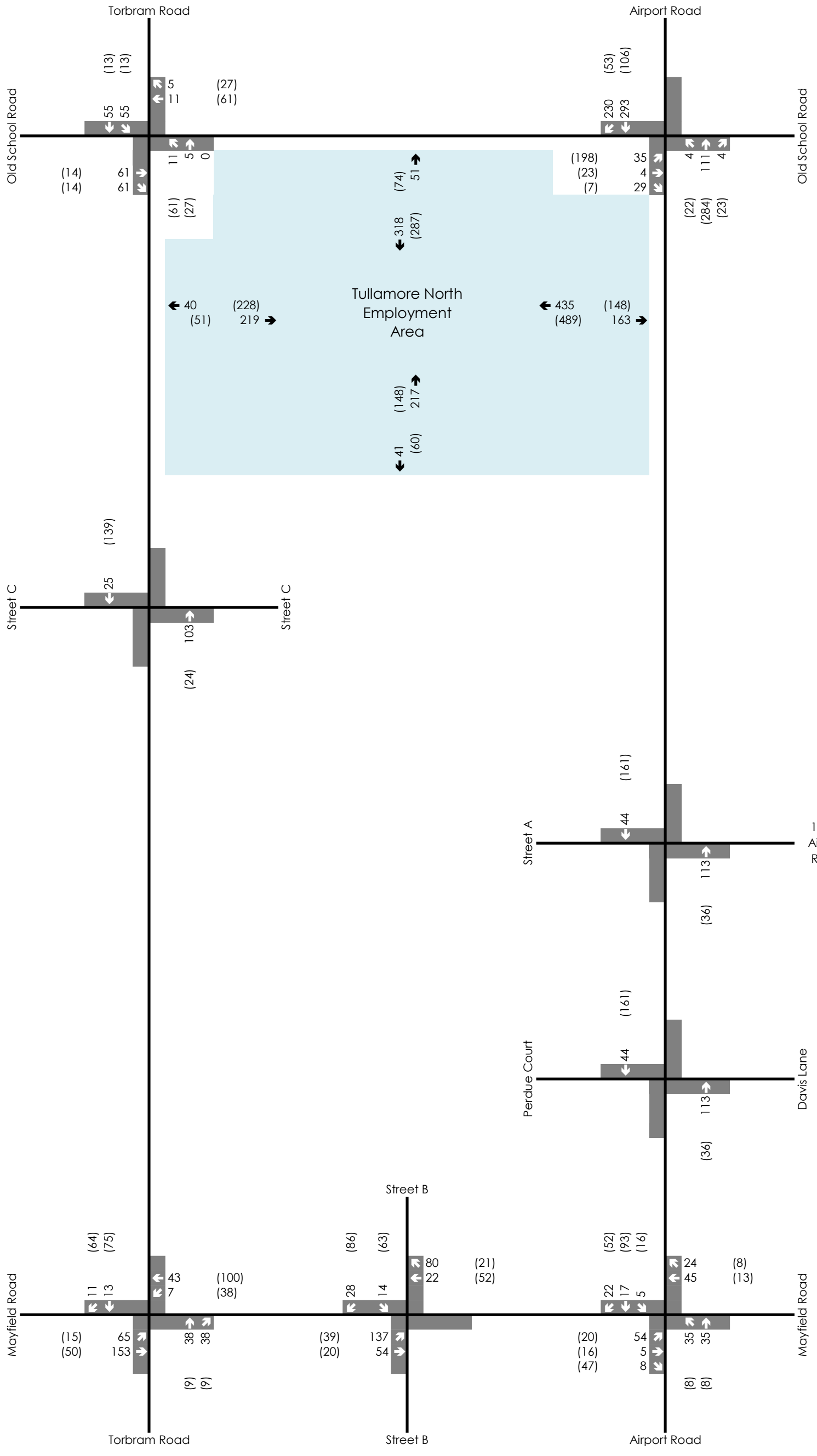
xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes
{xx} Weekend Peak Hour Traffic Volumes

**Tullamore Northwest Employment Area Secondary Plan**

**Heavy Truck Site Traffic Volumes**

CROZIER CONSULTING ENGINEERS

**Figure 16**
Project No. 2278-7228
Date: 04/30/25
Analyst. MY




**Legend**

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes
{xx} Weekend Peak Hour Traffic Volumes

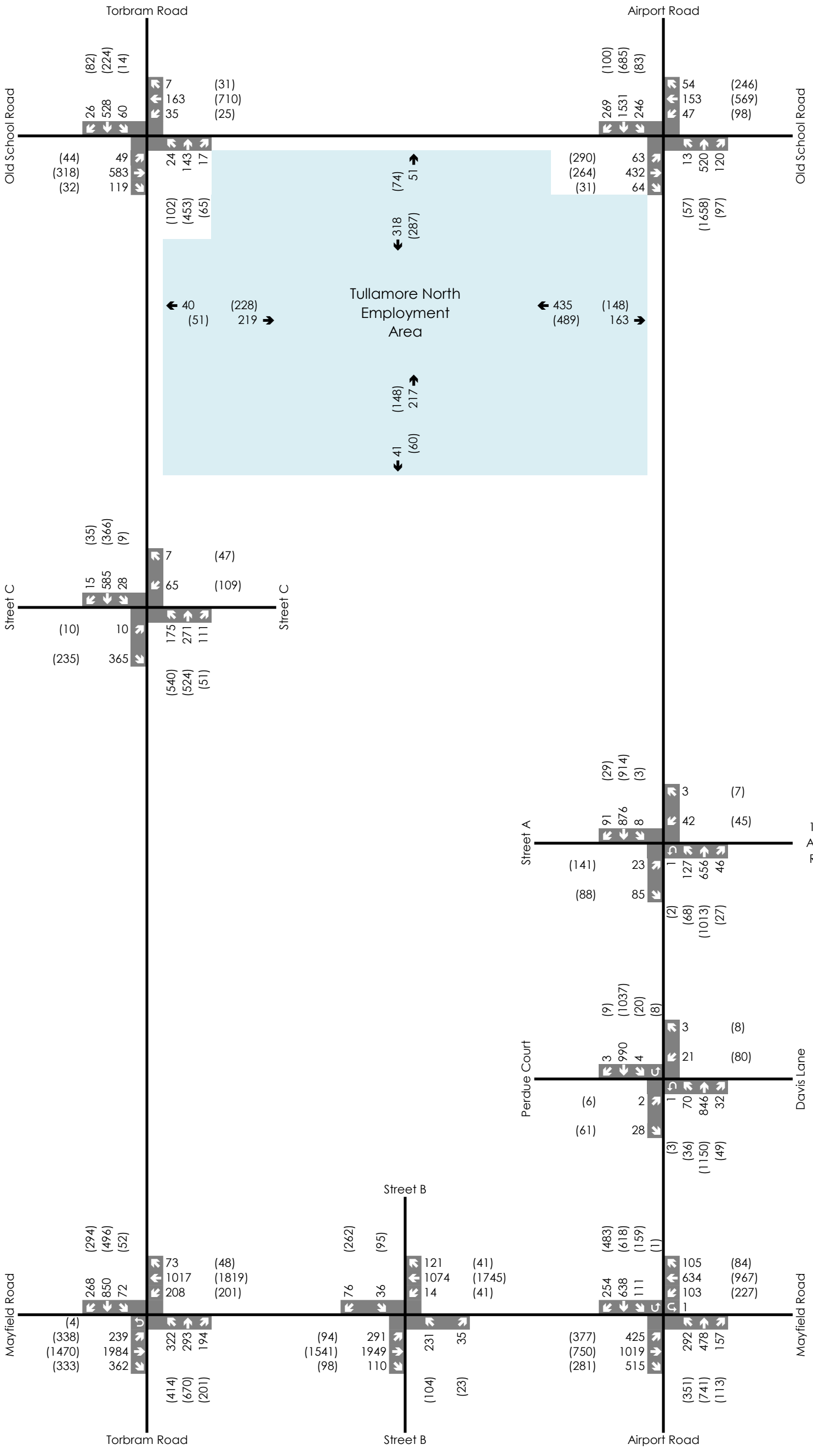
**Tullamore Northwest Employment Area Secondary Plan**

**Total Site Traffic Volumes**

CROZIER CONSULTING ENGINEERS

**Figure 17**

Project No. 2278-7228
Date: 04/30/25
Analyst. MY




**Legend**

xx A.M. Peak Hour Traffic Volumes
(xx) P.M. Peak Hour Traffic Volumes
{xx} Weekend Peak Hour Traffic Volumes

**Tullamore Northwest Employment Area Secondary Plan**

**2044 Future Total Traffic Volumes**

CROZIER CONSULTING ENGINEERS

**Figure 18**
Project No. 2278-7228
Date: 04/30/25
Analyst. MY

### 9.3 Intersection Operations

The section herein reviews the intersection operations for the future road connections, under 2044 future total conditions. This assessment includes key metrics including level of service (LOS), control delay and volume-to-capacity (v/c) ratio.

**Appendix E** contains the detailed capacity analysis worksheets.

**Table 39** details the future road connections traffic operations.

**Table 39: Future Road Connections Traffic Operations**

| Intersection | Movement | LOS[1] | | Delay (s)[2] | | v/c ratio[3] | |
|---|---|---|---|---|---|---|---|
| | | A.M. | P.M. | A.M. | P.M. | A.M. | P.M. |
| **Torbram Road Connection** | **Overall** | **B** | **B** | **11** | **13** | **0.16** | **0.26** |
| | WBL | B | B | 13 | 14 | 0.05 | 0.26 |
| | WBR | A | B | 9 | 10 | 0.02 | 0.12 |
| | NBTR | A | A | 0 | 0 | 0.07 | 0.19 |
| | SBL | A | A | 8 | 8 | 0.09 | 0.03 |
| | SBT | A | A | 0 | 0 | 0.16 | 0.07 |
| **Airport Road Connection** | **Overall** | **C** | **D** | **25** | **39** | **0.86** | **0.77** |
| | EBL | E | E | 67 | 59 | 0.77 | 0.88 |
| | EBTR | D | D | 46 | 39 | 0.04 | 0.11 |
| | WBL | D | D | 53 | 40 | 0.58 | 0.63 |
| | WBT | A | A | 0 | 0 | 0.00 | 0.00 |
| | WBR | D | E | 50 | 65 | 0.16 | 0.82 |
| | NBL | D | C | 44 | 26 | 0.54 | 0.14 |
| | NBTR | C | C | 34 | 35 | 0.35 | 0.63 |
| | SBL | B | C | 19 | 23 | 0.83 | 0.65 |
| | SBTR | A | B | 10 | 16 | 0.48 | 0.34 |
| **Old School Road Connection** | **Overall** | **B** | **B** | **11** | **11** | **0.21** | **0.26** |
| | EBTR | A | A | 0 | 0 | 0.15 | 0.12 |
| | WBL | A | A | 9 | 8 | 0.21 | 0.04 |
| | WBT | A | A | 0 | 0 | 0.05 | 0.15 |
| | NBL | B | B | 15 | 12 | 0.03 | 0.12 |
| | NBR | A | B | 10 | 11 | 0.05 | 0.26 |

*Note 1: The overall LOS of a signalized intersection is based on the average control delay per vehicle (HCM 2000). The overall LOS of a two-way stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000).*

*Note 2: The overall control delay of a signalized intersection is based on the average control delay per vehicle (HCM 2000). The overall control delay of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000).*

*Note 3: The overall v/c ratio for unsignalized intersections is the maximum movement v/c ratio. All v/c ratios above 0.90 for overall intersections, through movement and shared through/turning movements are in red text. All v/c ratios above 1.00 for exclusive movements are also in red text.*

The future road connections off Torbram Road, Airport Road and Old School Road are expected to operate at a LOS "D" or better with low to moderate control delays and v/c ratios. As such, these intersections are anticipated to operate efficiently with reserve capacity to accommodate for future growth.

Furthermore, should additional connections be proposed off of Torbram Road, Airport Road and Old School Road in the future, improved intersection operations are expected. Therefore, the future road connections are supportable from a transportation operations perspective.

## 9.4 Queueing Assessment

Consistent with existing and future conditions, SimTraffic was used to assess the queues within the study road network. The 95th percentile queues were compared against the available storage length to determine if any queues are expected to extend beyond the auxiliary turn lanes. **Appendix F** contains the detailed queueing analysis worksheets.

Consistent with future background conditions, the queueing assessment was conducted based on the optimized future total conditions.

**Table 40** outlines the results of the future roadway connections queueing assessment.

**Table 40: Future Roadway Connections Queueing Assessment**

| Intersection | Movement | 95th Percentile Queue Length (m)[1] | | Auxiliary Lane Storage Length (m) |
|---|---|---|---|---|
| | | A.M. | P.M. | |
| **Torbram Road Connection** | WBL | - | - | 55 |
| | SBL | - | - | 55[2] |
| **Airport Road Connection** | EBL | - | - | 55 |
| | WBL | 55 | 40 | 55 |
| | WBR | 40 | 65 | 55 |
| | NBL | - | - | 80[2] |
| | SBL | 40 | 55 | 80[2] |
| **Old School Road Connection** | WBL | - | - | 55 |
| | NBL | - | - | 55[2] |

*Note 1: 95th percentile queue length rounded up to the nearest 5 m.*
*Note 2: Two-way left-turn lane.*

The westbound right-turn queue at the Airport Road Connection is expected to extend beyond the modelled storage length of 55 m. The Airport Road Connection's westbound approach is the assumed connection to the Town of Caledon's Secondary Plan Area F2. No details are publicly available regarding a proposed road network nor intersection geometry to support Secondary Plan Area F2. As such, the expected queues and corresponding storage length requirements should be confirmed in future studies in support of Secondary Plan Area F2.

No further queueing concerns are expected for the future roadway connections. Nevertheless, these findings will need to be reviewed and confirmed once the internal road network to support the Tullamore Northwest Employment Area is finalized and proposed in a subsequent development application(s).

## 9.5 Recommendations Summary

**Table 41** summarizes the improvements that should be considered, and protected for, to support future roadway connection opportunities.

**Table 41: Future Roadway Connections Improvement Considerations**

| Location | Improvement Considerations |
|---|---|
| Potential Torbram Road Connection | Implement the following two-way turn lane storage for the following movements:<br>• WBL: 55 m<br>• SBL: 55 m |
| Potential Airport Road Connection | Implement signal control.<br><br>Implement the following two-way turn lane storage for the following movements:<br>• EBL: 55 m<br>• NBL: 55 m<br><br>Confirm the need for and implement a 65 m WBR auxiliary turn lane. |
| Potential Old School Road Connection | Implement the following two-way turn lane storage for the following movements:<br>• WBL: 55 m<br>• NBL: 55 m |

As previously noted, these recommendations will be reviewed and confirmed in future site-specific development application(s), once the internal collector road network and specific land use proposals are confirmed. Nevertheless, the conservative analysis outlined herein illustrates that potential improvements required to support the Secondary Plan can be implemented within the planned cross-sections associated with the Airport Road, Old School Road and Torbram Road widening and urbanization. Accordingly, the study road network and any potential connections to/from the Secondary Plan lands can adequately support full buildout of the Secondary Plan Area.

## 10.0 Transportation Framework

A multi-modal transportation framework for the Tullamore Northwest Employment Area Secondary Plan will comprise the approach and implementation of multi-modal transportation facilities and elements for the Tullamore Northwest Employment Area. The following considerations are outlined herein:

- Active Transportation Strategy
- Transit Strategy
- Transportation Demand Management Strategy
- Multi-Modal Safety

### 10.1 Active Transportation Strategy

Active transportation infrastructure can be provided within the Subject Lands as part of a future internal collector road network, which connects to the external active transportation facilities planned as part of future road widenings. Given the potential connection to the Tullamore Industrial Business Park via Street B, it is expected that future public roadways would provide continuity with the approved cross-section. This cross-section has a 26 m right-of-way and includes a 3.0 m multi-use path on one-side of the road and a 1.8 m sidewalk on the other.

# APPENDIX B:

## Transportation Tomorrow Survey Data

Fri Feb 14 2025 14:31:20 GMT-0500 (Eastern Standard Time) - Run Time: 3162ms

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of origin - pd_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Trip Purpose of Destination - purp_dest In W,

and

2006 GTA zone of destination - gta06_dest In 3014,3015,3440,3441

and

Start time of trip - start_time In 0630-0930

Trip 2022

Table:

,3014,3015,3440

Newmarket,14,0,0

Aurora,9,0,0

Vaughan,0,37,0

Caledon,146,104,29

Brampton,106,77,129

Mississauga,43,0,0

Halton Hills,4,0,0

Flamborough,16,0,0

Erin,10,0,0

Orangeville,0,9,0

New Tecumseth,116,0,0

Mulmur ,6,0,0

Fri Feb 14 2025 14:35:57 GMT-0500 (Eastern Standard Time) - Run Time: 3327ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Trip Purpose of Destination - purp_dest In W,

and

2006 GTA zone of destination - gta06_dest In 3014,3015,3440,3441

and

Start time of trip - start_time In 0630-0930

and

Planning district of origin - pd_orig In 34, 35, 36,

Trip 2022

Table:

,3014,3015,3440

3005,0,0,29

3008,33,0,0

3010,113,0,0

3198,0,104,0

3337,67,0,0

3360,5,0,0

3371,6,0,0

3373,5,0,0

3376,5,0,0

3384,0,0,106

3420,0,48,0

3434,0,26,0

3459,0,0,23

3460,0,3,0

3464,18,0,0

3716,33,0,0

3810,10,0,0

Fri Feb 14 2025 15:13:26 GMT-0500 (Eastern Standard Time) - Run Time: 3434ms

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of destination - pd_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Trip Purpose of Origin - purp_orig In W,

and

2006 GTA zone of origin - gta06_orig In 3014,3015,3440,3441

and

Start time of trip - start_time In 1530-1830

Trip 2022

Table:

,3014,3015,3440,3441

PD 9 of Toronto,0,52,0,0

PD 16 of Toronto,0,6,0,0

Aurora,9,0,0,0

Vaughan,0,24,0,0

Caledon,181,52,0,0

Brampton,38,77,23,35

Mississauga,10,0,0,0

Flamborough,16,0,0,0

Orangeville,0,9,0,0

New Tecumseth,81,0,0,0

Fri Feb 14 2025 15:32:33 GMT-0500 (Eastern Standard Time) - Run Time: 3474ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of destination - gta06_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Trip Purpose of Origin - purp_orig In W,

and

2006 GTA zone of origin - gta06_orig In 3014,3015,3440,3441

and

Start time of trip - start_time In 1530-1830

and

Planning district of destination - pd_dest In 34, 35, 36,

Trip 2022

Table:

,3014,3015,3440,3441

3008,33,0,0,0

3010,113,0,0,0

3107,35,0,0,0

3198,0,52,0,0

3373,5,0,0,0

3375,0,26,0,0

3376,5,0,0,0

3377,0,0,23,0

3417,0,3,0,0

3420,0,48,0,0

3440,6,0,0,0

3462,4,0,0,0

3464,18,0,0,0

3468,0,0,0,35

3810,10,0,0,0

# APPENDIX D:

## Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

| Level of Service | Control Delay per Vehicle (seconds) | Interpretation |
|---|---|---|
| A | ≤ 10 | EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare. |
| B | > 10 and ≤ 15 | VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal. |
| C | > 15 and ≤ 25 | GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable. |
| D | > 25 and ≤ 35 | FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street. |
| E | > 35 and ≤ 50 | POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable. |
| F | > 50 | UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street. |

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Signalized Intersections

| Level of Service | Control Delay per Vehicle (seconds) | Interpretation |
|---|---|---|
| A | ≤ 10 | EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay. |
| B | > 10 and ≤ 20 | VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay. |
| C | > 20 and ≤ 35 | GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B". |
| D | > 35 and ≤ 55 | FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression. |
| E | > 55 and ≤ 80 | POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common. |
| F | > 80 | UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection. |

Adapted from Highway Capacity Manual 2000, Transportation Research Board

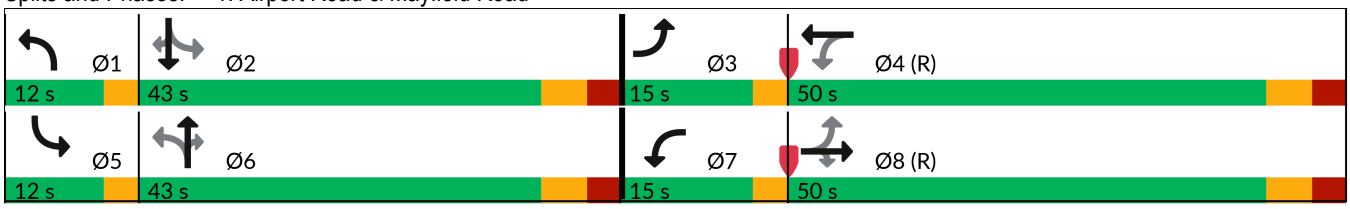
# APPENDIX E:

## Detailed Capacity Analyses

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 163 | 628 | 380 | 78 | 418 | 184 | 197 | 82 | 68 | 428 | 106 |
| Future Volume (vph) | 163 | 628 | 380 | 78 | 418 | 184 | 197 | 82 | 68 | 428 | 106 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 8 | 4 | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 46.1 | 8.0 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 15.0 | 50.0 | 50.0 | 15.0 | 50.0 | 12.0 | 43.0 | 43.0 | 12.0 | 43.0 | 43.0 |
| Total Split (%) | 12.5% | 41.7% | 41.7% | 12.5% | 41.7% | 10.0% | 35.8% | 35.8% | 10.0% | 35.8% | 35.8% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 3.1 | 0.0 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 76.5 | 63.8 | 63.8 | 70.9 | 59.4 | 35.3 | 24.2 | 24.2 | 33.1 | 21.3 | 21.3 |
| Actuated g/C Ratio | 0.64 | 0.53 | 0.53 | 0.59 | 0.50 | 0.29 | 0.20 | 0.20 | 0.28 | 0.18 | 0.18 |
| v/c Ratio | 0.32 | 0.35 | 0.40 | 0.21 | 0.31 | 0.74 | 0.31 | 0.28 | 0.23 | 0.74 | 0.36 |
| Control Delay (s/veh) | 11.4 | 18.2 | 3.2 | 10.8 | 19.5 | 50.8 | 42.5 | 8.9 | 33.2 | 55.2 | 17.7 |
| 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 (s/veh) | 11.4 | 18.2 | 3.2 | 10.8 | 19.5 | 50.8 | 42.5 | 8.9 | 33.2 | 55.2 | 17.7 |
| LOS | B | B | A | B | B | D | D | A | C | E | B |
| Approach Delay (s/veh) | | 12.4 | | | 18.3 | | 39.8 | | | 46.1 | |
| Approach LOS | | B | | | B | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.74 | |
| Intersection Signal Delay (s/veh): 25.4 | Intersection LOS: C |
| Intersection Capacity Utilization 84.6% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.3 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 4 | 218 | 54 | 6 | 75 | 2 | 12 | 60 | 9 | 4 | 280 | 16 |
| Future Vol, veh/h | 4 | 218 | 54 | 6 | 75 | 2 | 12 | 60 | 9 | 4 | 280 | 16 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 2 | 8 | 0 | 2 | 0 | 17 | 2 | 12 | 25 | 1 | 0 |
| Mvmt Flow | 4 | 218 | 54 | 6 | 75 | 2 | 12 | 60 | 9 | 4 | 280 | 16 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

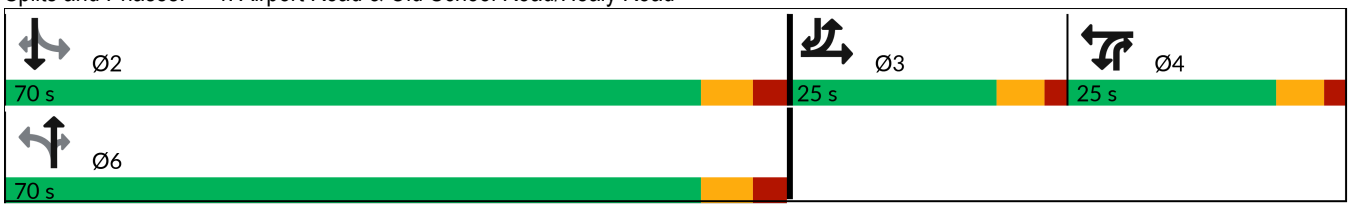
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 11 | 9.2 | 9.4 | 12.6 |
| HCM LOS | B | A | A | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 15% | 1% | 7% | 1% |
| Vol Thru, % | 74% | 79% | 90% | 93% |
| Vol Right, % | 11% | 20% | 2% | 5% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 81 | 276 | 83 | 300 |
| LT Vol | 12 | 4 | 6 | 4 |
| Through Vol | 60 | 218 | 75 | 280 |
| RT Vol | 9 | 54 | 2 | 16 |
| Lane Flow Rate | 81 | 276 | 83 | 300 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.126 | 0.376 | 0.124 | 0.441 |
| Departure Headway (Hd) | 5.582 | 4.91 | 5.393 | 5.289 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 646 | 723 | 668 | 672 |
| Service Time | 3.586 | 2.998 | 3.399 | 3.385 |
| HCM Lane V/C Ratio | 0.125 | 0.382 | 0.124 | 0.446 |
| HCM Control Delay, s/veh | 9.4 | 11 | 9.2 | 12.6 |
| HCM Lane LOS | A | B | A | B |
| HCM 95th-tile Q | 0.4 | 1.8 | 0.4 | 2.3 |

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 161 | 80 | 7 | 150 | 113 | 12 | 445 | 6 |
| Future Volume (vph) | 161 | 80 | 7 | 150 | 113 | 12 | 445 | 6 |
| Turn Type | NA | NA | Perm | NA | pm+ov | Perm | NA | pm+ov |
| Protected Phases | 3 | 4 | | 6 | 4 | | 2 | 3 |
| Permitted Phases | | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 4 | 6 | 6 | 4 | 2 | 2 | 3 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 | 8.0 |
| Minimum Split (s) | 26.2 | 26.2 | 22.7 | 22.7 | 26.2 | 22.7 | 22.7 | 26.2 |
| Total Split (s) | 25.0 | 25.0 | 70.0 | 70.0 | 25.0 | 70.0 | 70.0 | 25.0 |
| Total Split (%) | 20.8% | 20.8% | 58.3% | 58.3% | 20.8% | 58.3% | 58.3% | 20.8% |
| Yellow Time (s) | 4.2 | 4.2 | 4.6 | 4.6 | 4.2 | 4.6 | 4.6 | 4.2 |
| All-Red Time (s) | 2.0 | 2.0 | 3.1 | 3.1 | 2.0 | 3.1 | 3.1 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 6.2 | 6.2 | | 7.7 | 6.2 | | 7.7 | 6.2 |
| Lead/Lag | Lead | Lag | | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | Yes | | | Yes | | | Yes |
| Recall Mode | None | None | Max | Max | None | Max | Max | None |
| Act Effct Green (s) | 16.2 | 13.2 | | 62.5 | 83.4 | | 62.5 | 86.4 |
| Actuated g/C Ratio | 0.14 | 0.12 | | 0.56 | 0.74 | | 0.56 | 0.77 |
| v/c Ratio | 0.77 | 0.61 | | 0.19 | 0.10 | | 0.49 | 0.01 |
| Control Delay (s/veh) | 64.5 | 59.3 | | 14.2 | 1.0 | | 18.4 | 0.0 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 64.5 | 59.3 | | 14.2 | 1.0 | | 18.4 | 0.0 |
| LOS | E | E | | B | A | | B | A |
| Approach Delay (s/veh) | 64.5 | 59.3 | | 8.7 | | | 18.1 | |
| Approach LOS | E | E | | A | | | B | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 112 | |
| Natural Cycle: 80 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay (s/veh): 29.6 | Intersection LOS: C |
| Intersection Capacity Utilization 64.6% | ICU Level of Service C |
| Analysis Period (min) 15 | |

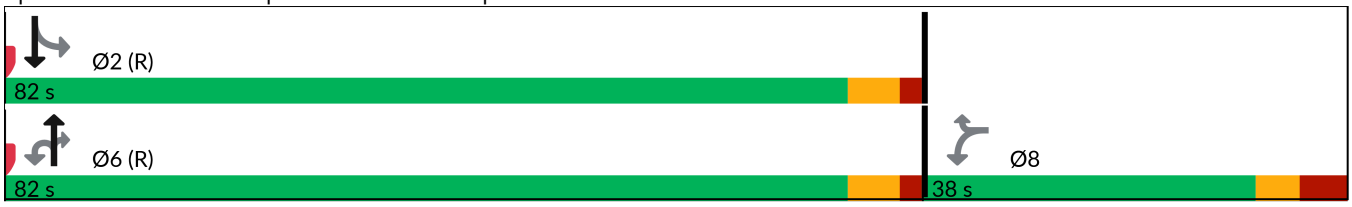
Splits and Phases: 4: Airport Road & Old School Road/Healy Road



| Lane Group | WBL | WBR | NBU | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 42 | 3 | 1 | 254 | 46 | 8 | 537 |
| Future Volume (vph) | 42 | 3 | 1 | 254 | 46 | 8 | 537 |
| Turn Type | Perm | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | | | | 6 | | | 2 |
| Permitted Phases | 8 | 8 | 6 | | 6 | 2 | |
| Detector Phase | 8 | 8 | 6 | 6 | 6 | 2 | 2 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 38.0 | 38.0 | 82.0 | 82.0 | 82.0 | 82.0 | 82.0 |
| Total Split (%) | 31.7% | 31.7% | 68.3% | 68.3% | 68.3% | 68.3% | 68.3% |
| Yellow Time (s) | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Recall Mode | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.5 | 12.5 | | 98.1 | 98.1 | 98.1 | 98.1 |
| Actuated g/C Ratio | 0.10 | 0.10 | | 0.82 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.35 | 0.02 | | 0.11 | 0.05 | 0.01 | 0.20 |
| Control Delay (s/veh) | 58.4 | 31.3 | | 2.4 | 0.8 | 3.5 | 3.5 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 58.4 | 31.3 | | 2.4 | 0.8 | 3.5 | 3.5 |
| LOS | E | C | | A | A | A | A |
| Approach Delay (s/veh) | 56.6 | | | 2.1 | | | 3.5 |
| Approach LOS | E | | | A | | | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTU, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.35 | |
| Intersection Signal Delay (s/veh): 5.7 | Intersection LOS: A |
| Intersection Capacity Utilization 50.0% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Airport Road & 12333 Airport Road





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 0 | 28 | 21 | 0 | 3 | 1 | 70 | 308 | 32 | 4 | 563 |
| Future Volume (Veh/h) | 2 | 0 | 28 | 21 | 0 | 3 | 1 | 70 | 308 | 32 | 4 | 563 |
| 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) | 2 | 0 | 28 | 21 | 0 | 3 | 0 | 70 | 308 | 32 | 4 | 563 |
| Pedestrians | | 2 | | | 12 | | | | 1 | | | |
| Lane Width (m) | | 3.6 | | | 3.6 | | | | 3.6 | | | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | | 1.2 | | | |
| Percent Blockage | | 0 | | | 1 | | | | 0 | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | None |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | 0.00 | | | | | |
| vC, conflicting volume | 870 | 1065 | 285 | 779 | 1036 | 166 | 0 | 568 | | | 352 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 870 | 1065 | 285 | 779 | 1036 | 166 | 0 | 568 | | | 352 | |
| tC, single (s) | 9.5 | 6.5 | 8.4 | 8.8 | 6.5 | 8.9 | 0.0 | 4.5 | | | 5.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 4.5 | 4.0 | 4.0 | 4.2 | 4.0 | 4.3 | 0.0 | 2.4 | | | 2.7 | |
| p0 queue free % | 98 | 100 | 95 | 88 | 100 | 100 | 0 | 92 | | | 100 | |
| cM capacity (veh/h) | 122 | 200 | 533 | 168 | 208 | 606 | 0 | 873 | | | 912 | |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 2 | 28 | 21 | 3 | 70 | 154 | 154 | 32 | 4 | 282 | 282 | 3 |
| Volume Left | 2 | 0 | 21 | 0 | 70 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| Volume Right | 0 | 28 | 0 | 3 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 3 |
| cSH | 122 | 533 | 168 | 606 | 873 | 1700 | 1700 | 1700 | 912 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.05 | 0.12 | 0.00 | 0.08 | 0.09 | 0.09 | 0.02 | 0.00 | 0.17 | 0.17 | 0.00 |
| Queue Length 95th (m) | 0.4 | 1.3 | 3.3 | 0.1 | 2.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 35.1 | 12.1 | 29.4 | 11.0 | 9.5 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | E | B | D | B | A | | | | A | | | |
| Approach Delay (s/veh) | 13.7 | | 27.1 | | 1.6 | | | | 0.1 | | | |
| Approach LOS | B | | D | | | | | | | | | |

| Intersection Summary | | | | | |
|---|---|---|---|---|---|
| Average Delay | 1.7 | | | | |
| Intersection Capacity Utilization | 37.3% | ICU Level of Service | | A | |
| Analysis Period (min) | 15 | | | | |

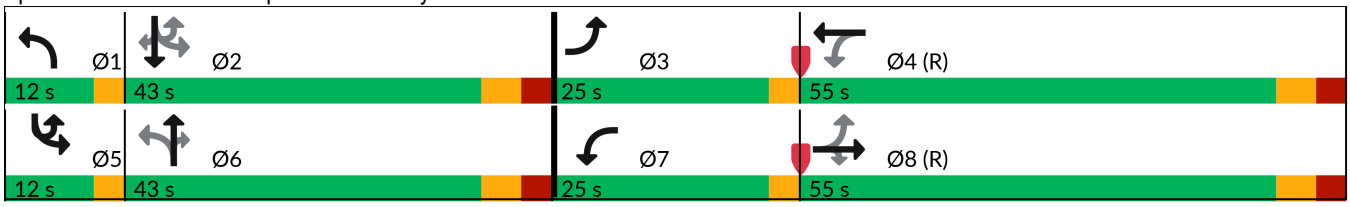


| Movement | SBR |
|---|---|
| Lane Configurations | |
| Traffic Volume (veh/h) | 3 |
| Future Volume (Veh/h) | 3 |
| Sign Control | |
| Grade | |
| Peak Hour Factor | 1.00 |
| Hourly flow rate (vph) | 3 |
| Pedestrians | |
| Lane Width (m) | |
| Walking Speed (m/s) | |
| Percent Blockage | |
| Right turn flare (veh) | |
| Median type | |
| Median storage veh) | |
| Upstream signal (m) | |
| pX, platoon unblocked | |
| vC, conflicting volume | |
| vC1, stage 1 conf vol | |
| vC2, stage 2 conf vol | |
| vCu, unblocked vol | |
| tC, single (s) | |
| tC, 2 stage (s) | |
| tF (s) | |
| p0 queue free % | |
| cM capacity (veh/h) | |
| Direction, Lane # | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 148 | 509 | 158 | 92 | 645 | 240 | 493 | 91 | 1 | 79 | 262 | 232 |
| Future Volume (vph) | 148 | 509 | 158 | 92 | 645 | 240 | 493 | 91 | 1 | 79 | 262 | 232 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | 1 | 6 | | 5 | 5 | 2 | |
| Permitted Phases | 8 | | 8 | 4 | | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 3 | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 46.1 | 8.0 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 25.0 | 55.0 | 55.0 | 25.0 | 55.0 | 12.0 | 43.0 | 43.0 | 12.0 | 12.0 | 43.0 | 43.0 |
| Total Split (%) | 18.5% | 40.7% | 40.7% | 18.5% | 40.7% | 8.9% | 31.9% | 31.9% | 8.9% | 8.9% | 31.9% | 31.9% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 3.1 | 0.0 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 87.5 | 73.2 | 73.2 | 82.5 | 70.5 | 38.4 | 25.5 | 25.5 | | 37.3 | 24.9 | 24.9 |
| Actuated g/C Ratio | 0.65 | 0.54 | 0.54 | 0.61 | 0.52 | 0.28 | 0.19 | 0.19 | | 0.28 | 0.18 | 0.18 |
| v/c Ratio | 0.40 | 0.30 | 0.18 | 0.19 | 0.40 | 0.77 | 0.79 | 0.32 | | 0.47 | 0.42 | 0.53 |
| Control Delay (s/veh) | 13.4 | 18.6 | 3.3 | 10.9 | 21.6 | 57.7 | 61.3 | 11.2 | | 42.4 | 49.9 | 9.8 |
| 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 (s/veh) | 13.4 | 18.6 | 3.3 | 10.9 | 21.6 | 57.7 | 61.3 | 11.2 | | 42.4 | 49.9 | 9.8 |
| LOS | B | B | A | B | C | E | E | B | | D | D | A |
| Approach Delay (s/veh) | | 14.7 | | | 20.3 | | 54.7 | | | | 32.6 | |
| Approach LOS | | B | | | C | | D | | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 65 (48%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.79 | |
| Intersection Signal Delay (s/veh): 30.6 | Intersection LOS: C |
| Intersection Capacity Utilization 86.3% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.9 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 14 | 159 | 16 | 16 | 296 | 3 | 36 | 247 | 18 | 1 | 92 | 12 |
| Future Vol, veh/h | 14 | 159 | 16 | 16 | 296 | 3 | 36 | 247 | 18 | 1 | 92 | 12 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 6 | 100 | 4 | 0 |
| Mvmt Flow | 14 | 159 | 16 | 16 | 296 | 3 | 36 | 247 | 18 | 1 | 92 | 12 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

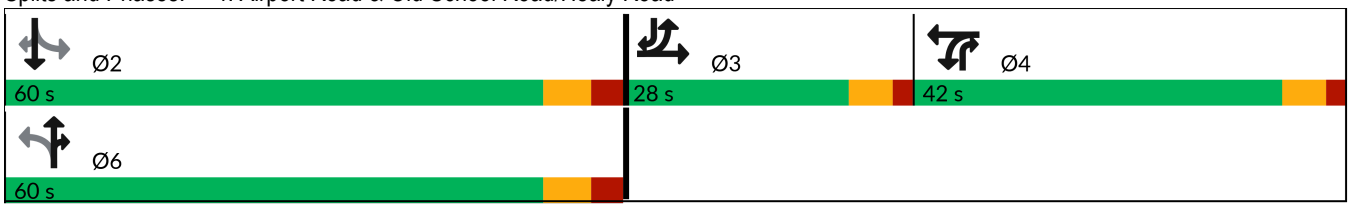
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 11.1 | 13.5 | 13.4 | 12.7 |
| HCM LOS | B | B | B | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 12% | 7% | 5% | 1% |
| Vol Thru, % | 82% | 84% | 94% | 88% |
| Vol Right, % | 6% | 8% | 1% | 11% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 301 | 189 | 315 | 105 |
| LT Vol | 36 | 14 | 16 | 1 |
| Through Vol | 247 | 159 | 296 | 92 |
| RT Vol | 18 | 16 | 3 | 12 |
| Lane Flow Rate | 301 | 189 | 315 | 105 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.464 | 0.297 | 0.48 | 0.22 |
| Departure Headway (Hd) | 5.546 | 5.66 | 5.484 | 7.526 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 647 | 631 | 655 | 476 |
| Service Time | 3.6 | 3.724 | 3.54 | 5.596 |
| HCM Lane V/C Ratio | 0.465 | 0.3 | 0.481 | 0.221 |
| HCM Control Delay, s/veh | 13.4 | 11.1 | 13.5 | 12.7 |
| HCM Lane LOS | B | B | B | B |
| HCM 95th-tile Q | 2.5 | 1.2 | 2.6 | 0.8 |

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 133 | 259 | 27 | 433 | 71 | 10 | 217 | 20 |
| Future Volume (vph) | 133 | 259 | 27 | 433 | 71 | 10 | 217 | 20 |
| Turn Type | NA | NA | Perm | NA | pt+ov | Perm | NA | pm+ov |
| Protected Phases | 3 | 4 | | 6 | 6 4 | | 2 | 3 |
| Permitted Phases | | | 6 | | | 2 | | 2 |
| Detector Phase | 3 | 4 | 6 | 6 | 6 4 | 2 | 2 | 3 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 12.0 | 12.0 | | 12.0 | 12.0 | 8.0 |
| Minimum Split (s) | 26.2 | 26.2 | 22.7 | 22.7 | | 22.7 | 22.7 | 26.2 |
| Total Split (s) | 28.0 | 42.0 | 60.0 | 60.0 | | 60.0 | 60.0 | 28.0 |
| Total Split (%) | 21.5% | 32.3% | 46.2% | 46.2% | | 46.2% | 46.2% | 21.5% |
| Yellow Time (s) | 4.2 | 4.2 | 4.6 | 4.6 | | 4.6 | 4.6 | 4.2 |
| All-Red Time (s) | 2.0 | 2.0 | 3.1 | 3.1 | | 3.1 | 3.1 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | 6.2 | 6.2 | | 7.7 | | | 7.7 | 6.2 |
| Lead/Lag | Lead | Lag | | | | | | Lead |
| Lead-Lag Optimize? | Yes | Yes | | | | | | Yes |
| Recall Mode | None | None | Max | Max | | Max | Max | None |
| Act Effct Green (s) | 16.1 | 27.3 | | 52.8 | 86.3 | | 52.8 | 76.6 |
| Actuated g/C Ratio | 0.14 | 0.23 | | 0.45 | 0.74 | | 0.45 | 0.66 |
| v/c Ratio | 0.70 | 0.84 | | 0.58 | 0.06 | | 0.33 | 0.02 |
| Control Delay (s/veh) | 62.9 | 60.4 | | 29.4 | 2.3 | | 24.4 | 2.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 62.9 | 60.4 | | 29.4 | 2.3 | | 24.4 | 2.4 |
| LOS | E | E | | C | A | | C | A |
| Approach Delay (s/veh) | 62.9 | 60.4 | | 25.8 | | | 22.6 | |
| Approach LOS | E | E | | C | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 130 | |
| Actuated Cycle Length: 116.4 | |
| Natural Cycle: 90 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.84 | |
| Intersection Signal Delay (s/veh): 39.7 | Intersection LOS: D |
| Intersection Capacity Utilization 88.4% | ICU Level of Service E |
| Analysis Period (min) 15 | |

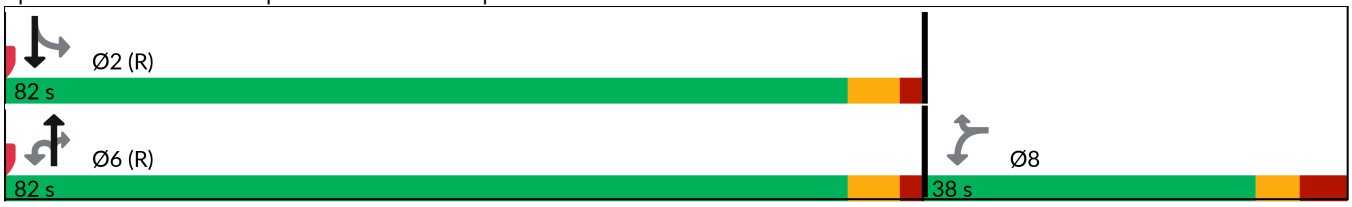
Splits and Phases: 4: Airport Road & Old School Road/Healy Road



| Lane Group | WBL | WBR | NBU | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 45 | 7 | 2 | 558 | 27 | 3 | 356 |
| Future Volume (vph) | 45 | 7 | 2 | 558 | 27 | 3 | 356 |
| Turn Type | Perm | Perm | Perm | NA | Perm | Perm | NA |
| Protected Phases | | | | 6 | | | 2 |
| Permitted Phases | 8 | 8 | 6 | | 6 | 2 | |
| Detector Phase | 8 | 8 | 6 | 6 | 6 | 2 | 2 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 38.0 | 38.0 | 82.0 | 82.0 | 82.0 | 82.0 | 82.0 |
| Total Split (%) | 31.7% | 31.7% | 68.3% | 68.3% | 68.3% | 68.3% | 68.3% |
| Yellow Time (s) | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Recall Mode | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.4 | 12.4 | | 98.2 | 98.2 | 98.2 | 98.2 |
| Actuated g/C Ratio | 0.10 | 0.10 | | 0.82 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.34 | 0.04 | | 0.21 | 0.03 | 0.01 | 0.14 |
| Control Delay (s/veh) | 57.5 | 27.3 | | 3.5 | 1.3 | 3.3 | 3.3 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 57.5 | 27.3 | | 3.5 | 1.3 | 3.3 | 3.3 |
| LOS | E | C | | A | A | A | A |
| Approach Delay (s/veh) | 53.5 | | | 3.4 | | | 3.3 |
| Approach LOS | D | | | A | | | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 58 (48%), Referenced to phase 2:SBTL and 6:NBTU, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.34 | |
| Intersection Signal Delay (s/veh): 6.0 | Intersection LOS: A |
| Intersection Capacity Utilization 46.5% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Airport Road & 12333 Airport Road





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBU | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 6 | 0 | 61 | 80 | 0 | 8 | 3 | 36 | 617 | 49 | 8 | 20 |
| Future Volume (Veh/h) | 6 | 0 | 61 | 80 | 0 | 8 | 3 | 36 | 617 | 49 | 8 | 20 |
| Sign Control | | Stop | | | Stop | | | | Free | | | |
| Grade | | 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) | 6 | 0 | 61 | 80 | 0 | 8 | 0 | 36 | 617 | 49 | 0 | 20 |
| Pedestrians | | | | | 12 | | | | | | | |
| Lane Width (m) | | | | | 3.6 | | | | | | | |
| Walking Speed (m/s) | | | | | 1.2 | | | | | | | |
| Percent Blockage | | | | | 1 | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | | None | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | 0.00 | | | | 0.00 | |
| vC, conflicting volume | 815 | 1176 | 193 | 995 | 1136 | 321 | 0 | 395 | | | 0 | 678 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 815 | 1176 | 193 | 995 | 1136 | 321 | 0 | 395 | | | 0 | 678 |
| tC, single (s) | 7.5 | 6.5 | 7.1 | 7.7 | 6.5 | 7.2 | 0.0 | 5.4 | | | 0.0 | 5.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.6 | 4.0 | 3.4 | 0.0 | 2.8 | | | 0.0 | 3.1 |
| p0 queue free % | 98 | 100 | 92 | 50 | 100 | 99 | 0 | 96 | | | 0 | 96 |
| cM capacity (veh/h) | 251 | 173 | 786 | 161 | 182 | 637 | 0 | 818 | | | 0 | 500 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | NB 1 | NB 2 | NB 3 | NB 4 | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 6 | 61 | 80 | 8 | 36 | 309 | 309 | 49 | 20 | 193 | 193 | 9 |
| Volume Left | 6 | 0 | 80 | 0 | 36 | 0 | 0 | 0 | 20 | 0 | 0 | 0 |
| Volume Right | 0 | 61 | 0 | 8 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 9 |
| cSH | 251 | 786 | 161 | 637 | 818 | 1700 | 1700 | 1700 | 500 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.08 | 0.50 | 0.01 | 0.04 | 0.18 | 0.18 | 0.03 | 0.04 | 0.11 | 0.11 | 0.01 |
| Queue Length 95th (m) | 0.6 | 2.0 | 19.2 | 0.3 | 1.1 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 19.7 | 10.0 | 47.7 | 10.7 | 9.6 | 0.0 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | A | E | B | A | | | | B | | | |
| Approach Delay (s/veh) | 10.8 | | 44.4 | | 0.5 | | | | 0.6 | | | |
| Approach LOS | B | | E | | | | | | | | | |

| Intersection Summary | | | | | |
|---|---|---|---|---|---|
| Average Delay | 4.1 | | | | |
| Intersection Capacity Utilization | 41.5% | ICU Level of Service | | A | |
| Analysis Period (min) | 15 | | | | |

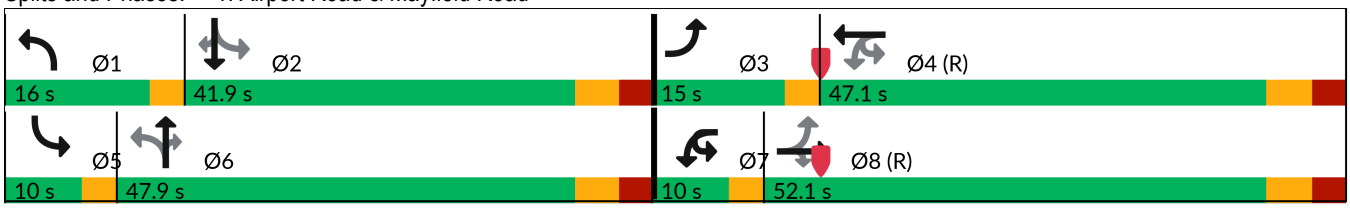


| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (veh/h) | 386 | 9 |
| Future Volume (Veh/h) | 386 | 9 |
| Sign Control | Free | |
| Grade | 0% | |
| Peak Hour Factor | 1.00 | 1.00 |
| Hourly flow rate (vph) | 386 | 9 |
| Pedestrians | | |
| Lane Width (m) | | |
| Walking Speed (m/s) | | |
| Percent Blockage | | |
| Right turn flare (veh) | | |
| Median type | None | |
| Median storage veh) | | |
| Upstream signal (m) | | |
| pX, platoon unblocked | | |
| vC, conflicting volume | | |
| vC1, stage 1 conf vol | | |
| vC2, stage 2 conf vol | | |
| vCu, unblocked vol | | |
| tC, single (s) | | |
| tC, 2 stage (s) | | |
| tF (s) | | |
| p0 queue free % | | |
| cM capacity (veh/h) | | |
| Direction, Lane # | | |

| Lane Group | EBL | EBT | EBR | WBU | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 214 | 708 | 443 | 1 | 80 | 493 | 245 | 375 | 84 | 98 | 552 | 138 |
| Future Volume (vph) | 214 | 708 | 443 | 1 | 80 | 493 | 245 | 375 | 84 | 98 | 552 | 138 |
| Turn Type | pm+pt | NA | Perm | pm+pt | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 8 | 4 | 4 | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 8 | 7 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 46.1 | 8.0 | 8.0 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 15.0 | 52.1 | 52.1 | 10.0 | 10.0 | 47.1 | 16.0 | 47.9 | 47.9 | 10.0 | 41.9 | 41.9 |
| Total Split (%) | 12.5% | 43.4% | 43.4% | 8.3% | 8.3% | 39.3% | 13.3% | 39.9% | 39.9% | 8.3% | 34.9% | 34.9% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 3.1 | 0.0 | 0.0 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 7.1 | | 3.0 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | None | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 67.9 | 54.7 | 54.7 | | 60.2 | 48.4 | 46.1 | 32.4 | 32.4 | 37.1 | 26.4 | 26.4 |
| Actuated g/C Ratio | 0.57 | 0.46 | 0.46 | | 0.50 | 0.40 | 0.38 | 0.27 | 0.27 | 0.31 | 0.22 | 0.22 |
| v/c Ratio | 0.51 | 0.46 | 0.52 | | 0.27 | 0.46 | 0.84 | 0.46 | 0.22 | 0.34 | 0.78 | 0.36 |
| Control Delay (s/veh) | 18.7 | 25.5 | 8.3 | | 16.1 | 28.5 | 51.3 | 37.7 | 3.3 | 37.9 | 60.3 | 20.1 |
| 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 (s/veh) | 18.7 | 25.5 | 8.3 | | 16.1 | 28.5 | 51.3 | 37.7 | 3.3 | 37.9 | 60.3 | 20.1 |
| LOS | B | C | A | | B | C | D | D | A | D | E | C |
| Approach Delay (s/veh) | | 18.9 | | | | 27.0 | | 38.3 | | | 50.5 | |
| Approach LOS | | B | | | | C | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.84 | |
| Intersection Signal Delay (s/veh): 31.4 | Intersection LOS: C |
| Intersection Capacity Utilization 94.4% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 15.3 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 49 | 243 | 57 | 35 | 87 | 2 | 13 | 112 | 17 | 4 | 342 | 26 |
| Future Vol, veh/h | 49 | 243 | 57 | 35 | 87 | 2 | 13 | 112 | 17 | 4 | 342 | 26 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 2 | 8 | 0 | 2 | 0 | 16 | 2 | 7 | 25 | 1 | 0 |
| Mvmt Flow | 49 | 243 | 57 | 35 | 87 | 2 | 13 | 112 | 17 | 4 | 342 | 26 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

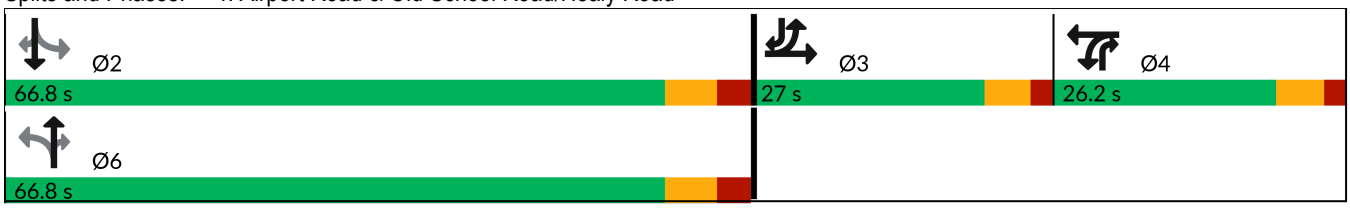
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 15.3 | 11 | 11.4 | 18.1 |
| HCM LOS | C | B | B | C |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 9% | 14% | 28% | 1% |
| Vol Thru, % | 79% | 70% | 70% | 92% |
| Vol Right, % | 12% | 16% | 2% | 7% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 142 | 349 | 124 | 372 |
| LT Vol | 13 | 49 | 35 | 4 |
| Through Vol | 112 | 243 | 87 | 342 |
| RT Vol | 17 | 57 | 2 | 26 |
| Lane Flow Rate | 142 | 349 | 124 | 372 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.246 | 0.546 | 0.213 | 0.614 |
| Departure Headway (Hd) | 6.227 | 5.63 | 6.178 | 5.946 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 572 | 639 | 577 | 603 |
| Service Time | 4.314 | 3.698 | 4.268 | 4.013 |
| HCM Lane V/C Ratio | 0.248 | 0.546 | 0.215 | 0.617 |
| HCM Control Delay, s/veh | 11.4 | 15.3 | 11 | 18.1 |
| HCM Lane LOS | B | C | B | C |
| HCM 95th-tile Q | 1 | 3.3 | 0.8 | 4.2 |

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 173 | 87 | 9 | 210 | 116 | 32 | 632 | 38 |
| Future Volume (vph) | 173 | 87 | 9 | 210 | 116 | 32 | 632 | 38 |
| Turn Type | NA | NA | Perm | NA | pm+ov | Perm | NA | pm+ov |
| Protected Phases | 3 | 4 | | 6 | 4 | | 2 | 3 |
| Permitted Phases | | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 4 | 6 | 6 | 4 | 2 | 2 | 3 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 | 8.0 |
| Minimum Split (s) | 26.2 | 26.2 | 22.7 | 22.7 | 26.2 | 22.7 | 22.7 | 26.2 |
| Total Split (s) | 27.0 | 26.2 | 66.8 | 66.8 | 26.2 | 66.8 | 66.8 | 27.0 |
| Total Split (%) | 22.5% | 21.8% | 55.7% | 55.7% | 21.8% | 55.7% | 55.7% | 22.5% |
| Yellow Time (s) | 4.2 | 4.2 | 4.6 | 4.6 | 4.2 | 4.6 | 4.6 | 4.2 |
| All-Red Time (s) | 2.0 | 2.0 | 3.1 | 3.1 | 2.0 | 3.1 | 3.1 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 6.2 | 6.2 | | 7.7 | 6.2 | | 7.7 | 6.2 |
| Lead/Lag | Lead | Lag | | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | Yes | | | Yes | | | Yes |
| Recall Mode | None | None | Max | Max | None | Max | Max | None |
| Act Effct Green (s) | 18.0 | 14.5 | | 59.4 | 81.6 | | 59.4 | 85.1 |
| Actuated g/C Ratio | 0.16 | 0.13 | | 0.53 | 0.73 | | 0.53 | 0.76 |
| v/c Ratio | 0.79 | 0.66 | | 0.27 | 0.10 | | 0.76 | 0.03 |
| Control Delay (s/veh) | 64.3 | 59.0 | | 16.9 | 1.1 | | 29.3 | 1.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 64.3 | 59.0 | | 16.9 | 1.1 | | 29.3 | 1.4 |
| LOS | E | E | | B | A | | C | A |
| Approach Delay (s/veh) | 64.3 | 59.0 | | 11.4 | | | 27.8 | |
| Approach LOS | E | E | | B | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 112 | |
| Natural Cycle: 100 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.79 | |
| Intersection Signal Delay (s/veh): 33.3 | Intersection LOS: C |
| Intersection Capacity Utilization 82.0% | ICU Level of Service D |
| Analysis Period (min) 15 | |

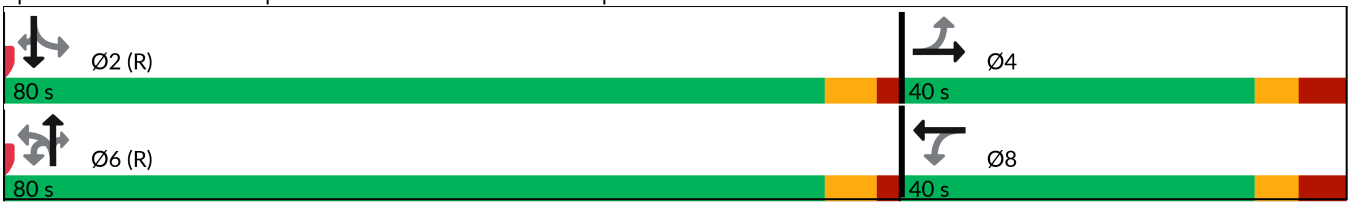
Splits and Phases: 4: Airport Road & Old School Road/Healy Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 301 | 46 | 8 | 647 | 91 |
| Future Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 301 | 46 | 8 | 647 | 91 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 80.0 | 80.0 | 80.0 | 80.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.5 | 13.5 | 13.5 | 13.5 | | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| v/c Ratio | 0.18 | 0.22 | 0.44 | 0.00 | | 0.28 | 0.12 | 0.05 | 0.01 | 0.24 | 0.09 |
| Control Delay (s/veh) | 50.7 | 1.4 | 63.8 | 0.0 | | 5.6 | 3.1 | 1.3 | 4.0 | 4.0 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 50.7 | 1.4 | 63.8 | 0.0 | | 5.6 | 3.1 | 1.3 | 4.0 | 4.0 | 1.0 |
| LOS | D | A | E | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 11.9 | | 59.5 | | | 3.6 | | | 3.7 | |
| Approach LOS | | B | | E | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.44 | |
| Intersection Signal Delay (s/veh): 6.1 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

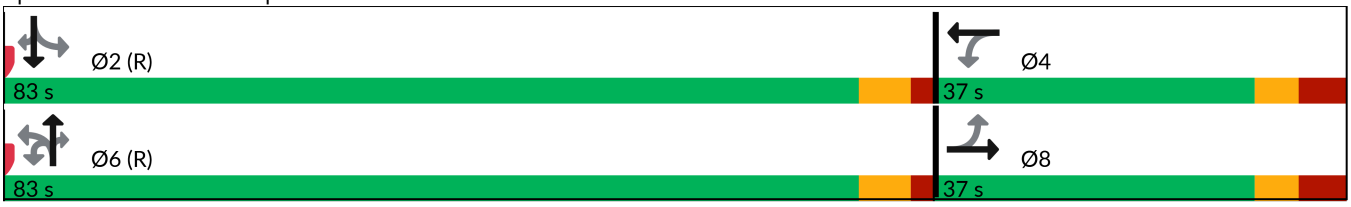
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 484 | 32 | 4 | 759 | 3 |
| Future Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 484 | 32 | 4 | 759 | 3 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 37.0 | 37.0 | 37.0 | 37.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 |
| Total Split (%) | 30.8% | 30.8% | 30.8% | 30.8% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.2 | 13.2 | 13.2 | 13.2 | | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.03 | 0.09 | 0.23 | 0.01 | | 0.15 | 0.19 | 0.03 | 0.01 | 0.28 | 0.00 |
| Control Delay (s/veh) | 47.5 | 0.6 | 54.7 | 0.0 | | 2.1 | 1.3 | 0.1 | 2.8 | 2.2 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 47.5 | 0.6 | 54.7 | 0.0 | | 2.1 | 1.3 | 0.1 | 2.8 | 2.2 | 0.0 |
| LOS | D | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 3.7 | | 47.8 | | | 1.4 | | | 2.2 | |
| Approach LOS | | A | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.28 | |
| Intersection Signal Delay (s/veh): 2.6 | Intersection LOS: A |
| Intersection Capacity Utilization 58.8% | ICU Level of Service B |
| Analysis Period (min) 15 | |

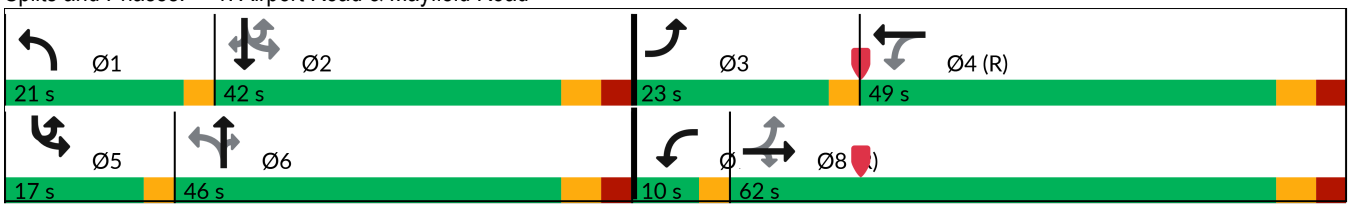
Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 220 | 592 | 206 | 101 | 722 | 294 | 657 | 93 | 1 | 135 | 416 | 299 |
| Future Volume (vph) | 220 | 592 | 206 | 101 | 722 | 294 | 657 | 93 | 1 | 135 | 416 | 299 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | 1 | 6 | | 5 | 5 | 2 | |
| Permitted Phases | 8 | | 8 | 4 | | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 3 | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 46.1 | 8.0 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 23.0 | 62.0 | 62.0 | 10.0 | 49.0 | 21.0 | 46.0 | 46.0 | 17.0 | 17.0 | 42.0 | 42.0 |
| Total Split (%) | 17.0% | 45.9% | 45.9% | 7.4% | 36.3% | 15.6% | 34.1% | 34.1% | 12.6% | 12.6% | 31.1% | 31.1% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 3.1 | 0.0 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 77.1 | 62.2 | 62.2 | 66.9 | 55.0 | 51.9 | 32.7 | 32.7 | | 43.5 | 27.3 | 27.3 |
| Actuated g/C Ratio | 0.57 | 0.46 | 0.46 | 0.50 | 0.41 | 0.38 | 0.24 | 0.24 | | 0.32 | 0.20 | 0.20 |
| v/c Ratio | 0.67 | 0.41 | 0.26 | 0.27 | 0.59 | 0.81 | 0.83 | 0.26 | | 0.64 | 0.63 | 0.57 |
| Control Delay (s/veh) | 26.6 | 26.6 | 4.1 | 18.2 | 35.3 | 49.0 | 58.1 | 6.8 | | 40.9 | 52.9 | 9.0 |
| 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 (s/veh) | 26.6 | 26.6 | 4.1 | 18.2 | 35.3 | 49.0 | 58.1 | 6.8 | | 40.9 | 52.9 | 9.0 |
| LOS | C | C | A | B | D | D | E | A | | D | D | A |
| Approach Delay (s/veh) | | 22.0 | | | 33.4 | | 50.9 | | | | 35.5 | |
| Approach LOS | | C | | | C | | D | | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 65 (48%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.83 | |
| Intersection Signal Delay (s/veh): 35.6 | Intersection LOS: D |
| Intersection Capacity Utilization 94.8% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 33.8 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 44 | 195 | 17 | 25 | 339 | 3 | 40 | 326 | 65 | 1 | 174 | 82 |
| Future Vol, veh/h | 44 | 195 | 17 | 25 | 339 | 3 | 40 | 326 | 65 | 1 | 174 | 82 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 100 | 3 | 0 |
| Mvmt Flow | 44 | 195 | 17 | 25 | 339 | 3 | 40 | 326 | 65 | 1 | 174 | 82 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

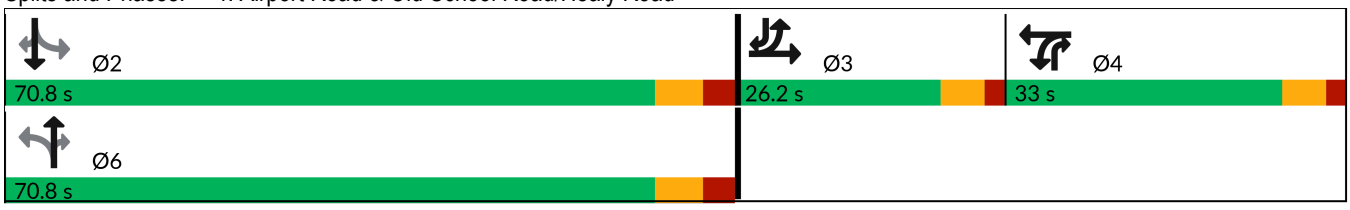
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 21.6 | 33.3 | 44.1 | 29.6 |
| HCM LOS | C | D | E | D |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 9% | 17% | 7% | 0% |
| Vol Thru, % | 76% | 76% | 92% | 68% |
| Vol Right, % | 15% | 7% | 1% | 32% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 431 | 256 | 367 | 257 |
| LT Vol | 40 | 44 | 25 | 1 |
| Through Vol | 326 | 195 | 339 | 174 |
| RT Vol | 65 | 17 | 3 | 82 |
| Lane Flow Rate | 431 | 256 | 367 | 257 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.881 | 0.574 | 0.782 | 0.669 |
| Departure Headway (Hd) | 7.357 | 8.077 | 7.672 | 9.375 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 491 | 445 | 470 | 385 |
| Service Time | 5.414 | 6.147 | 5.73 | 7.444 |
| HCM Lane V/C Ratio | 0.878 | 0.575 | 0.781 | 0.668 |
| HCM Control Delay, s/veh | 44.1 | 21.6 | 33.3 | 29.6 |
| HCM Lane LOS | E | C | D | D |
| HCM 95th-tile Q | 9.6 | 3.5 | 7 | 4.7 |

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 143 | 275 | 34 | 750 | 74 | 33 | 371 | 46 |
| Future Volume (vph) | 143 | 275 | 34 | 750 | 74 | 33 | 371 | 46 |
| Turn Type | NA | NA | Perm | NA | pm+ov | Perm | NA | pm+ov |
| Protected Phases | 3 | 4 | | 6 | 4 | | 2 | 3 |
| Permitted Phases | | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 4 | 6 | 6 | 4 | 2 | 2 | 3 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 | 8.0 |
| Minimum Split (s) | 26.2 | 26.2 | 22.7 | 22.7 | 26.2 | 22.7 | 22.7 | 26.2 |
| Total Split (s) | 26.2 | 33.0 | 70.8 | 70.8 | 33.0 | 70.8 | 70.8 | 26.2 |
| Total Split (%) | 20.2% | 25.4% | 54.5% | 54.5% | 25.4% | 54.5% | 54.5% | 20.2% |
| Yellow Time (s) | 4.2 | 4.2 | 4.6 | 4.6 | 4.2 | 4.6 | 4.6 | 4.2 |
| All-Red Time (s) | 2.0 | 2.0 | 3.1 | 3.1 | 2.0 | 3.1 | 3.1 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 6.2 | 6.2 | | 7.7 | 6.2 | | 7.7 | 6.2 |
| Lead/Lag | Lead | Lag | | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | Yes | | | Yes | | | Yes |
| Recall Mode | None | None | Max | Max | None | Max | Max | None |
| Act Effct Green (s) | 19.9 | 26.8 | | 63.1 | 97.6 | | 63.1 | 90.7 |
| Actuated g/C Ratio | 0.15 | 0.21 | | 0.49 | 0.75 | | 0.49 | 0.70 |
| v/c Ratio | 0.94 | 1.13 | | 0.96 | 0.06 | | 0.96 | 0.04 |
| Control Delay (s/veh) | 93.9 | 132.9 | | 55.1 | 2.8 | | 68.3 | 1.8 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 93.9 | 132.9 | | 55.1 | 2.8 | | 68.3 | 1.8 |
| LOS | F | F | | E | A | | E | A |
| Approach Delay (s/veh) | 93.9 | 132.9 | | 50.6 | | | 61.5 | |
| Approach LOS | F | F | | D | | | E | |

| Intersection Summary | |
|---|---|
| Cycle Length: 130 | |
| Actuated Cycle Length: 129.9 | |
| Natural Cycle: 140 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 1.13 | |
| Intersection Signal Delay (s/veh): 76.5 | Intersection LOS: E |
| Intersection Capacity Utilization 105.8% | ICU Level of Service G |
| Analysis Period (min) 15 | |

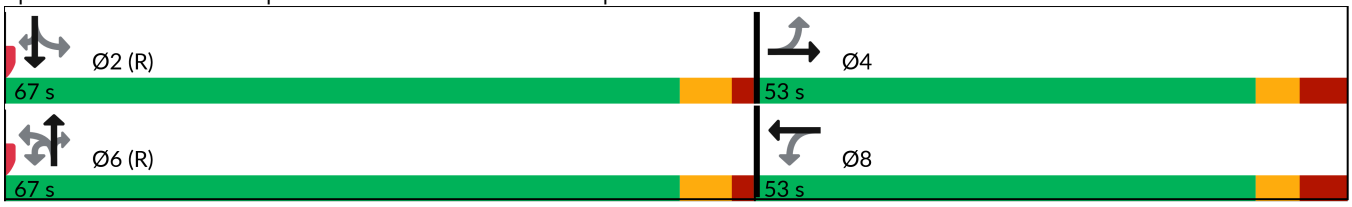
Splits and Phases: 4: Airport Road & Old School Road/Healy Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 749 | 27 | 3 | 490 | 29 |
| Future Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 749 | 27 | 3 | 490 | 29 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 53.0 | 53.0 | 53.0 | 53.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 |
| Total Split (%) | 44.2% | 44.2% | 44.2% | 44.2% | 55.8% | 55.8% | 55.8% | 55.8% | 55.8% | 55.8% | 55.8% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 21.1 | 21.1 | 21.1 | 21.1 | | 84.1 | 84.1 | 84.1 | 84.1 | 84.1 | 84.1 |
| Actuated g/C Ratio | 0.18 | 0.18 | 0.18 | 0.18 | | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| v/c Ratio | 0.73 | 0.19 | 0.27 | 0.02 | | 0.15 | 0.31 | 0.04 | 0.01 | 0.21 | 0.03 |
| Control Delay (s/veh) | 67.1 | 0.9 | 44.2 | 0.1 | | 17.4 | 16.5 | 7.8 | 7.7 | 7.3 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 67.1 | 0.9 | 44.2 | 0.1 | | 17.4 | 16.5 | 7.8 | 7.7 | 7.3 | 1.2 |
| LOS | E | A | D | A | | B | B | A | A | A | A |
| Approach Delay (s/veh) | | 41.6 | | 38.3 | | | 16.3 | | | 7.0 | |
| Approach LOS | | D | | D | | | B | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 58 (48%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.73 | |
| Intersection Signal Delay (s/veh): 17.6 | Intersection LOS: B |
| Intersection Capacity Utilization 66.5% | ICU Level of Service C |
| Analysis Period (min) 15 | |

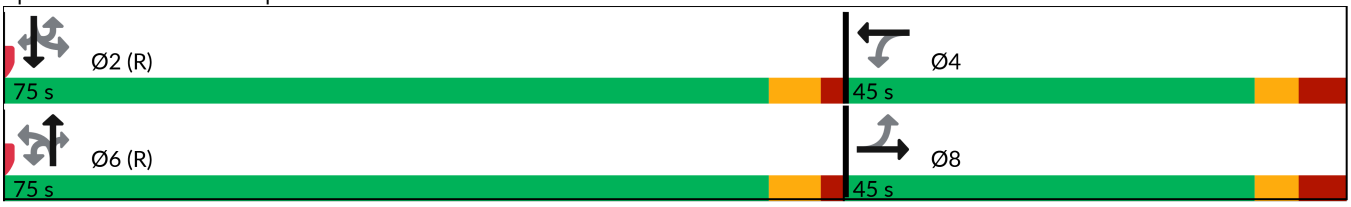
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 879 | 49 | 8 | 20 | 610 | 9 |
| Future Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 879 | 49 | 8 | 20 | 610 | 9 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 37.2 | 37.2 | 37.2 | 37.2 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 |
| Total Split (s) | 45.0 | 45.0 | 45.0 | 45.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 37.5% | 37.5% | 37.5% | 37.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 14.4 | 14.4 | 14.4 | 14.4 | | 96.1 | 96.1 | 96.1 | | 96.1 | 96.1 | 96.1 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | | 0.80 | 0.80 | 0.80 | | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.04 | 0.15 | 0.54 | 0.03 | | 0.10 | 0.33 | 0.07 | | 0.10 | 0.24 | 0.01 |
| Control Delay (s/veh) | 44.8 | 0.8 | 62.8 | 0.1 | | 5.2 | 4.9 | 1.6 | | 7.8 | 5.7 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 44.8 | 0.8 | 62.8 | 0.1 | | 5.2 | 4.9 | 1.6 | | 7.8 | 5.7 | 1.0 |
| LOS | D | A | E | A | | A | A | A | | A | A | A |
| Approach Delay (s/veh) | | 4.7 | | 57.1 | | | 4.7 | | | | 5.8 | |
| Approach LOS | | A | | E | | | A | | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.54 | |
| Intersection Signal Delay (s/veh): 7.7 | Intersection LOS: A |
| Intersection Capacity Utilization 61.2% | ICU Level of Service B |
| Analysis Period (min) 15 | |

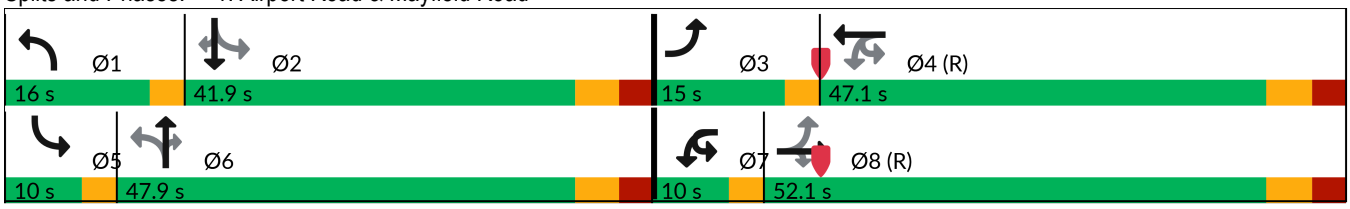
Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane



| Lane Group | EBL | EBT | EBR | WBU | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 240 | 708 | 443 | 1 | 80 | 493 | 245 | 386 | 84 | 100 | 557 | 147 |
| Future Volume (vph) | 240 | 708 | 443 | 1 | 80 | 493 | 245 | 386 | 84 | 100 | 557 | 147 |
| Turn Type | pm+pt | NA | Perm | pm+pt | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 7 | 4 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 8 | 4 | 4 | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 8 | 7 | 7 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 46.1 | 8.0 | 8.0 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 15.0 | 52.1 | 52.1 | 10.0 | 10.0 | 47.1 | 16.0 | 47.9 | 47.9 | 10.0 | 41.9 | 41.9 |
| Total Split (%) | 12.5% | 43.4% | 43.4% | 8.3% | 8.3% | 39.3% | 13.3% | 39.9% | 39.9% | 8.3% | 34.9% | 34.9% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 3.1 | 0.0 | 0.0 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 7.1 | | 3.0 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | None | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 67.6 | 54.6 | 54.6 | | 59.0 | 47.4 | 46.4 | 32.7 | 32.7 | 37.5 | 26.7 | 26.7 |
| Actuated g/C Ratio | 0.56 | 0.46 | 0.46 | | 0.49 | 0.40 | 0.39 | 0.27 | 0.27 | 0.31 | 0.22 | 0.22 |
| v/c Ratio | 0.57 | 0.46 | 0.52 | | 0.27 | 0.47 | 0.83 | 0.47 | 0.22 | 0.36 | 0.78 | 0.38 |
| Control Delay (s/veh) | 20.7 | 25.6 | 8.4 | | 16.5 | 29.3 | 50.5 | 37.6 | 3.3 | 41.2 | 62.4 | 24.1 |
| 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 (s/veh) | 20.7 | 25.6 | 8.4 | | 16.5 | 29.3 | 50.5 | 37.6 | 3.3 | 41.2 | 62.4 | 24.1 |
| LOS | C | C | A | | B | C | D | D | A | D | E | C |
| Approach Delay (s/veh) | | 19.3 | | | | 27.7 | | 38.0 | | | 52.8 | |
| Approach LOS | | B | | | | C | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.83 | |
| Intersection Signal Delay (s/veh): 32.1 | Intersection LOS: C |
| Intersection Capacity Utilization 96.0% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 15.8 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 49 | 260 | 57 | 35 | 91 | 2 | 13 | 112 | 17 | 4 | 342 | 26 |
| Future Vol, veh/h | 49 | 260 | 57 | 35 | 91 | 2 | 13 | 112 | 17 | 4 | 342 | 26 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 2 | 8 | 0 | 2 | 0 | 16 | 2 | 7 | 25 | 1 | 0 |
| Mvmt Flow | 49 | 260 | 57 | 35 | 91 | 2 | 13 | 112 | 17 | 4 | 342 | 26 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

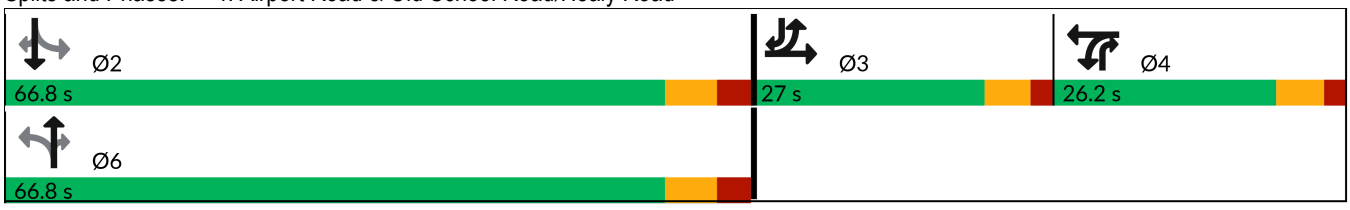
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 16.2 | 11.1 | 11.5 | 18.6 |
| HCM LOS | C | B | B | C |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 9% | 13% | 27% | 1% |
| Vol Thru, % | 79% | 71% | 71% | 92% |
| Vol Right, % | 12% | 16% | 2% | 7% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 142 | 366 | 128 | 372 |
| LT Vol | 13 | 49 | 35 | 4 |
| Through Vol | 112 | 260 | 91 | 342 |
| RT Vol | 17 | 57 | 2 | 26 |
| Lane Flow Rate | 142 | 366 | 128 | 372 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.249 | 0.575 | 0.222 | 0.622 |
| Departure Headway (Hd) | 6.313 | 5.659 | 6.231 | 6.018 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 564 | 633 | 571 | 595 |
| Service Time | 4.408 | 3.735 | 4.329 | 4.09 |
| HCM Lane V/C Ratio | 0.252 | 0.578 | 0.224 | 0.625 |
| HCM Control Delay, s/veh | 11.5 | 16.2 | 11.1 | 18.6 |
| HCM Lane LOS | B | C | B | C |
| HCM 95th-tile Q | 1 | 3.7 | 0.8 | 4.3 |

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 173 | 87 | 13 | 216 | 116 | 32 | 655 | 38 |
| Future Volume (vph) | 173 | 87 | 13 | 216 | 116 | 32 | 655 | 38 |
| Turn Type | NA | NA | Perm | NA | pm+ov | Perm | NA | pm+ov |
| Protected Phases | 3 | 4 | | 6 | 4 | | 2 | 3 |
| Permitted Phases | | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 4 | 6 | 6 | 4 | 2 | 2 | 3 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 | 8.0 |
| Minimum Split (s) | 26.2 | 26.2 | 22.7 | 22.7 | 26.2 | 22.7 | 22.7 | 26.2 |
| Total Split (s) | 27.0 | 26.2 | 66.8 | 66.8 | 26.2 | 66.8 | 66.8 | 27.0 |
| Total Split (%) | 22.5% | 21.8% | 55.7% | 55.7% | 21.8% | 55.7% | 55.7% | 22.5% |
| Yellow Time (s) | 4.2 | 4.2 | 4.6 | 4.6 | 4.2 | 4.6 | 4.6 | 4.2 |
| All-Red Time (s) | 2.0 | 2.0 | 3.1 | 3.1 | 2.0 | 3.1 | 3.1 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 6.2 | 6.2 | | 7.7 | 6.2 | | 7.7 | 6.2 |
| Lead/Lag | Lead | Lag | | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | Yes | | | Yes | | | Yes |
| Recall Mode | None | None | Max | Max | None | Max | Max | None |
| Act Effct Green (s) | 18.6 | 14.7 | | 59.3 | 81.7 | | 59.3 | 85.7 |
| Actuated g/C Ratio | 0.16 | 0.13 | | 0.53 | 0.72 | | 0.53 | 0.76 |
| v/c Ratio | 0.83 | 0.67 | | 0.29 | 0.10 | | 0.79 | 0.03 |
| Control Delay (s/veh) | 66.7 | 59.7 | | 17.4 | 1.1 | | 31.4 | 1.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 66.7 | 59.7 | | 17.4 | 1.1 | | 31.4 | 1.4 |
| LOS | E | E | | B | A | | C | A |
| Approach Delay (s/veh) | 66.7 | 59.7 | | 11.9 | | | 29.8 | |
| Approach LOS | E | E | | B | | | C | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 112.8 | |
| Natural Cycle: 100 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.83 | |
| Intersection Signal Delay (s/veh): 35.1 | Intersection LOS: D |
| Intersection Capacity Utilization 85.2% | ICU Level of Service E |
| Analysis Period (min) 15 | |

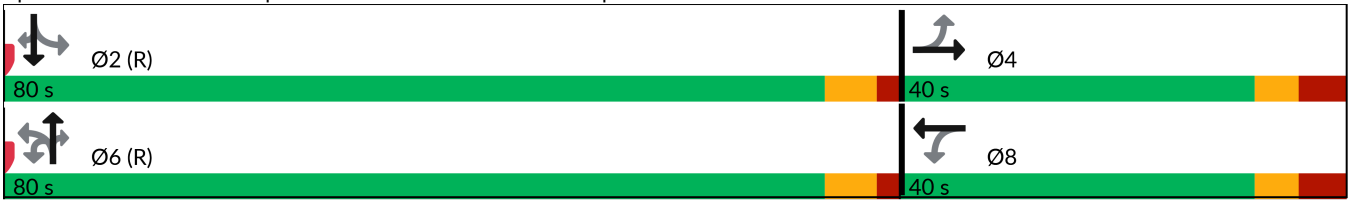
Splits and Phases: 4: Airport Road & Old School Road/Healy Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 344 | 46 | 8 | 664 | 91 |
| Future Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 344 | 46 | 8 | 664 | 91 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 80.0 | 80.0 | 80.0 | 80.0 | 80.0 | 80.0 | 80.0 |
| Total Split (%) | 33.3% | 33.3% | 33.3% | 33.3% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.5 | 13.5 | 13.5 | 13.5 | | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| v/c Ratio | 0.18 | 0.23 | 0.44 | 0.01 | | 0.28 | 0.14 | 0.05 | 0.01 | 0.25 | 0.09 |
| Control Delay (s/veh) | 50.7 | 1.4 | 63.8 | 0.0 | | 5.9 | 3.3 | 1.4 | 6.0 | 5.5 | 2.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 50.7 | 1.4 | 63.8 | 0.0 | | 5.9 | 3.3 | 1.4 | 6.0 | 5.5 | 2.4 |
| LOS | D | A | E | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 11.9 | | 59.5 | | | 3.8 | | | 5.1 | |
| Approach LOS | | B | | E | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.44 | |
| Intersection Signal Delay (s/veh): 6.9 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

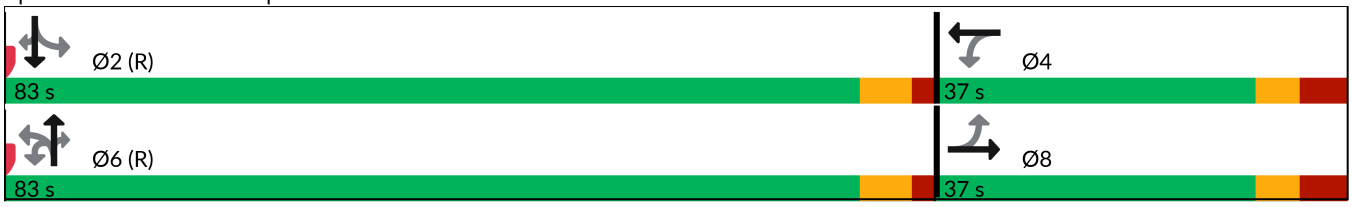
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 527 | 32 | 4 | 776 | 3 |
| Future Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 527 | 32 | 4 | 776 | 3 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 37.0 | 37.0 | 37.0 | 37.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 |
| Total Split (%) | 30.8% | 30.8% | 30.8% | 30.8% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.2 | 13.2 | 13.2 | 13.2 | | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.03 | 0.09 | 0.23 | 0.01 | | 0.15 | 0.20 | 0.03 | 0.01 | 0.29 | 0.00 |
| Control Delay (s/veh) | 47.5 | 0.6 | 54.7 | 0.0 | | 2.2 | 1.5 | 0.1 | 4.0 | 3.0 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 47.5 | 0.6 | 54.7 | 0.0 | | 2.2 | 1.5 | 0.1 | 4.0 | 3.0 | 0.0 |
| LOS | D | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 3.7 | | 47.8 | | | 1.5 | | | 3.0 | |
| Approach LOS | | A | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.29 | |
| Intersection Signal Delay (s/veh): 3.1 | Intersection LOS: A |
| Intersection Capacity Utilization 59.3% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 4 | 0 | 350 | 775 | 14 |
| Future Volume (Veh/h) | 0 | 4 | 0 | 350 | 775 | 14 |
| 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) | 0 | 4 | 0 | 350 | 775 | 14 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | 170 | | |
| pX, platoon unblocked | 0.97 | | | | | |
| vC, conflicting volume | 1132 | 782 | 789 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1120 | 782 | 789 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 221 | 397 | 831 | | | |

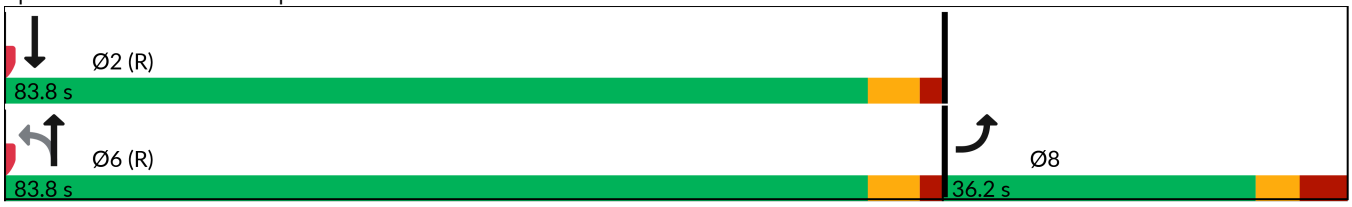
| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 4 | 350 | 789 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 4 | 0 | 14 |
| cSH | 397 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.21 | 0.46 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 |
| Control Delay (s/veh) | 14.1 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 14.1 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | | 0.0 | |
| Intersection Capacity Utilization | | 51.6% | ICU Level of Service |
| Analysis Period (min) | | 15 | |

| Lane Group | EBL | NBL | NBT | SBT |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 10 | 43 | 340 | 776 |
| Future Volume (vph) | 10 | 43 | 340 | 776 |
| Turn Type | Prot | Perm | NA | NA |
| Protected Phases | 8 | | 6 | 2 |
| Permitted Phases | | 6 | | |
| Detector Phase | 8 | 6 | 6 | 2 |
| Switch Phase | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 36.2 | 83.8 | 83.8 | 83.8 |
| Total Split (%) | 30.2% | 69.8% | 69.8% | 69.8% |
| Yellow Time (s) | 4.0 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | | 6.6 | 6.6 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.0 | | 109.3 | 109.3 |
| Actuated g/C Ratio | 0.10 | | 0.91 | 0.91 |
| v/c Ratio | 0.13 | | 0.30 | 0.51 |
| Control Delay (s/veh) | 38.5 | | 7.4 | 4.3 |
| Queue Delay | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 38.5 | | 7.4 | 4.3 |
| LOS | D | | A | A |
| Approach Delay (s/veh) | 38.5 | | 7.4 | 4.3 |
| Approach LOS | D | | A | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.51 | |
| Intersection Signal Delay (s/veh): 5.8 | Intersection LOS: A |
| Intersection Capacity Utilization 76.3% | ICU Level of Service D |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 7 | 0 | 383 | 756 | 27 |
| Future Volume (Veh/h) | 0 | 7 | 0 | 383 | 756 | 27 |
| 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) | 0 | 7 | 0 | 383 | 756 | 27 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | | 175 | |
| pX, platoon unblocked | 0.85 | 0.85 | 0.85 | | | |
| vC, conflicting volume | 1153 | 770 | 783 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1090 | 639 | 655 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 98 | 100 | | | |
| cM capacity (veh/h) | 202 | 407 | 791 | | | |

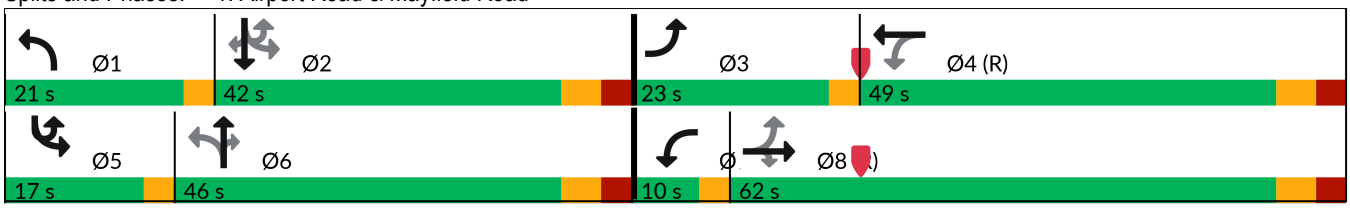
| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 7 | 383 | 783 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 7 | 0 | 27 |
| cSH | 407 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.23 | 0.46 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 |
| Control Delay (s/veh) | 14.0 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 14.0 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 51.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 234 | 592 | 206 | 101 | 722 | 294 | 660 | 93 | 1 | 139 | 434 | 324 |
| Future Volume (vph) | 234 | 592 | 206 | 101 | 722 | 294 | 660 | 93 | 1 | 139 | 434 | 324 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | | 7 | 4 | 1 | 6 | | 5 | 5 | 2 | |
| Permitted Phases | 8 | | 8 | 4 | | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 3 | 8 | 8 | 7 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 46.1 | 8.0 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 23.0 | 62.0 | 62.0 | 10.0 | 49.0 | 21.0 | 46.0 | 46.0 | 17.0 | 17.0 | 42.0 | 42.0 |
| Total Split (%) | 17.0% | 45.9% | 45.9% | 7.4% | 36.3% | 15.6% | 34.1% | 34.1% | 12.6% | 12.6% | 31.1% | 31.1% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 3.1 | 0.0 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 7.1 | 3.0 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 76.8 | 61.9 | 61.9 | 65.3 | 53.4 | 52.2 | 32.8 | 32.8 | | 44.0 | 27.6 | 27.6 |
| Actuated g/C Ratio | 0.57 | 0.46 | 0.46 | 0.48 | 0.40 | 0.39 | 0.24 | 0.24 | | 0.33 | 0.20 | 0.20 |
| v/c Ratio | 0.71 | 0.41 | 0.26 | 0.27 | 0.61 | 0.83 | 0.83 | 0.26 | | 0.66 | 0.65 | 0.60 |
| Control Delay (s/veh) | 28.8 | 26.7 | 4.1 | 18.5 | 37.0 | 50.3 | 58.1 | 6.8 | | 42.4 | 53.3 | 9.6 |
| 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 (s/veh) | 28.8 | 26.7 | 4.1 | 18.5 | 37.0 | 50.3 | 58.1 | 6.8 | | 42.4 | 53.3 | 9.6 |
| LOS | C | C | A | B | D | D | E | A | | D | D | A |
| Approach Delay (s/veh) | | 22.7 | | | 34.9 | | 51.4 | | | | 35.8 | |
| Approach LOS | | C | | | C | | D | | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 65 (48%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.83 | |
| Intersection Signal Delay (s/veh): 36.3 | Intersection LOS: D |
| Intersection Capacity Utilization 95.8% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 37 |
| Intersection LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 44 | 200 | 17 | 25 | 354 | 3 | 40 | 326 | 65 | 1 | 174 | 82 |
| Future Vol, veh/h | 44 | 200 | 17 | 25 | 354 | 3 | 40 | 326 | 65 | 1 | 174 | 82 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 100 | 3 | 0 |
| Mvmt Flow | 44 | 200 | 17 | 25 | 354 | 3 | 40 | 326 | 65 | 1 | 174 | 82 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

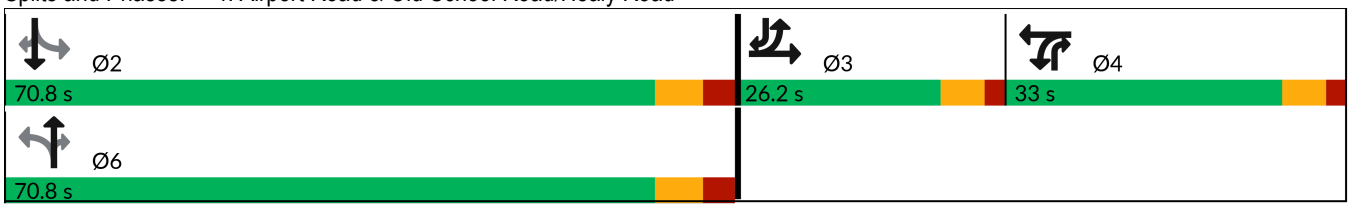
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 22.9 | 38.3 | 47.9 | 31 |
| HCM LOS | C | E | E | D |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 9% | 17% | 7% | 0% |
| Vol Thru, % | 76% | 77% | 93% | 68% |
| Vol Right, % | 15% | 7% | 1% | 32% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 431 | 261 | 382 | 257 |
| LT Vol | 40 | 44 | 25 | 1 |
| Through Vol | 326 | 200 | 354 | 174 |
| RT Vol | 65 | 17 | 3 | 82 |
| Lane Flow Rate | 431 | 261 | 382 | 257 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.9 | 0.597 | 0.825 | 0.682 |
| Departure Headway (Hd) | 7.517 | 8.23 | 7.776 | 9.56 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 483 | 436 | 466 | 378 |
| Service Time | 5.585 | 6.312 | 5.846 | 7.644 |
| HCM Lane V/C Ratio | 0.892 | 0.599 | 0.82 | 0.68 |
| HCM Control Delay, s/veh | 47.9 | 22.9 | 38.3 | 31 |
| HCM Lane LOS | E | C | E | D |
| HCM 95th-tile Q | 10 | 3.8 | 7.9 | 4.8 |

| Lane Group | EBT | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 143 | 275 | 49 | 771 | 74 | 33 | 378 | 46 |
| Future Volume (vph) | 143 | 275 | 49 | 771 | 74 | 33 | 378 | 46 |
| Turn Type | NA | NA | Perm | NA | pm+ov | Perm | NA | pm+ov |
| Protected Phases | 3 | 4 | | 6 | 4 | | 2 | 3 |
| Permitted Phases | | | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 4 | 6 | 6 | 4 | 2 | 2 | 3 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 12.0 | 12.0 | 8.0 | 12.0 | 12.0 | 8.0 |
| Minimum Split (s) | 26.2 | 26.2 | 22.7 | 22.7 | 26.2 | 22.7 | 22.7 | 26.2 |
| Total Split (s) | 26.2 | 33.0 | 70.8 | 70.8 | 33.0 | 70.8 | 70.8 | 26.2 |
| Total Split (%) | 20.2% | 25.4% | 54.5% | 54.5% | 25.4% | 54.5% | 54.5% | 20.2% |
| Yellow Time (s) | 4.2 | 4.2 | 4.6 | 4.6 | 4.2 | 4.6 | 4.6 | 4.2 |
| All-Red Time (s) | 2.0 | 2.0 | 3.1 | 3.1 | 2.0 | 3.1 | 3.1 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 6.2 | 6.2 | | 7.7 | 6.2 | | 7.7 | 6.2 |
| Lead/Lag | Lead | Lag | | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | Yes | | | Yes | | | Yes |
| Recall Mode | None | None | Max | Max | None | Max | Max | None |
| Act Effct Green (s) | 20.0 | 26.8 | | 63.1 | 97.6 | | 63.1 | 90.8 |
| Actuated g/C Ratio | 0.15 | 0.21 | | 0.49 | 0.75 | | 0.49 | 0.70 |
| v/c Ratio | 0.95 | 1.14 | | 1.03 | 0.06 | | 1.11 | 0.04 |
| Control Delay (s/veh) | 96.2 | 134.2 | | 73.7 | 2.8 | | 112.9 | 1.8 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 96.2 | 134.2 | | 73.7 | 2.8 | | 112.9 | 1.8 |
| LOS | F | F | | E | A | | F | A |
| Approach Delay (s/veh) | 96.2 | 134.2 | | 67.8 | | | 101.8 | |
| Approach LOS | F | F | | E | | | F | |

| Intersection Summary | |
|---|---|
| Cycle Length: 130 | |
| Actuated Cycle Length: 130 | |
| Natural Cycle: 150 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 1.14 | |
| Intersection Signal Delay (s/veh): 93.1 | Intersection LOS: F |
| Intersection Capacity Utilization 110.4% | ICU Level of Service H |
| Analysis Period (min) 15 | |

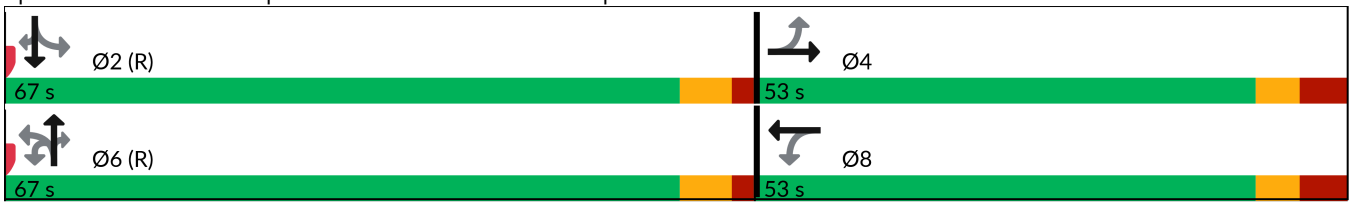
Splits and Phases: 4: Airport Road & Old School Road/Healy Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 771 | 27 | 3 | 538 | 29 |
| Future Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 771 | 27 | 3 | 538 | 29 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 53.0 | 53.0 | 53.0 | 53.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 |
| Total Split (%) | 44.2% | 44.2% | 44.2% | 44.2% | 55.8% | 55.8% | 55.8% | 55.8% | 55.8% | 55.8% | 55.8% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 21.1 | 21.1 | 21.1 | 21.1 | | 84.1 | 84.1 | 84.1 | 84.1 | 84.1 | 84.1 |
| Actuated g/C Ratio | 0.18 | 0.18 | 0.18 | 0.18 | | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 | 0.70 |
| v/c Ratio | 0.73 | 0.20 | 0.27 | 0.02 | | 0.16 | 0.32 | 0.04 | 0.01 | 0.24 | 0.03 |
| Control Delay (s/veh) | 67.1 | 1.1 | 44.2 | 0.1 | | 17.6 | 16.8 | 7.7 | 6.0 | 5.5 | 0.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 67.1 | 1.1 | 44.2 | 0.1 | | 17.6 | 16.8 | 7.7 | 6.0 | 5.5 | 0.4 |
| LOS | E | A | D | A | | B | B | A | A | A | A |
| Approach Delay (s/veh) | | 41.7 | | 38.3 | | | 16.6 | | | 5.2 | |
| Approach LOS | | D | | D | | | B | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 58 (48%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.73 | |
| Intersection Signal Delay (s/veh): 16.8 | Intersection LOS: B |
| Intersection Capacity Utilization 66.5% | ICU Level of Service C |
| Analysis Period (min) 15 | |

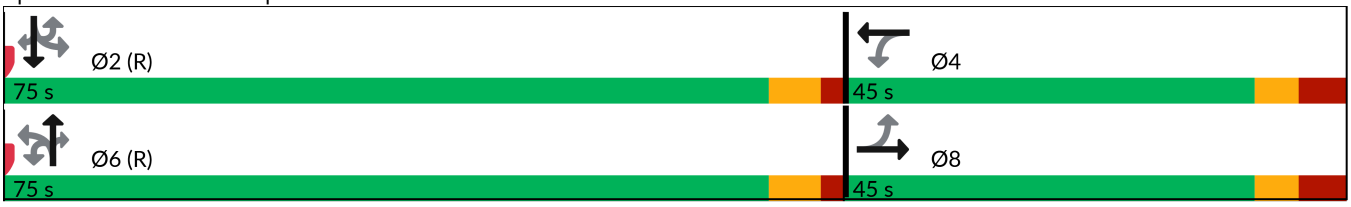
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 901 | 49 | 8 | 20 | 658 | 9 |
| Future Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 901 | 49 | 8 | 20 | 658 | 9 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 37.2 | 37.2 | 37.2 | 37.2 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 | 34.6 |
| Total Split (s) | 45.0 | 45.0 | 45.0 | 45.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 37.5% | 37.5% | 37.5% | 37.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% | 62.5% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 14.4 | 14.4 | 14.4 | 14.4 | | 96.1 | 96.1 | 96.1 | | 96.1 | 96.1 | 96.1 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | | 0.80 | 0.80 | 0.80 | | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.04 | 0.16 | 0.54 | 0.03 | | 0.10 | 0.34 | 0.07 | | 0.10 | 0.26 | 0.01 |
| Control Delay (s/veh) | 44.8 | 0.9 | 62.8 | 0.3 | | 5.3 | 5.0 | 1.6 | | 10.0 | 8.4 | 0.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 44.8 | 0.9 | 62.8 | 0.3 | | 5.3 | 5.0 | 1.6 | | 10.0 | 8.4 | 0.9 |
| LOS | D | A | E | A | | A | A | A | | B | A | A |
| Approach Delay (s/veh) | | 4.8 | | 57.1 | | | 4.8 | | | | 8.4 | |
| Approach LOS | | A | | E | | | A | | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.54 | |
| Intersection Signal Delay (s/veh): 8.7 | Intersection LOS: A |
| Intersection Capacity Utilization 61.2% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 12 | 0 | 934 | 531 | 4 |
| Future Volume (Veh/h) | 0 | 12 | 0 | 934 | 531 | 4 |
| 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) | 0 | 12 | 0 | 934 | 531 | 4 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | 170 | | |
| pX, platoon unblocked | 0.75 | | | | | |
| vC, conflicting volume | 1467 | 533 | 535 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1456 | 533 | 535 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 98 | 100 | | | |
| cM capacity (veh/h) | 107 | 551 | 1033 | | | |

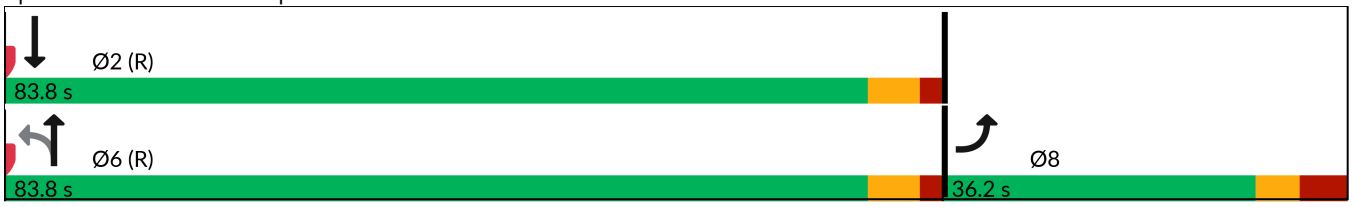
| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 12 | 934 | 535 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 12 | 0 | 4 |
| cSH | 551 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.55 | 0.31 |
| Queue Length 95th (m) | 0.5 | 0.0 | 0.0 |
| Control Delay (s/veh) | 11.7 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 11.7 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 52.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | NBL | NBT | SBT |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 37 | 22 | 898 | 542 |
| Future Volume (vph) | 37 | 22 | 898 | 542 |
| Turn Type | Prot | Perm | NA | NA |
| Protected Phases | 8 | | 6 | 2 |
| Permitted Phases | | 6 | | |
| Detector Phase | 8 | 6 | 6 | 2 |
| Switch Phase | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 36.2 | 83.8 | 83.8 | 83.8 |
| Total Split (%) | 30.2% | 69.8% | 69.8% | 69.8% |
| Yellow Time (s) | 4.0 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | | 6.6 | 6.6 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.1 | | 98.5 | 98.5 |
| Actuated g/C Ratio | 0.10 | | 0.82 | 0.82 |
| v/c Ratio | 0.31 | | 0.66 | 0.39 |
| Control Delay (s/veh) | 46.5 | | 17.3 | 4.9 |
| Queue Delay | 0.0 | | 0.0 | 0.0 |
| Total Delay (s/veh) | 46.5 | | 17.3 | 4.9 |
| LOS | D | | B | A |
| Approach Delay (s/veh) | 46.5 | | 17.3 | 4.9 |
| Approach LOS | D | | B | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.66 | |
| Intersection Signal Delay (s/veh): 13.8 | Intersection LOS: B |
| Intersection Capacity Utilization 87.3% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 25 | 0 | 920 | 545 | 8 |
| Future Volume (Veh/h) | 0 | 25 | 0 | 920 | 545 | 8 |
| 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) | 0 | 25 | 0 | 920 | 545 | 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) | | | | | 175 | |
| pX, platoon unblocked | 0.90 | 0.90 | 0.90 | | | |
| vC, conflicting volume | 1469 | 549 | 553 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1466 | 448 | 452 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 96 | 100 | | | |
| cM capacity (veh/h) | 127 | 556 | 1002 | | | |

| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 25 | 920 | 553 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 25 | 0 | 8 |
| cSH | 556 | 1700 | 1700 |
| Volume to Capacity | 0.04 | 0.54 | 0.33 |
| Queue Length 95th (m) | 1.1 | 0.0 | 0.0 |
| Control Delay (s/veh) | 11.8 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s/veh) | 11.8 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 229 | 801 | 1 | 81 | 552 | 72 | 257 | 393 | 86 | 98 | 591 | 179 |
| Future Volume (vph) | 229 | 801 | 1 | 81 | 552 | 72 | 257 | 393 | 86 | 98 | 591 | 179 |
| Turn Type | pm+pt | NA | pm+pt | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 13.0 | 52.1 | 10.0 | 10.0 | 49.1 | 49.1 | 16.0 | 47.9 | 47.9 | 10.0 | 41.9 | 41.9 |
| Total Split (%) | 10.8% | 43.4% | 8.3% | 8.3% | 40.9% | 40.9% | 13.3% | 39.9% | 39.9% | 8.3% | 34.9% | 34.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | None | C-Max | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 66.2 | 53.4 | | 58.9 | 47.4 | 47.4 | 47.8 | 34.1 | 34.1 | 38.7 | 27.9 | 27.9 |
| Actuated g/C Ratio | 0.55 | 0.45 | | 0.49 | 0.40 | 0.40 | 0.40 | 0.28 | 0.28 | 0.32 | 0.23 | 0.23 |
| v/c Ratio | 0.52 | 0.62 | | 0.47 | 0.30 | 0.14 | 0.88 | 0.46 | 0.23 | 0.34 | 0.79 | 0.41 |
| Control Delay (s/veh) | 20.4 | 25.1 | | 23.9 | 26.5 | 1.6 | 56.2 | 36.5 | 6.7 | 38.0 | 61.3 | 21.1 |
| 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 (s/veh) | 20.4 | 25.1 | | 23.9 | 26.5 | 1.6 | 56.2 | 36.5 | 6.7 | 38.0 | 61.3 | 21.1 |
| LOS | C | C | | C | C | A | E | D | A | D | E | C |
| Approach Delay (s/veh) | | 24.4 | | | 23.7 | | | 39.9 | | | 50.4 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.88 | |
| Intersection Signal Delay (s/veh): 33.1 | Intersection LOS: C |
| Intersection Capacity Utilization 96.8% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 14.9 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 49 | 265 | 57 | 35 | 95 | 2 | 13 | 119 | 17 | 4 | 370 | 26 |
| Future Vol, veh/h | 49 | 265 | 57 | 35 | 95 | 2 | 13 | 119 | 17 | 4 | 370 | 26 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 2 | 8 | 0 | 2 | 0 | 16 | 2 | 7 | 25 | 1 | 0 |
| Mvmt Flow | 49 | 265 | 57 | 35 | 95 | 2 | 13 | 119 | 17 | 4 | 370 | 26 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

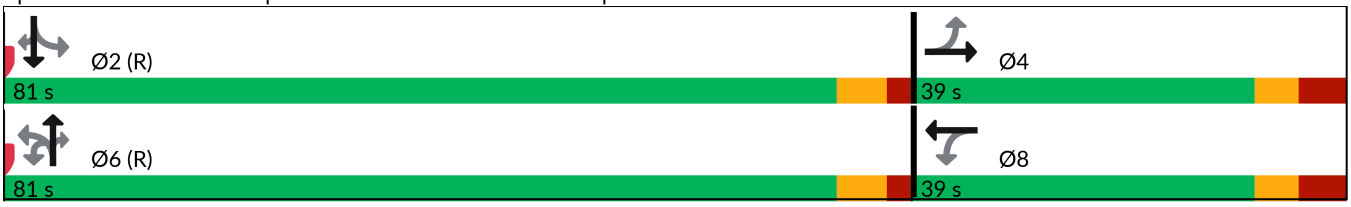
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 1 | 1 |
| HCM Control Delay, s/veh | 19.6 | 11.9 | 10.7 | 13.2 |
| HCM LOS | C | B | B | B |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 13% | 27% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 70% | 71% | 72% | 0% | 100% | 83% |
| Vol Right, % | 0% | 0% | 30% | 15% | 2% | 0% | 0% | 17% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 13 | 79 | 57 | 371 | 132 | 4 | 247 | 149 |
| LT Vol | 13 | 0 | 0 | 49 | 35 | 4 | 0 | 0 |
| Through Vol | 0 | 79 | 40 | 265 | 95 | 0 | 247 | 123 |
| RT Vol | 0 | 0 | 17 | 57 | 2 | 0 | 0 | 26 |
| Lane Flow Rate | 13 | 79 | 57 | 371 | 132 | 4 | 247 | 149 |
| Geometry Grp | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Degree of Util (X) | 0.028 | 0.152 | 0.107 | 0.643 | 0.251 | 0.008 | 0.443 | 0.262 |
| Departure Headway (Hd) | 7.671 | 6.91 | 6.782 | 6.237 | 6.839 | 7.395 | 6.464 | 6.322 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 464 | 515 | 525 | 575 | 521 | 482 | 555 | 564 |
| Service Time | 5.465 | 4.704 | 4.575 | 4.002 | 4.626 | 5.172 | 4.24 | 4.098 |
| HCM Lane V/C Ratio | 0.028 | 0.153 | 0.109 | 0.645 | 0.253 | 0.008 | 0.445 | 0.264 |
| HCM Control Delay, s/veh | 10.7 | 11 | 10.4 | 19.6 | 11.9 | 10.2 | 14.3 | 11.4 |
| HCM Lane LOS | B | B | B | C | B | B | B | B |
| HCM 95th-tile Q | 0.1 | 0.5 | 0.4 | 4.6 | 1 | 0 | 2.3 | 1 |

| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 338 | 46 | 8 | 735 | 91 |
| Future Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 338 | 46 | 8 | 735 | 91 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.5 | 13.5 | 13.5 | 13.5 | | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| v/c Ratio | 0.18 | 0.25 | 0.44 | 0.00 | | 0.31 | 0.13 | 0.05 | 0.01 | 0.27 | 0.09 |
| Control Delay (s/veh) | 50.7 | 1.7 | 63.8 | 0.0 | | 6.0 | 2.8 | 1.3 | 4.0 | 4.2 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 50.7 | 1.7 | 63.8 | 0.0 | | 6.0 | 2.8 | 1.3 | 4.0 | 4.2 | 1.1 |
| LOS | D | A | E | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 12.2 | | 59.5 | | | 3.5 | | | 3.9 | |
| Approach LOS | | B | | E | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.44 | |
| Intersection Signal Delay (s/veh): 6.0 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

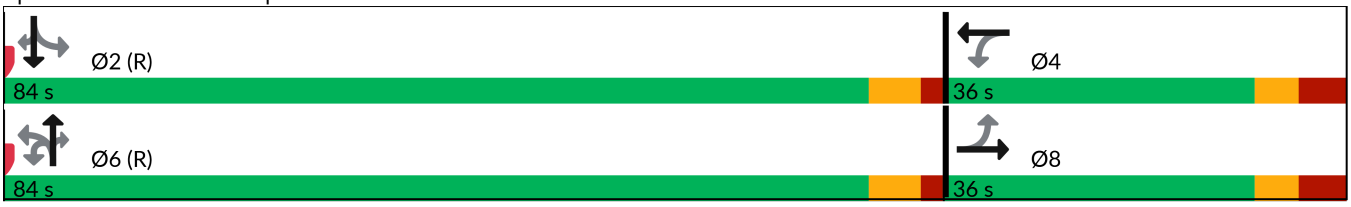
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 526 | 32 | 4 | 848 | 3 |
| Future Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 526 | 32 | 4 | 848 | 3 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.2 | 13.2 | 13.2 | 13.2 | | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.03 | 0.10 | 0.23 | 0.01 | | 0.16 | 0.20 | 0.03 | 0.01 | 0.31 | 0.00 |
| Control Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.2 | 1.3 | 0.1 | 2.5 | 2.2 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.2 | 1.3 | 0.1 | 2.5 | 2.2 | 0.0 |
| LOS | D | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 3.9 | | 47.8 | | | 1.4 | | | 2.2 | |
| Approach LOS | | A | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.31 | |
| Intersection Signal Delay (s/veh): 2.6 | Intersection LOS: A |
| Intersection Capacity Utilization 61.3% | ICU Level of Service B |
| Analysis Period (min) 15 | |

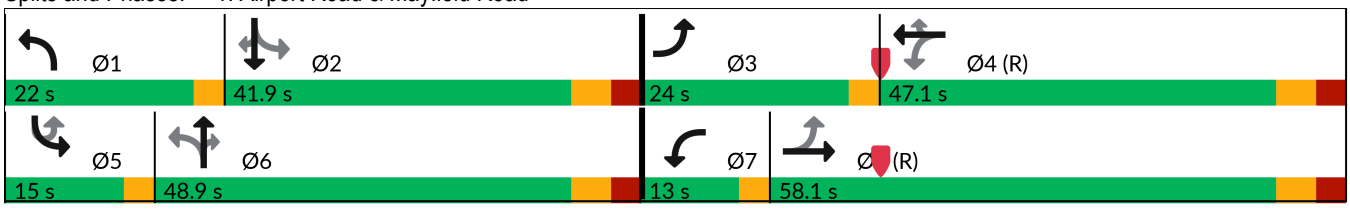
Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 306 | 664 | 104 | 798 | 68 | 342 | 704 | 96 | 1 | 135 | 441 | 312 |
| Future Volume (vph) | 306 | 664 | 104 | 798 | 68 | 342 | 704 | 96 | 1 | 135 | 441 | 312 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | custom | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 4 | 6 | | 6 | 5 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 24.0 | 58.1 | 13.0 | 47.1 | 47.1 | 22.0 | 48.9 | 48.9 | 15.0 | 15.0 | 41.9 | 41.9 |
| Total Split (%) | 17.8% | 43.0% | 9.6% | 34.9% | 34.9% | 16.3% | 36.2% | 36.2% | 11.1% | 11.1% | 31.0% | 31.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 75.4 | 59.7 | 61.8 | 49.1 | 49.1 | 53.6 | 35.6 | 35.6 | | 42.6 | 27.7 | 27.7 |
| Actuated g/C Ratio | 0.56 | 0.44 | 0.46 | 0.36 | 0.36 | 0.40 | 0.26 | 0.26 | | 0.32 | 0.21 | 0.21 |
| v/c Ratio | 0.77 | 0.44 | 0.37 | 0.45 | 0.15 | 0.92 | 0.83 | 0.26 | | 0.65 | 0.66 | 0.58 |
| Control Delay (s/veh) | 32.5 | 25.7 | 20.4 | 35.3 | 0.7 | 63.3 | 56.1 | 6.8 | | 41.8 | 53.7 | 9.0 |
| 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 (s/veh) | 32.5 | 25.7 | 20.4 | 35.3 | 0.7 | 63.3 | 56.1 | 6.8 | | 41.8 | 53.7 | 9.0 |
| LOS | C | C | C | D | A | E | E | A | | D | D | A |
| Approach Delay (s/veh) | | 27.4 | | 31.3 | | | 54.1 | | | | 36.2 | |
| Approach LOS | | C | | C | | | D | | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 0 (0%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.92 | |
| Intersection Signal Delay (s/veh): 37.4 | Intersection LOS: D |
| Intersection Capacity Utilization 102.5% | ICU Level of Service G |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 24.5 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 44 | 214 | 17 | 25 | 373 | 3 | 40 | 354 | 65 | 1 | 185 | 82 |
| Future Vol, veh/h | 44 | 214 | 17 | 25 | 373 | 3 | 40 | 354 | 65 | 1 | 185 | 82 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 100 | 3 | 0 |
| Mvmt Flow | 44 | 214 | 17 | 25 | 373 | 3 | 40 | 354 | 65 | 1 | 185 | 82 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 1 | 1 |
| HCM Control Delay, s/veh | 22.5 | 41 | 17 | 14.5 |
| HCM LOS | C | E | C | B |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 16% | 6% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 64% | 78% | 93% | 0% | 100% | 43% |
| Vol Right, % | 0% | 0% | 36% | 6% | 1% | 0% | 0% | 57% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 40 | 236 | 183 | 275 | 401 | 1 | 123 | 144 |
| LT Vol | 40 | 0 | 0 | 44 | 25 | 1 | 0 | 0 |
| Through Vol | 0 | 236 | 118 | 214 | 373 | 0 | 123 | 62 |
| RT Vol | 0 | 0 | 65 | 17 | 3 | 0 | 0 | 82 |
| Lane Flow Rate | 40 | 236 | 183 | 275 | 401 | 1 | 123 | 144 |
| Geometry Grp | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Degree of Util (X) | 0.094 | 0.52 | 0.392 | 0.61 | 0.854 | 0.003 | 0.288 | 0.317 |
| Departure Headway (Hd) | 8.457 | 7.935 | 7.711 | 7.986 | 7.667 | 10.663 | 8.407 | 7.934 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 424 | 453 | 467 | 451 | 477 | 336 | 427 | 453 |
| Service Time | 6.212 | 5.689 | 5.464 | 5.735 | 5.367 | 8.421 | 6.164 | 5.69 |
| HCM Lane V/C Ratio | 0.094 | 0.521 | 0.392 | 0.61 | 0.841 | 0.003 | 0.288 | 0.318 |
| HCM Control Delay, s/veh | 12.1 | 19 | 15.4 | 22.5 | 41 | 13.5 | 14.6 | 14.4 |
| HCM Lane LOS | B | C | C | C | E | B | B | B |
| HCM 95th-tile Q | 0.3 | 2.9 | 1.8 | 4 | 8.7 | 0 | 1.2 | 1.3 |

| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 885 | 27 | 3 | 535 | 29 |
| Future Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 885 | 27 | 3 | 535 | 29 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 48.0 | 48.0 | 48.0 | 48.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 18.2 | 18.2 | 18.2 | 18.2 | | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.15 | 0.15 | 0.15 | 0.15 | | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| v/c Ratio | 0.68 | 0.20 | 0.32 | 0.02 | | 0.19 | 0.35 | 0.04 | 0.01 | 0.23 | 0.05 |
| Control Delay (s/veh) | 64.2 | 1.0 | 49.4 | 0.1 | | 7.5 | 6.7 | 0.9 | 6.3 | 6.2 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 64.2 | 1.0 | 49.4 | 0.1 | | 7.5 | 6.7 | 0.9 | 6.3 | 6.2 | 1.0 |
| LOS | E | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 39.9 | | 42.8 | | | 6.5 | | | 5.9 | |
| Approach LOS | | D | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay (s/veh): 11.6 | Intersection LOS: B |
| Intersection Capacity Utilization 66.8% | ICU Level of Service C |
| Analysis Period (min) 15 | |

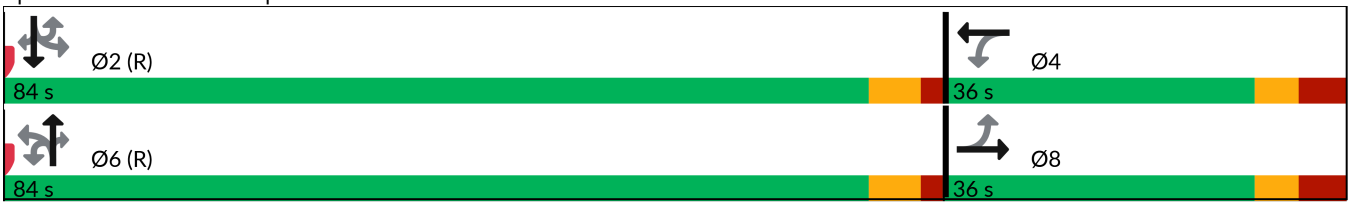
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1019 | 49 | 8 | 20 | 657 | 9 |
| Future Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1019 | 49 | 8 | 20 | 657 | 9 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 14.3 | 14.3 | 14.3 | 14.3 | | 96.2 | 96.2 | 96.2 | | 96.2 | 96.2 | 96.2 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | | 0.80 | 0.80 | 0.80 | | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.04 | 0.14 | 0.54 | 0.03 | | 0.10 | 0.39 | 0.07 | | 0.12 | 0.25 | 0.01 |
| Control Delay (s/veh) | 45.0 | 0.7 | 63.2 | 0.3 | | 5.2 | 5.3 | 1.6 | | 3.1 | 2.0 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 45.0 | 0.7 | 63.2 | 0.3 | | 5.2 | 5.3 | 1.6 | | 3.1 | 2.0 | 0.0 |
| LOS | D | A | E | A | | A | A | A | | A | A | A |
| Approach Delay (s/veh) | | 4.7 | | 57.4 | | | 5.1 | | | | 2.1 | |
| Approach LOS | | A | | E | | | A | | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.54 | |
| Intersection Signal Delay (s/veh): 6.4 | Intersection LOS: A |
| Intersection Capacity Utilization 55.8% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane



| Lane Group | EBL | EBT | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 244 | 801 | 1 | 81 | 552 | 77 | 257 | 403 | 86 | 98 | 596 | 183 |
| Future Volume (vph) | 244 | 801 | 1 | 81 | 552 | 77 | 257 | 403 | 86 | 98 | 596 | 183 |
| Turn Type | pm+pt | NA | pm+pt | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 13.0 | 52.1 | 10.0 | 10.0 | 49.1 | 49.1 | 16.0 | 47.9 | 47.9 | 10.0 | 41.9 | 41.9 |
| Total Split (%) | 10.8% | 43.4% | 8.3% | 8.3% | 40.9% | 40.9% | 13.3% | 39.9% | 39.9% | 8.3% | 34.9% | 34.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | None | C-Max | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 66.0 | 53.2 | | 58.3 | 46.9 | 46.9 | 48.0 | 34.3 | 34.3 | 38.9 | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.55 | 0.44 | | 0.49 | 0.39 | 0.39 | 0.40 | 0.29 | 0.29 | 0.32 | 0.23 | 0.23 |
| v/c Ratio | 0.55 | 0.62 | | 0.47 | 0.31 | 0.15 | 0.88 | 0.46 | 0.23 | 0.34 | 0.79 | 0.41 |
| Control Delay (s/veh) | 21.6 | 25.2 | | 24.2 | 26.8 | 2.1 | 56.4 | 36.5 | 6.7 | 35.9 | 59.6 | 19.1 |
| 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 (s/veh) | 21.6 | 25.2 | | 24.2 | 26.8 | 2.1 | 56.4 | 36.5 | 6.7 | 35.9 | 59.6 | 19.1 |
| LOS | C | C | | C | C | A | E | D | A | D | E | B |
| Approach Delay (s/veh) | | 24.7 | | | 23.9 | | | 39.9 | | | 48.5 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.88 | |
| Intersection Signal Delay (s/veh): 32.8 | Intersection LOS: C |
| Intersection Capacity Utilization 97.7% | ICU Level of Service F |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 15.3 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 49 | 274 | 57 | 35 | 98 | 2 | 13 | 119 | 17 | 4 | 370 | 26 |
| Future Vol, veh/h | 49 | 274 | 57 | 35 | 98 | 2 | 13 | 119 | 17 | 4 | 370 | 26 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 2 | 8 | 0 | 2 | 0 | 16 | 2 | 7 | 25 | 1 | 0 |
| Mvmt Flow | 49 | 274 | 57 | 35 | 98 | 2 | 13 | 119 | 17 | 4 | 370 | 26 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

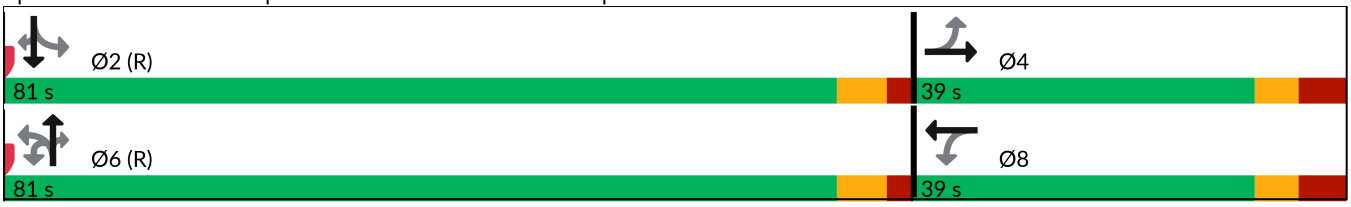
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 1 | 1 |
| HCM Control Delay, s/veh | 20.4 | 12 | 10.8 | 13.3 |
| HCM LOS | C | B | B | B |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 13% | 26% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 70% | 72% | 73% | 0% | 100% | 83% |
| Vol Right, % | 0% | 0% | 30% | 15% | 1% | 0% | 0% | 17% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 13 | 79 | 57 | 380 | 135 | 4 | 247 | 149 |
| LT Vol | 13 | 0 | 0 | 49 | 35 | 4 | 0 | 0 |
| Through Vol | 0 | 79 | 40 | 274 | 98 | 0 | 247 | 123 |
| RT Vol | 0 | 0 | 17 | 57 | 2 | 0 | 0 | 26 |
| Lane Flow Rate | 13 | 79 | 57 | 380 | 135 | 4 | 247 | 149 |
| Geometry Grp | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Degree of Util (X) | 0.028 | 0.153 | 0.108 | 0.66 | 0.257 | 0.008 | 0.446 | 0.264 |
| Departure Headway (Hd) | 7.723 | 6.962 | 6.834 | 6.253 | 6.865 | 7.441 | 6.51 | 6.367 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 460 | 511 | 520 | 574 | 520 | 479 | 550 | 561 |
| Service Time | 5.521 | 4.759 | 4.63 | 4.02 | 4.655 | 5.22 | 4.288 | 4.145 |
| HCM Lane V/C Ratio | 0.028 | 0.155 | 0.11 | 0.662 | 0.26 | 0.008 | 0.449 | 0.266 |
| HCM Control Delay, s/veh | 10.7 | 11 | 10.5 | 20.4 | 12 | 10.3 | 14.5 | 11.4 |
| HCM Lane LOS | B | B | B | C | B | B | B | B |
| HCM 95th-tile Q | 0.1 | 0.5 | 0.4 | 4.9 | 1 | 0 | 2.3 | 1.1 |

| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 369 | 46 | 8 | 745 | 91 |
| Future Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 369 | 46 | 8 | 745 | 91 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.5 | 13.5 | 13.5 | 13.5 | | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| v/c Ratio | 0.18 | 0.25 | 0.44 | 0.01 | | 0.31 | 0.14 | 0.05 | 0.01 | 0.28 | 0.09 |
| Control Delay (s/veh) | 50.7 | 1.8 | 63.8 | 0.0 | | 6.1 | 2.9 | 1.4 | 4.3 | 4.2 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 50.7 | 1.8 | 63.8 | 0.0 | | 6.1 | 2.9 | 1.4 | 4.3 | 4.2 | 1.1 |
| LOS | D | A | E | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 12.2 | | 59.5 | | | 3.6 | | | 3.9 | |
| Approach LOS | | B | | E | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.44 | |
| Intersection Signal Delay (s/veh): 6.0 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

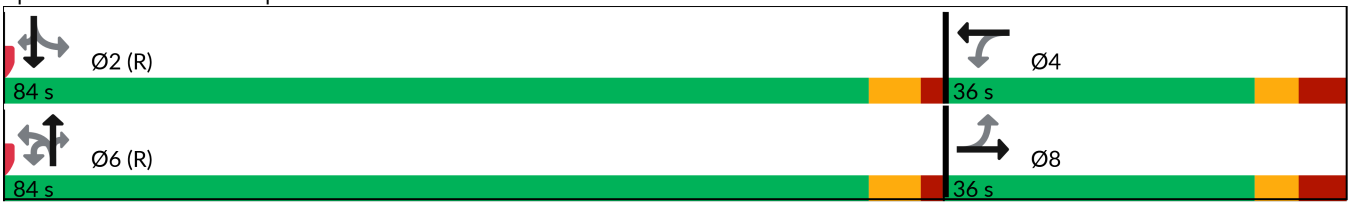
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 557 | 32 | 4 | 858 | 3 |
| Future Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 557 | 32 | 4 | 858 | 3 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.2 | 13.2 | 13.2 | 13.2 | | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.03 | 0.10 | 0.23 | 0.01 | | 0.17 | 0.21 | 0.03 | 0.01 | 0.31 | 0.00 |
| Control Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.4 | 1.5 | 0.1 | 2.8 | 2.2 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.4 | 1.5 | 0.1 | 2.8 | 2.2 | 0.0 |
| LOS | D | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 3.9 | | 47.8 | | | 1.5 | | | 2.2 | |
| Approach LOS | | A | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.31 | |
| Intersection Signal Delay (s/veh): 2.6 | Intersection LOS: A |
| Intersection Capacity Utilization 61.6% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 3 | 0 | 395 | 873 | 16 |
| Future Volume (Veh/h) | 0 | 3 | 0 | 395 | 873 | 16 |
| 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) | 0 | 3 | 0 | 395 | 873 | 16 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | 170 | | |
| pX, platoon unblocked | 1.00 | | | | | |
| vC, conflicting volume | 1079 | 445 | 889 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1074 | 445 | 889 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 214 | 567 | 758 | | | |

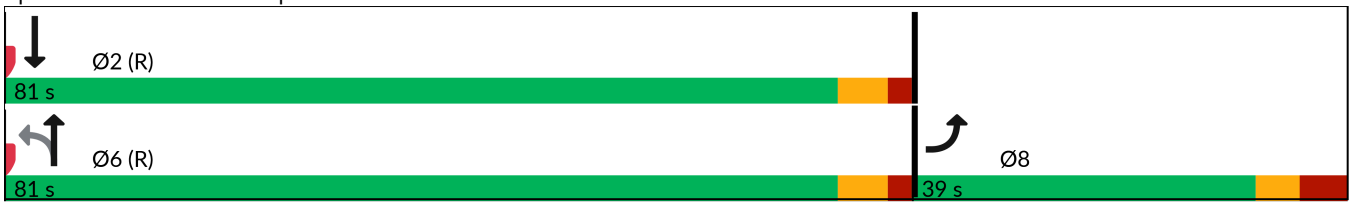
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 3 | 198 | 198 | 582 | 307 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 3 | 0 | 0 | 0 | 16 |
| cSH | 567 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.12 | 0.12 | 0.34 | 0.18 |
| Queue Length 95th (m) | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 11.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 11.4 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 37.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | NBL | NBT | SBT |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 17 | 31 | 378 | 870 |
| Future Volume (vph) | 17 | 31 | 378 | 870 |
| Turn Type | Prot | Perm | NA | NA |
| Protected Phases | 8 | | 6 | 2 |
| Permitted Phases | | 6 | | |
| Detector Phase | 8 | 6 | 6 | 2 |
| Switch Phase | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 39.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 4.0 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.0 | 109.3 | 109.3 | 109.3 |
| Actuated g/C Ratio | 0.10 | 0.91 | 0.91 | 0.91 |
| v/c Ratio | 0.15 | 0.06 | 0.13 | 0.30 |
| Control Delay (s/veh) | 46.9 | 5.9 | 4.5 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 46.9 | 5.9 | 4.5 | 2.3 |
| LOS | D | A | A | A |
| Approach Delay (s/veh) | 46.9 | | 4.6 | 2.3 |
| Approach LOS | D | | A | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.30 | |
| Intersection Signal Delay (s/veh): 3.7 | Intersection LOS: A |
| Intersection Capacity Utilization 48.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 6 | 0 | 409 | 840 | 33 |
| Future Volume (Veh/h) | 0 | 6 | 0 | 409 | 840 | 33 |
| 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) | 0 | 6 | 0 | 409 | 840 | 33 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | TWLTL | |
| Median storage veh) | | | | | 2 | |
| Upstream signal (m) | | | | | 175 | |
| pX, platoon unblocked | 0.95 | 0.95 | 0.95 | | | |
| vC, conflicting volume | 1061 | 437 | 873 | | | |
| vC1, stage 1 conf vol | 857 | | | | | |
| vC2, stage 2 conf vol | 205 | | | | | |
| vCu, unblocked vol | 950 | 290 | 751 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 392 | 674 | 808 | | | |

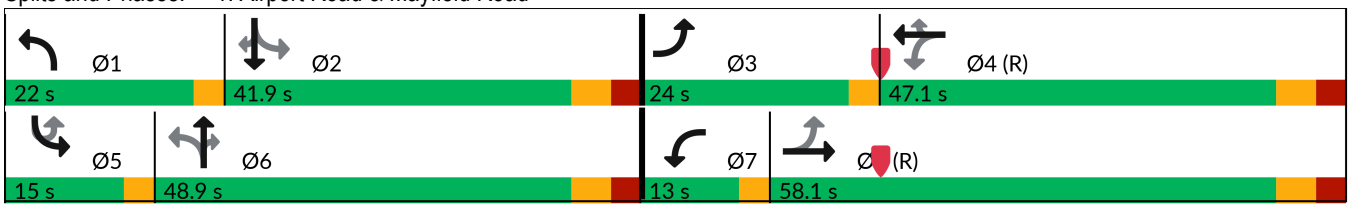
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 6 | 205 | 205 | 560 | 313 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 6 | 0 | 0 | 0 | 33 |
| cSH | 674 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.12 | 0.12 | 0.33 | 0.18 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 10.4 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 34.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 313 | 664 | 104 | 798 | 70 | 342 | 707 | 96 | 1 | 137 | 459 | 324 |
| Future Volume (vph) | 313 | 664 | 104 | 798 | 70 | 342 | 707 | 96 | 1 | 137 | 459 | 324 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | custom | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 4 | 6 | | 6 | 5 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 24.0 | 58.1 | 13.0 | 47.1 | 47.1 | 22.0 | 48.9 | 48.9 | 15.0 | 15.0 | 41.9 | 41.9 |
| Total Split (%) | 17.8% | 43.0% | 9.6% | 34.9% | 34.9% | 16.3% | 36.2% | 36.2% | 11.1% | 11.1% | 31.0% | 31.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 75.2 | 59.5 | 60.9 | 48.2 | 48.2 | 53.8 | 35.7 | 35.7 | | 42.9 | 27.9 | 27.9 |
| Actuated g/C Ratio | 0.56 | 0.44 | 0.45 | 0.36 | 0.36 | 0.40 | 0.26 | 0.26 | | 0.32 | 0.21 | 0.21 |
| v/c Ratio | 0.79 | 0.44 | 0.37 | 0.46 | 0.16 | 0.94 | 0.83 | 0.26 | | 0.67 | 0.68 | 0.60 |
| Control Delay (s/veh) | 34.0 | 25.8 | 20.7 | 35.9 | 0.7 | 66.6 | 56.0 | 6.8 | | 42.7 | 54.0 | 10.0 |
| 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 (s/veh) | 34.0 | 25.8 | 20.7 | 35.9 | 0.7 | 66.6 | 56.0 | 6.8 | | 42.7 | 54.0 | 10.0 |
| LOS | C | C | C | D | A | E | E | A | | D | D | A |
| Approach Delay (s/veh) | | 27.9 | | 31.8 | | | 55.1 | | | | 36.8 | |
| Approach LOS | | C | | C | | | E | | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 0 (0%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.94 | |
| Intersection Signal Delay (s/veh): 38.0 | Intersection LOS: D |
| Intersection Capacity Utilization 103.2% | ICU Level of Service G |
| Analysis Period (min) 15 | |

Splits and Phases: 1: Airport Road & Mayfield Road



| Intersection | |
|---|---|
| Intersection Delay, s/veh | 25.7 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 44 | 217 | 17 | 25 | 382 | 3 | 40 | 354 | 65 | 1 | 185 | 82 |
| Future Vol, veh/h | 44 | 217 | 17 | 25 | 382 | 3 | 40 | 354 | 65 | 1 | 185 | 82 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 100 | 3 | 0 |
| Mvmt Flow | 44 | 217 | 17 | 25 | 382 | 3 | 40 | 354 | 65 | 1 | 185 | 82 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |

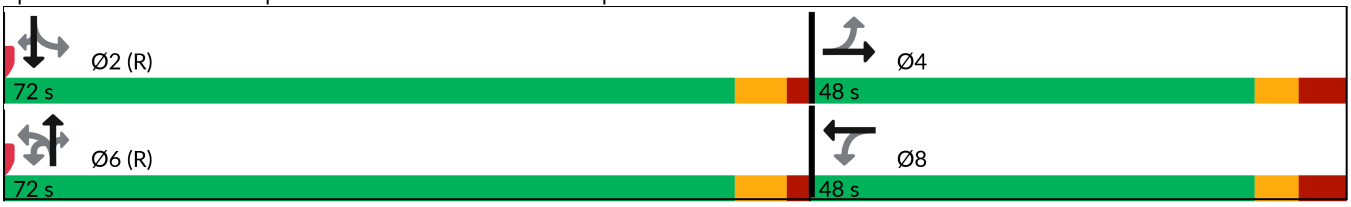
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 3 | 3 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 3 | 3 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 3 | 3 | 1 | 1 |
| HCM Control Delay, s/veh | 23.1 | 44.4 | 17.2 | 14.6 |
| HCM LOS | C | E | C | B |

| Lane | NBLn1 | NBLn2 | NBLn3 | EBLn1 | WBLn1 | SBLn1 | SBLn2 | SBLn3 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 0% | 16% | 6% | 100% | 0% | 0% |
| Vol Thru, % | 0% | 100% | 64% | 78% | 93% | 0% | 100% | 43% |
| Vol Right, % | 0% | 0% | 36% | 6% | 1% | 0% | 0% | 57% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 40 | 236 | 183 | 278 | 410 | 1 | 123 | 144 |
| LT Vol | 40 | 0 | 0 | 44 | 25 | 1 | 0 | 0 |
| Through Vol | 0 | 236 | 118 | 217 | 382 | 0 | 123 | 62 |
| RT Vol | 0 | 0 | 65 | 17 | 3 | 0 | 0 | 82 |
| Lane Flow Rate | 40 | 236 | 183 | 278 | 410 | 1 | 123 | 144 |
| Geometry Grp | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Degree of Util (X) | 0.095 | 0.525 | 0.395 | 0.621 | 0.877 | 0.003 | 0.291 | 0.32 |
| Departure Headway (Hd) | 8.528 | 8.005 | 7.78 | 8.037 | 7.702 | 10.739 | 8.48 | 8.007 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 420 | 451 | 461 | 450 | 476 | 333 | 423 | 448 |
| Service Time | 6.286 | 5.763 | 5.538 | 5.789 | 5.402 | 8.503 | 6.242 | 5.768 |
| HCM Lane V/C Ratio | 0.095 | 0.523 | 0.397 | 0.618 | 0.861 | 0.003 | 0.291 | 0.321 |
| HCM Control Delay, s/veh | 12.2 | 19.3 | 15.6 | 23.1 | 44.4 | 13.5 | 14.7 | 14.5 |
| HCM Lane LOS | B | C | C | C | E | B | B | B |
| HCM 95th-tile Q | 0.3 | 3 | 1.9 | 4.1 | 9.3 | 0 | 1.2 | 1.4 |

| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 898 | 27 | 3 | 568 | 29 |
| Future Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 898 | 27 | 3 | 568 | 29 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 48.0 | 48.0 | 48.0 | 48.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 18.2 | 18.2 | 18.2 | 18.2 | | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.15 | 0.15 | 0.15 | 0.15 | | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| v/c Ratio | 0.68 | 0.21 | 0.32 | 0.02 | | 0.19 | 0.36 | 0.04 | 0.01 | 0.24 | 0.05 |
| Control Delay (s/veh) | 64.2 | 1.1 | 49.4 | 0.1 | | 7.6 | 6.7 | 0.9 | 6.7 | 6.3 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 64.2 | 1.1 | 49.4 | 0.1 | | 7.6 | 6.7 | 0.9 | 6.7 | 6.3 | 1.0 |
| LOS | E | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 39.9 | | 42.8 | | | 6.6 | | | 6.0 | |
| Approach LOS | | D | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay (s/veh): 11.5 | Intersection LOS: B |
| Intersection Capacity Utilization 67.1% | ICU Level of Service C |
| Analysis Period (min) 15 | |

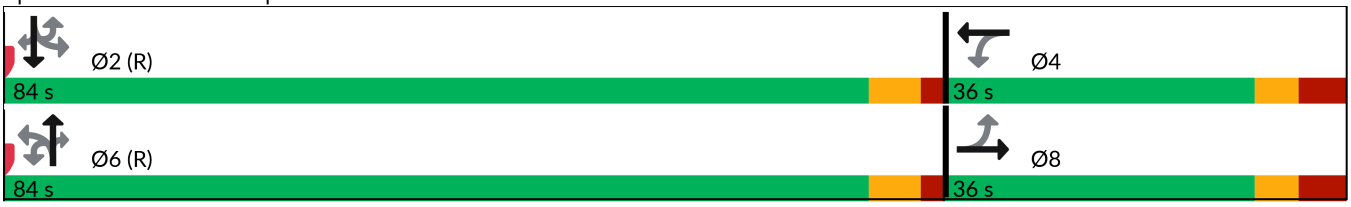
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1032 | 49 | 8 | 20 | 690 | 9 |
| Future Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1032 | 49 | 8 | 20 | 690 | 9 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 14.3 | 14.3 | 14.3 | 14.3 | | 96.2 | 96.2 | 96.2 | | 96.2 | 96.2 | 96.2 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | | 0.80 | 0.80 | 0.80 | | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.04 | 0.15 | 0.54 | 0.03 | | 0.11 | 0.39 | 0.07 | | 0.12 | 0.26 | 0.01 |
| Control Delay (s/veh) | 45.0 | 0.8 | 63.2 | 0.3 | | 5.3 | 5.3 | 1.6 | | 3.1 | 2.0 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 45.0 | 0.8 | 63.2 | 0.3 | | 5.3 | 5.3 | 1.6 | | 3.1 | 2.0 | 0.0 |
| LOS | D | A | E | A | | A | A | A | | A | A | A |
| Approach Delay (s/veh) | | 4.7 | | 57.4 | | | 5.1 | | | | 2.0 | |
| Approach LOS | | A | | E | | | A | | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.54 | |
| Intersection Signal Delay (s/veh): 6.3 | Intersection LOS: A |
| Intersection Capacity Utilization 55.8% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 10 | 0 | 1085 | 585 | 5 |
| Future Volume (Veh/h) | 0 | 10 | 0 | 1085 | 585 | 5 |
| 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) | 0 | 10 | 0 | 1085 | 585 | 5 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | 170 | | |
| pX, platoon unblocked | 0.91 | | | | | |
| vC, conflicting volume | 1130 | 295 | 590 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 949 | 295 | 590 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 236 | 707 | 982 | | | |

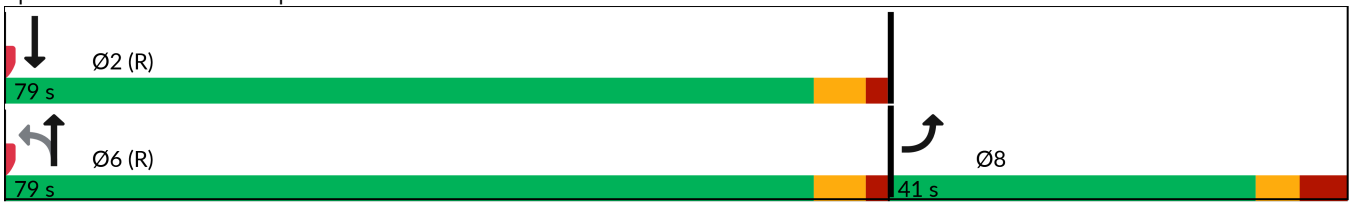
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 10 | 543 | 543 | 390 | 200 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 10 | 0 | 0 | 0 | 5 |
| cSH | 707 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.32 | 0.32 | 0.23 | 0.12 |
| Queue Length 95th (m) | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 10.2 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 36.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | NBL | NBT | SBT |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 51 | 13 | 1034 | 586 |
| Future Volume (vph) | 51 | 13 | 1034 | 586 |
| Turn Type | Prot | Perm | NA | NA |
| Protected Phases | 8 | | 6 | 2 |
| Permitted Phases | | 6 | | |
| Detector Phase | 8 | 6 | 6 | 2 |
| Switch Phase | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 41.0 | 79.0 | 79.0 | 79.0 |
| Total Split (%) | 34.2% | 65.8% | 65.8% | 65.8% |
| Yellow Time (s) | 4.0 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.3 | 98.2 | 98.2 | 98.2 |
| Actuated g/C Ratio | 0.10 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.35 | 0.03 | 0.36 | 0.23 |
| Control Delay (s/veh) | 54.0 | 7.1 | 8.2 | 3.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 54.0 | 7.1 | 8.2 | 3.6 |
| LOS | D | A | A | A |
| Approach Delay (s/veh) | 54.0 | | 8.2 | 3.6 |
| Approach LOS | D | | A | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.36 | |
| Intersection Signal Delay (s/veh): 8.1 | Intersection LOS: A |
| Intersection Capacity Utilization 50.9% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 20 | 0 | 1047 | 581 | 10 |
| Future Volume (Veh/h) | 0 | 20 | 0 | 1047 | 581 | 10 |
| 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) | 0 | 20 | 0 | 1047 | 581 | 10 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | TWLTL | |
| Median storage veh) | | | | | 2 | |
| Upstream signal (m) | | | | | 175 | |
| pX, platoon unblocked | 0.96 | 0.96 | 0.96 | | | |
| vC, conflicting volume | 1110 | 296 | 591 | | | |
| vC1, stage 1 conf vol | 586 | | | | | |
| vC2, stage 2 conf vol | 524 | | | | | |
| vCu, unblocked vol | 1040 | 196 | 502 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 97 | 100 | | | |
| cM capacity (veh/h) | 434 | 790 | 1021 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 20 | 524 | 524 | 387 | 204 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 20 | 0 | 0 | 0 | 10 |
| cSH | 790 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.03 | 0.31 | 0.31 | 0.23 | 0.12 |
| Queue Length 95th (m) | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 9.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | | |
| Approach Delay (s/veh) | 9.7 | 0.0 | | 0.0 | |
| Approach LOS | A | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 32.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 229 | 819 | 1 | 81 | 564 | 72 | 257 | 399 | 86 | 98 | 604 | 179 |
| Future Volume (vph) | 229 | 819 | 1 | 81 | 564 | 72 | 257 | 399 | 86 | 98 | 604 | 179 |
| Turn Type | pm+pt | NA | pm+pt | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 13.0 | 52.1 | 10.0 | 10.0 | 49.1 | 49.1 | 16.0 | 47.9 | 47.9 | 10.0 | 41.9 | 41.9 |
| Total Split (%) | 10.8% | 43.4% | 8.3% | 8.3% | 40.9% | 40.9% | 13.3% | 39.9% | 39.9% | 8.3% | 34.9% | 34.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | None | C-Max | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 65.8 | 53.0 | | 58.6 | 47.1 | 47.1 | 48.2 | 34.5 | 34.5 | 39.1 | 28.3 | 28.3 |
| Actuated g/C Ratio | 0.55 | 0.44 | | 0.49 | 0.39 | 0.39 | 0.40 | 0.29 | 0.29 | 0.33 | 0.24 | 0.24 |
| v/c Ratio | 0.53 | 0.63 | | 0.48 | 0.31 | 0.14 | 0.89 | 0.46 | 0.23 | 0.33 | 0.80 | 0.40 |
| Control Delay (s/veh) | 20.9 | 25.7 | | 24.8 | 26.8 | 1.6 | 57.2 | 36.2 | 6.6 | 37.7 | 61.6 | 20.9 |
| 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 (s/veh) | 20.9 | 25.7 | | 24.8 | 26.8 | 1.6 | 57.2 | 36.2 | 6.6 | 37.7 | 61.6 | 20.9 |
| LOS | C | C | | C | C | A | E | D | A | D | E | C |
| Approach Delay (s/veh) | | 25.0 | | | 24.1 | | | 40.0 | | | 50.7 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.89 | |
| Intersection Signal Delay (s/veh): 33.5 | Intersection LOS: C |
| Intersection Capacity Utilization 97.0% | ICU Level of Service F |
| Analysis Period (min) 15 | |

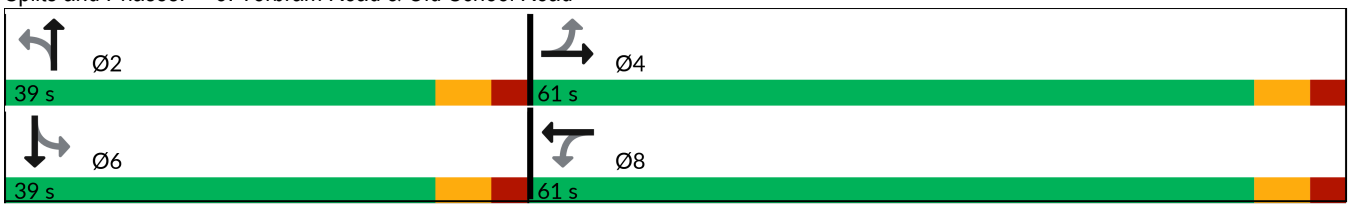
Splits and Phases: 1: Airport Road & Mayfield Road



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 49 | 292 | 35 | 105 | 13 | 127 | 4 | 404 |
| Future Volume (vph) | 49 | 292 | 35 | 105 | 13 | 127 | 4 | 404 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 |
| Total Split (s) | 61.0 | 61.0 | 61.0 | 61.0 | 39.0 | 39.0 | 39.0 | 39.0 |
| Total Split (%) | 61.0% | 61.0% | 61.0% | 61.0% | 39.0% | 39.0% | 39.0% | 39.0% |
| Yellow Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| All-Red Time (s) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.9 | | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | Max | Max | Max | Max |
| Act Effct Green (s) | | 19.5 | | 19.5 | 32.3 | 32.3 | 32.3 | 32.3 |
| Actuated g/C Ratio | | 0.30 | | 0.30 | 0.49 | 0.49 | 0.49 | 0.49 |
| v/c Ratio | | 0.77 | | 0.31 | 0.03 | 0.08 | 0.01 | 0.24 |
| Control Delay (s/veh) | | 30.5 | | 19.1 | 11.1 | 9.3 | 10.8 | 10.8 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | | 30.5 | | 19.1 | 11.1 | 9.3 | 10.8 | 10.8 |
| LOS | | C | | B | B | A | B | B |
| Approach Delay (s/veh) | | 30.5 | | 19.1 | | 9.5 | | 10.8 |
| Approach LOS | | C | | B | | A | | B |

| Intersection Summary | |
|---|---|
| Cycle Length: 100 | |
| Actuated Cycle Length: 65.6 | |
| Natural Cycle: 50 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay (s/veh): 18.6 | Intersection LOS: B |
| Intersection Capacity Utilization 47.9% | ICU Level of Service A |
| Analysis Period (min) 15 | |

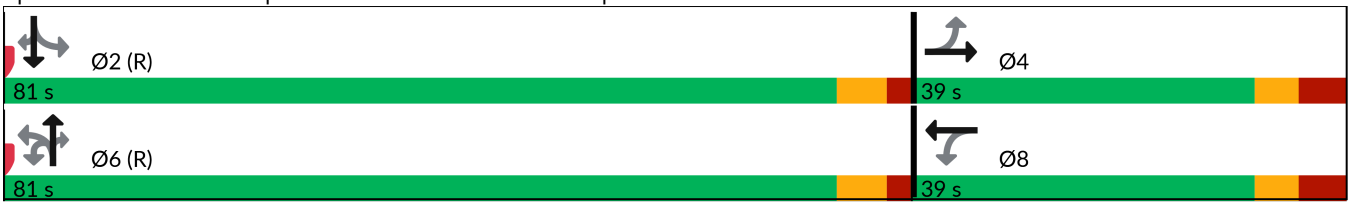
Splits and Phases: 3: Torbram Road & Old School Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 346 | 46 | 8 | 751 | 91 |
| Future Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 346 | 46 | 8 | 751 | 91 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.5 | 13.5 | 13.5 | 13.5 | | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| v/c Ratio | 0.18 | 0.25 | 0.44 | 0.00 | | 0.31 | 0.14 | 0.05 | 0.01 | 0.28 | 0.09 |
| Control Delay (s/veh) | 50.7 | 1.8 | 63.8 | 0.0 | | 6.2 | 2.9 | 1.4 | 4.0 | 4.3 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 50.7 | 1.8 | 63.8 | 0.0 | | 6.2 | 2.9 | 1.4 | 4.0 | 4.3 | 1.1 |
| LOS | D | A | E | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 12.2 | | 59.5 | | | 3.5 | | | 3.9 | |
| Approach LOS | | B | | E | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.44 | |
| Intersection Signal Delay (s/veh): 6.0 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

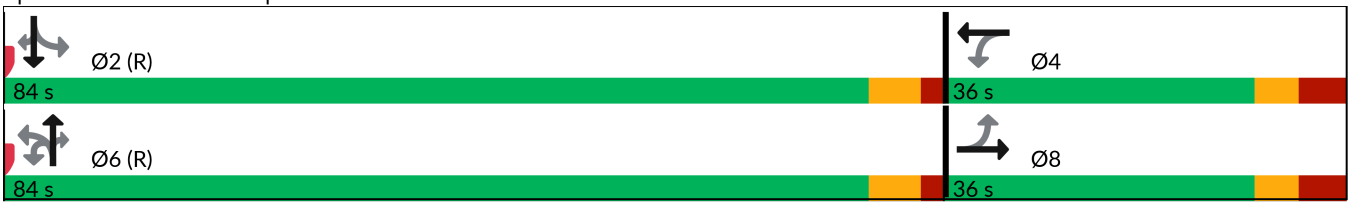
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 535 | 32 | 4 | 865 | 3 |
| Future Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 535 | 32 | 4 | 865 | 3 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.2 | 13.2 | 13.2 | 13.2 | | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.03 | 0.10 | 0.23 | 0.01 | | 0.17 | 0.21 | 0.03 | 0.01 | 0.32 | 0.00 |
| Control Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.3 | 1.4 | 0.1 | 2.8 | 2.2 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.3 | 1.4 | 0.1 | 2.8 | 2.2 | 0.0 |
| LOS | D | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 3.9 | | 47.8 | | | 1.4 | | | 2.2 | |
| Approach LOS | | A | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.32 | |
| Intersection Signal Delay (s/veh): 2.6 | Intersection LOS: A |
| Intersection Capacity Utilization 61.7% | ICU Level of Service B |
| Analysis Period (min) 15 | |

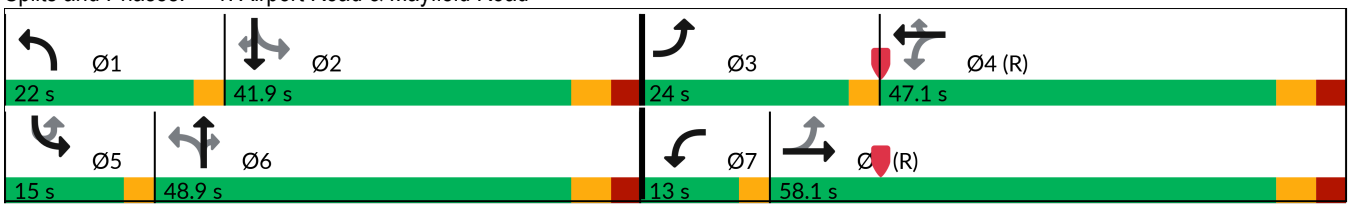
Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 306 | 678 | 104 | 816 | 68 | 342 | 719 | 96 | 1 | 135 | 449 | 312 |
| Future Volume (vph) | 306 | 678 | 104 | 816 | 68 | 342 | 719 | 96 | 1 | 135 | 449 | 312 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | custom | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 4 | 6 | | 6 | 5 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 24.0 | 58.1 | 13.0 | 47.1 | 47.1 | 22.0 | 48.9 | 48.9 | 15.0 | 15.0 | 41.9 | 41.9 |
| Total Split (%) | 17.8% | 43.0% | 9.6% | 34.9% | 34.9% | 16.3% | 36.2% | 36.2% | 11.1% | 11.1% | 31.0% | 31.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 75.0 | 59.3 | 61.3 | 48.6 | 48.6 | 54.0 | 36.0 | 36.0 | | 43.1 | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.56 | 0.44 | 0.45 | 0.36 | 0.36 | 0.40 | 0.27 | 0.27 | | 0.32 | 0.21 | 0.21 |
| v/c Ratio | 0.79 | 0.45 | 0.37 | 0.46 | 0.15 | 0.93 | 0.84 | 0.25 | | 0.66 | 0.66 | 0.58 |
| Control Delay (s/veh) | 33.8 | 26.1 | 20.8 | 35.8 | 0.7 | 63.3 | 56.4 | 6.7 | | 42.1 | 53.4 | 8.9 |
| 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 (s/veh) | 33.8 | 26.1 | 20.8 | 35.8 | 0.7 | 63.3 | 56.4 | 6.7 | | 42.1 | 53.4 | 8.9 |
| LOS | C | C | C | D | A | E | E | A | | D | D | A |
| Approach Delay (s/veh) | | 28.1 | | 31.8 | | | 54.3 | | | | 36.2 | |
| Approach LOS | | C | | C | | | D | | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 0 (0%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.93 | |
| Intersection Signal Delay (s/veh): 37.8 | Intersection LOS: D |
| Intersection Capacity Utilization 102.6% | ICU Level of Service G |
| Analysis Period (min) 15 | |

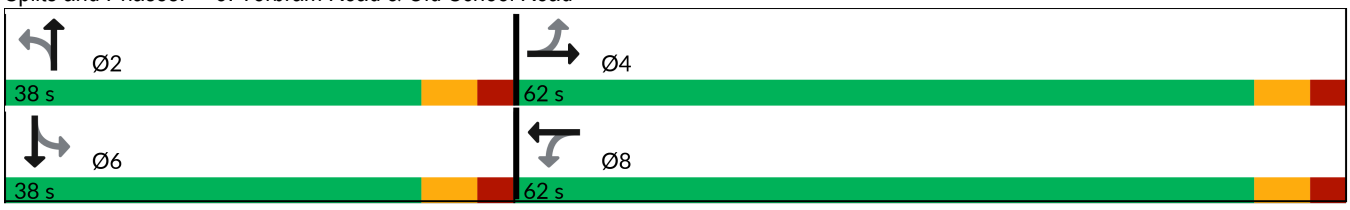
Splits and Phases: 1: Airport Road & Mayfield Road



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 44 | 234 | 25 | 410 | 40 | 385 | 1 | 197 |
| Future Volume (vph) | 44 | 234 | 25 | 410 | 40 | 385 | 1 | 197 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 |
| Total Split (s) | 62.0 | 62.0 | 62.0 | 62.0 | 38.0 | 38.0 | 38.0 | 38.0 |
| Total Split (%) | 62.0% | 62.0% | 62.0% | 62.0% | 38.0% | 38.0% | 38.0% | 38.0% |
| Yellow Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| All-Red Time (s) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.9 | | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | Max | Max | Max | Max |
| Act Effct Green (s) | | 20.5 | | 20.5 | 31.3 | 31.3 | 31.3 | 31.3 |
| Actuated g/C Ratio | | 0.31 | | 0.31 | 0.48 | 0.48 | 0.48 | 0.48 |
| v/c Ratio | | 0.60 | | 0.77 | 0.08 | 0.26 | 0.00 | 0.17 |
| Control Delay (s/veh) | | 24.1 | | 30.2 | 11.8 | 11.2 | 12.0 | 8.6 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | | 24.1 | | 30.2 | 11.8 | 11.2 | 12.0 | 8.6 |
| LOS | | C | | C | B | B | B | A |
| Approach Delay (s/veh) | | 24.1 | | 30.2 | | 11.2 | | 8.6 |
| Approach LOS | | C | | C | | B | | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 100 | |
| Actuated Cycle Length: 65.6 | |
| Natural Cycle: 50 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay (s/veh): 18.8 | Intersection LOS: B |
| Intersection Capacity Utilization 68.5% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 3: Torbram Road & Old School Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 901 | 27 | 3 | 546 | 29 |
| Future Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 901 | 27 | 3 | 546 | 29 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 48.0 | 48.0 | 48.0 | 48.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 18.2 | 18.2 | 18.2 | 18.2 | | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.15 | 0.15 | 0.15 | 0.15 | | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| v/c Ratio | 0.68 | 0.20 | 0.32 | 0.02 | | 0.19 | 0.36 | 0.04 | 0.01 | 0.23 | 0.05 |
| Control Delay (s/veh) | 64.2 | 1.0 | 49.4 | 0.1 | | 7.5 | 6.7 | 0.9 | 6.3 | 6.2 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 64.2 | 1.0 | 49.4 | 0.1 | | 7.5 | 6.7 | 0.9 | 6.3 | 6.2 | 1.0 |
| LOS | E | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 39.9 | | 42.8 | | | 6.6 | | | 6.0 | |
| Approach LOS | | D | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay (s/veh): 11.5 | Intersection LOS: B |
| Intersection Capacity Utilization 67.2% | ICU Level of Service C |
| Analysis Period (min) 15 | |

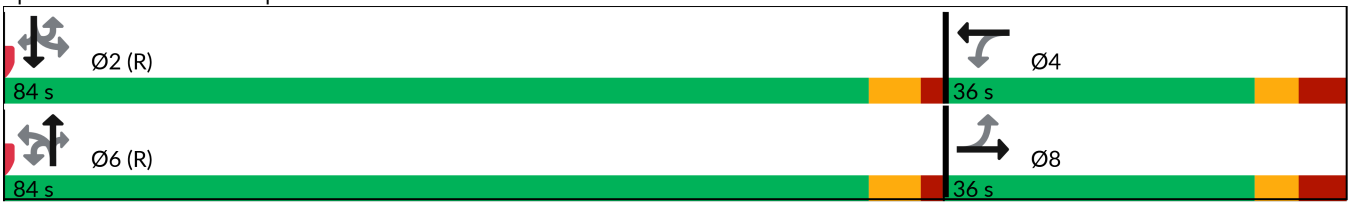
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1037 | 49 | 8 | 20 | 669 | 9 |
| Future Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1037 | 49 | 8 | 20 | 669 | 9 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 14.3 | 14.3 | 14.3 | 14.3 | | 96.2 | 96.2 | 96.2 | | 96.2 | 96.2 | 96.2 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | | 0.80 | 0.80 | 0.80 | | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.04 | 0.14 | 0.54 | 0.03 | | 0.10 | 0.39 | 0.07 | | 0.12 | 0.26 | 0.01 |
| Control Delay (s/veh) | 45.0 | 0.7 | 63.2 | 0.3 | | 5.2 | 5.3 | 1.6 | | 3.1 | 2.0 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 45.0 | 0.7 | 63.2 | 0.3 | | 5.2 | 5.3 | 1.6 | | 3.1 | 2.0 | 0.0 |
| LOS | D | A | E | A | | A | A | A | | A | A | A |
| Approach Delay (s/veh) | | 4.7 | | 57.4 | | | 5.1 | | | | 2.0 | |
| Approach LOS | | A | | E | | | A | | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.54 | |
| Intersection Signal Delay (s/veh): 6.3 | Intersection LOS: A |
| Intersection Capacity Utilization 55.8% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane



| Lane Group | EBL | EBT | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 244 | 819 | 1 | 81 | 564 | 77 | 257 | 409 | 86 | 98 | 609 | 183 |
| Future Volume (vph) | 244 | 819 | 1 | 81 | 564 | 77 | 257 | 409 | 86 | 98 | 609 | 183 |
| Turn Type | pm+pt | NA | pm+pt | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 7 | 4 | | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | 4 | | 4 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 13.0 | 52.1 | 10.0 | 10.0 | 49.1 | 49.1 | 16.0 | 47.9 | 47.9 | 10.0 | 41.9 | 41.9 |
| Total Split (%) | 10.8% | 43.4% | 8.3% | 8.3% | 40.9% | 40.9% | 13.3% | 39.9% | 39.9% | 8.3% | 34.9% | 34.9% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | None | C-Max | C-Max | None | None | None | None | None | None |
| Act Effct Green (s) | 65.6 | 52.8 | | 58.2 | 46.6 | 46.6 | 48.4 | 34.6 | 34.6 | 39.2 | 28.5 | 28.5 |
| Actuated g/C Ratio | 0.55 | 0.44 | | 0.49 | 0.39 | 0.39 | 0.40 | 0.29 | 0.29 | 0.33 | 0.24 | 0.24 |
| v/c Ratio | 0.56 | 0.63 | | 0.49 | 0.32 | 0.15 | 0.89 | 0.47 | 0.23 | 0.34 | 0.80 | 0.41 |
| Control Delay (s/veh) | 22.1 | 25.9 | | 25.0 | 27.1 | 2.1 | 57.3 | 36.3 | 6.6 | 35.7 | 59.9 | 19.0 |
| 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 (s/veh) | 22.1 | 25.9 | | 25.0 | 27.1 | 2.1 | 57.3 | 36.3 | 6.6 | 35.7 | 59.9 | 19.0 |
| LOS | C | C | | C | C | A | E | D | A | D | E | B |
| Approach Delay (s/veh) | | 25.3 | | | 24.2 | | | 40.1 | | | 48.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 30 (25%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.89 | |
| Intersection Signal Delay (s/veh): 33.2 | Intersection LOS: C |
| Intersection Capacity Utilization 98.0% | ICU Level of Service F |
| Analysis Period (min) 15 | |

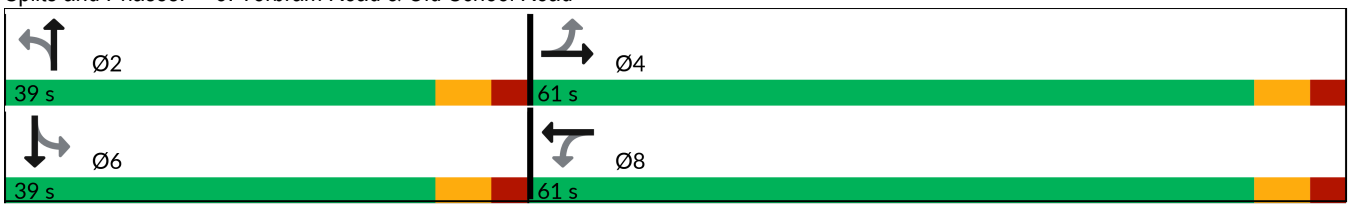
Splits and Phases: 1: Airport Road & Mayfield Road



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 49 | 301 | 35 | 108 | 13 | 127 | 4 | 404 |
| Future Volume (vph) | 49 | 301 | 35 | 108 | 13 | 127 | 4 | 404 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 |
| Total Split (s) | 61.0 | 61.0 | 61.0 | 61.0 | 39.0 | 39.0 | 39.0 | 39.0 |
| Total Split (%) | 61.0% | 61.0% | 61.0% | 61.0% | 39.0% | 39.0% | 39.0% | 39.0% |
| Yellow Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| All-Red Time (s) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.9 | | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | Max | Max | Max | Max |
| Act Effct Green (s) | | 19.9 | | 19.9 | 32.3 | 32.3 | 32.3 | 32.3 |
| Actuated g/C Ratio | | 0.30 | | 0.30 | 0.49 | 0.49 | 0.49 | 0.49 |
| v/c Ratio | | 0.77 | | 0.31 | 0.03 | 0.08 | 0.01 | 0.25 |
| Control Delay (s/veh) | | 30.7 | | 19.0 | 11.3 | 9.5 | 11.0 | 11.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | | 30.7 | | 19.0 | 11.3 | 9.5 | 11.0 | 11.0 |
| LOS | | C | | B | B | A | B | B |
| Approach Delay (s/veh) | | 30.7 | | 19.0 | | 9.6 | | 11.0 |
| Approach LOS | | C | | B | | A | | B |

| Intersection Summary | |
|---|---|
| Cycle Length: 100 | |
| Actuated Cycle Length: 66.1 | |
| Natural Cycle: 50 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.77 | |
| Intersection Signal Delay (s/veh): 18.9 | Intersection LOS: B |
| Intersection Capacity Utilization 48.5% | ICU Level of Service A |
| Analysis Period (min) 15 | |

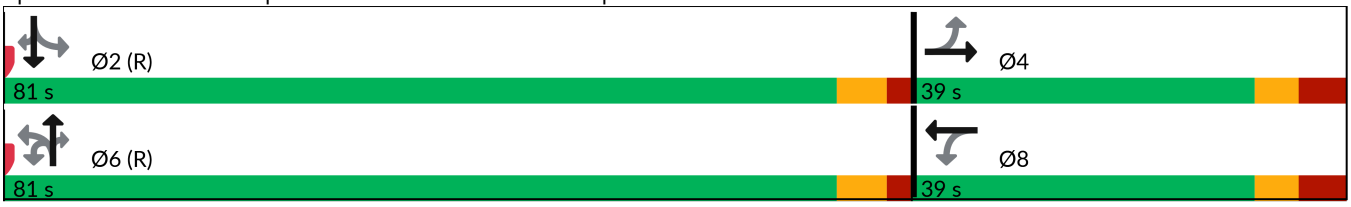
Splits and Phases: 3: Torbram Road & Old School Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 377 | 46 | 8 | 761 | 91 |
| Future Volume (vph) | 23 | 0 | 42 | 0 | 1 | 127 | 377 | 46 | 8 | 761 | 91 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.5 | 13.5 | 13.5 | 13.5 | | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 | 97.0 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| v/c Ratio | 0.18 | 0.26 | 0.44 | 0.01 | | 0.31 | 0.15 | 0.05 | 0.01 | 0.28 | 0.09 |
| Control Delay (s/veh) | 50.7 | 1.9 | 63.8 | 0.0 | | 6.3 | 3.0 | 1.4 | 4.3 | 4.3 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 50.7 | 1.9 | 63.8 | 0.0 | | 6.3 | 3.0 | 1.4 | 4.3 | 4.3 | 1.1 |
| LOS | D | A | E | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 12.3 | | 59.5 | | | 3.6 | | | 3.9 | |
| Approach LOS | | B | | E | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.44 | |
| Intersection Signal Delay (s/veh): 6.0 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

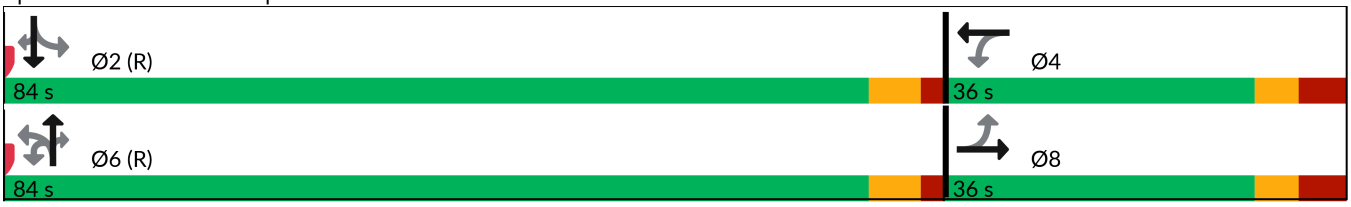
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 566 | 32 | 4 | 875 | 3 |
| Future Volume (vph) | 2 | 0 | 21 | 0 | 1 | 70 | 566 | 32 | 4 | 875 | 3 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 13.2 | 13.2 | 13.2 | 13.2 | | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.11 | | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.03 | 0.11 | 0.23 | 0.01 | | 0.17 | 0.22 | 0.03 | 0.01 | 0.32 | 0.00 |
| Control Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.5 | 1.5 | 0.1 | 2.5 | 2.2 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 47.5 | 0.8 | 54.7 | 0.0 | | 2.5 | 1.5 | 0.1 | 2.5 | 2.2 | 0.0 |
| LOS | D | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 3.9 | | 47.8 | | | 1.5 | | | 2.2 | |
| Approach LOS | | A | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.32 | |
| Intersection Signal Delay (s/veh): 2.6 | Intersection LOS: A |
| Intersection Capacity Utilization 62.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 3 | 0 | 403 | 889 | 16 |
| Future Volume (Veh/h) | 0 | 3 | 0 | 403 | 889 | 16 |
| 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) | 0 | 3 | 0 | 403 | 889 | 16 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | 170 | | |
| pX, platoon unblocked | 1.00 | | | | | |
| vC, conflicting volume | 1099 | 453 | 905 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1092 | 453 | 905 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 208 | 560 | 747 | | | |

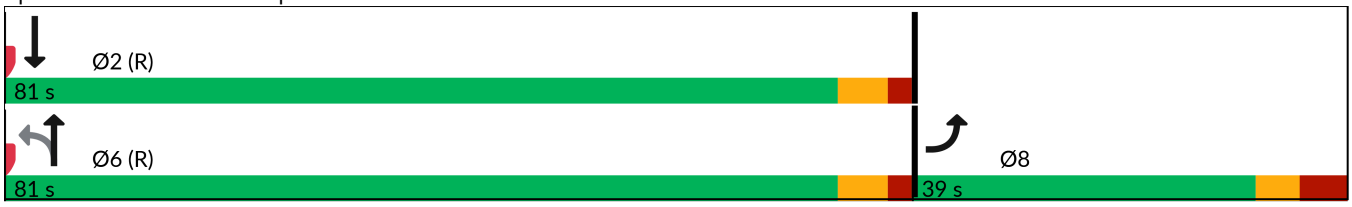
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 3 | 202 | 202 | 593 | 312 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 3 | 0 | 0 | 0 | 16 |
| cSH | 560 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.12 | 0.12 | 0.35 | 0.18 |
| Queue Length 95th (m) | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 11.5 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 37.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | NBL | NBT | SBT |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 17 | 31 | 386 | 886 |
| Future Volume (vph) | 17 | 31 | 386 | 886 |
| Turn Type | Prot | Perm | NA | NA |
| Protected Phases | 8 | | 6 | 2 |
| Permitted Phases | | 6 | | |
| Detector Phase | 8 | 6 | 6 | 2 |
| Switch Phase | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 39.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 4.0 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.0 | 109.3 | 109.3 | 109.3 |
| Actuated g/C Ratio | 0.10 | 0.91 | 0.91 | 0.91 |
| v/c Ratio | 0.15 | 0.06 | 0.14 | 0.31 |
| Control Delay (s/veh) | 46.9 | 6.0 | 4.5 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 46.9 | 6.0 | 4.5 | 2.3 |
| LOS | D | A | A | A |
| Approach Delay (s/veh) | 46.9 | | 4.6 | 2.3 |
| Approach LOS | D | | A | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.31 | |
| Intersection Signal Delay (s/veh): 3.7 | Intersection LOS: A |
| Intersection Capacity Utilization 48.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 6 | 0 | 417 | 856 | 33 |
| Future Volume (Veh/h) | 0 | 6 | 0 | 417 | 856 | 33 |
| 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) | 0 | 6 | 0 | 417 | 856 | 33 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | TWLTL | |
| Median storage veh) | | | | | 2 | |
| Upstream signal (m) | | | | | 175 | |
| pX, platoon unblocked | 0.94 | 0.94 | 0.94 | | | |
| vC, conflicting volume | 1081 | 445 | 889 | | | |
| vC1, stage 1 conf vol | 873 | | | | | |
| vC2, stage 2 conf vol | 209 | | | | | |
| vCu, unblocked vol | 967 | 293 | 764 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 385 | 670 | 797 | | | |

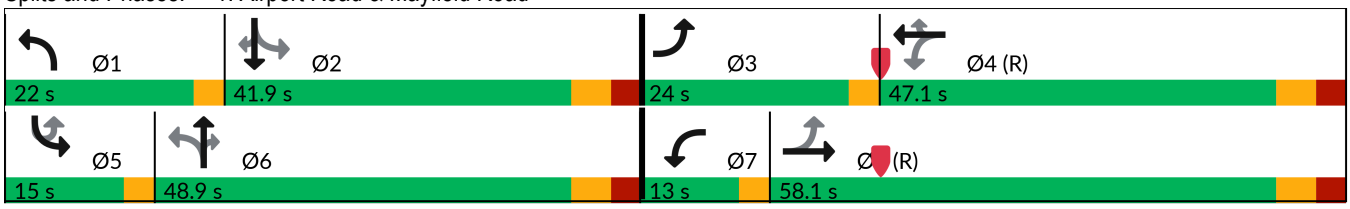
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 6 | 209 | 209 | 571 | 318 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 6 | 0 | 0 | 0 | 33 |
| cSH | 670 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.12 | 0.12 | 0.34 | 0.19 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 10.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 10.4 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 34.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 313 | 678 | 104 | 816 | 70 | 342 | 722 | 96 | 1 | 137 | 467 | 324 |
| Future Volume (vph) | 313 | 678 | 104 | 816 | 70 | 342 | 722 | 96 | 1 | 137 | 467 | 324 |
| Turn Type | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm | custom | pm+pt | NA | Perm |
| Protected Phases | 3 | 8 | 7 | 4 | | 1 | 6 | | | 5 | 2 | |
| Permitted Phases | 8 | | 4 | | 4 | 6 | | 6 | 5 | 2 | | 2 |
| Detector Phase | 3 | 8 | 7 | 4 | 4 | 1 | 6 | 6 | 5 | 5 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 12.0 | 12.0 | 5.0 | 5.0 | 12.0 | 12.0 |
| Minimum Split (s) | 8.0 | 46.1 | 8.0 | 46.1 | 46.1 | 8.0 | 41.9 | 41.9 | 8.0 | 8.0 | 41.9 | 41.9 |
| Total Split (s) | 24.0 | 58.1 | 13.0 | 47.1 | 47.1 | 22.0 | 48.9 | 48.9 | 15.0 | 15.0 | 41.9 | 41.9 |
| Total Split (%) | 17.8% | 43.0% | 9.6% | 34.9% | 34.9% | 16.3% | 36.2% | 36.2% | 11.1% | 11.1% | 31.0% | 31.0% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.1 | 0.0 | 3.1 | 3.1 | 0.0 | 2.9 | 2.9 | 0.0 | 0.0 | 2.9 | 2.9 |
| 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) | 3.0 | 7.1 | 3.0 | 7.1 | 7.1 | 3.0 | 6.9 | 6.9 | | 3.0 | 6.9 | 6.9 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | None | C-Max | C-Max | None | None | None | None | None | None | None |
| Act Effct Green (s) | 74.8 | 59.1 | 60.4 | 47.6 | 47.6 | 54.2 | 36.2 | 36.2 | | 43.3 | 28.3 | 28.3 |
| Actuated g/C Ratio | 0.55 | 0.44 | 0.45 | 0.35 | 0.35 | 0.40 | 0.27 | 0.27 | | 0.32 | 0.21 | 0.21 |
| v/c Ratio | 0.80 | 0.45 | 0.38 | 0.47 | 0.16 | 0.94 | 0.84 | 0.25 | | 0.68 | 0.68 | 0.60 |
| Control Delay (s/veh) | 35.5 | 26.2 | 21.0 | 36.5 | 0.7 | 66.4 | 56.2 | 6.7 | | 43.2 | 53.8 | 10.1 |
| 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 (s/veh) | 35.5 | 26.2 | 21.0 | 36.5 | 0.7 | 66.4 | 56.2 | 6.7 | | 43.2 | 53.8 | 10.1 |
| LOS | D | C | C | D | A | E | E | A | | D | D | B |
| Approach Delay (s/veh) | | 28.6 | | 32.3 | | | 55.1 | | | | 37.0 | |
| Approach LOS | | C | | C | | | E | | | | D | |

| Intersection Summary | |
|---|---|
| Cycle Length: 135 | |
| Actuated Cycle Length: 135 | |
| Offset: 0 (0%), Referenced to phase 4:WBTL and 8:EBTL, Start of Green | |
| Natural Cycle: 105 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.94 | |
| Intersection Signal Delay (s/veh): 38.4 | Intersection LOS: D |
| Intersection Capacity Utilization 103.4% | ICU Level of Service G |
| Analysis Period (min) 15 | |

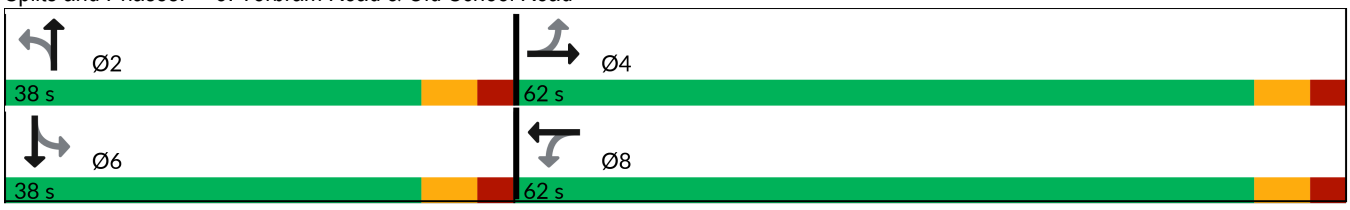
Splits and Phases: 1: Airport Road & Mayfield Road



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 44 | 237 | 25 | 419 | 40 | 385 | 1 | 197 |
| Future Volume (vph) | 44 | 237 | 25 | 419 | 40 | 385 | 1 | 197 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 | 24.9 |
| Total Split (s) | 62.0 | 62.0 | 62.0 | 62.0 | 38.0 | 38.0 | 38.0 | 38.0 |
| Total Split (%) | 62.0% | 62.0% | 62.0% | 62.0% | 38.0% | 38.0% | 38.0% | 38.0% |
| Yellow Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 |
| All-Red Time (s) | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.9 | | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | Max | Max | Max | Max |
| Act Effct Green (s) | | 20.8 | | 20.8 | 31.3 | 31.3 | 31.3 | 31.3 |
| Actuated g/C Ratio | | 0.32 | | 0.32 | 0.47 | 0.47 | 0.47 | 0.47 |
| v/c Ratio | | 0.60 | | 0.78 | 0.08 | 0.27 | 0.00 | 0.17 |
| Control Delay (s/veh) | | 23.9 | | 30.4 | 12.0 | 11.4 | 12.0 | 8.8 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | | 23.9 | | 30.4 | 12.0 | 11.4 | 12.0 | 8.8 |
| LOS | | C | | C | B | B | B | A |
| Approach Delay (s/veh) | | 23.9 | | 30.4 | | 11.4 | | 8.8 |
| Approach LOS | | C | | C | | B | | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 100 | |
| Actuated Cycle Length: 66 | |
| Natural Cycle: 50 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.78 | |
| Intersection Signal Delay (s/veh): 19.0 | Intersection LOS: B |
| Intersection Capacity Utilization 68.8% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 3: Torbram Road & Old School Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 914 | 27 | 3 | 579 | 29 |
| Future Volume (vph) | 141 | 0 | 45 | 0 | 2 | 68 | 914 | 27 | 3 | 579 | 29 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | | | 6 | | | 2 | |
| Permitted Phases | 4 | | 8 | | 6 | 6 | | 6 | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 6 | 6 | 6 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 48.0 | 48.0 | 48.0 | 48.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 | 72.0 |
| Total Split (%) | 40.0% | 40.0% | 40.0% | 40.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 18.2 | 18.2 | 18.2 | 18.2 | | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 |
| Actuated g/C Ratio | 0.15 | 0.15 | 0.15 | 0.15 | | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 | 0.73 |
| v/c Ratio | 0.68 | 0.21 | 0.32 | 0.02 | | 0.19 | 0.37 | 0.04 | 0.01 | 0.25 | 0.05 |
| Control Delay (s/veh) | 64.2 | 1.1 | 49.4 | 0.1 | | 7.6 | 6.7 | 0.9 | 6.7 | 6.3 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 64.2 | 1.1 | 49.4 | 0.1 | | 7.6 | 6.7 | 0.9 | 6.7 | 6.3 | 1.0 |
| LOS | E | A | D | A | | A | A | A | A | A | A |
| Approach Delay (s/veh) | | 40.0 | | 42.8 | | | 6.6 | | | 6.1 | |
| Approach LOS | | D | | D | | | A | | | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.68 | |
| Intersection Signal Delay (s/veh): 11.5 | Intersection LOS: B |
| Intersection Capacity Utilization 67.6% | ICU Level of Service C |
| Analysis Period (min) 15 | |

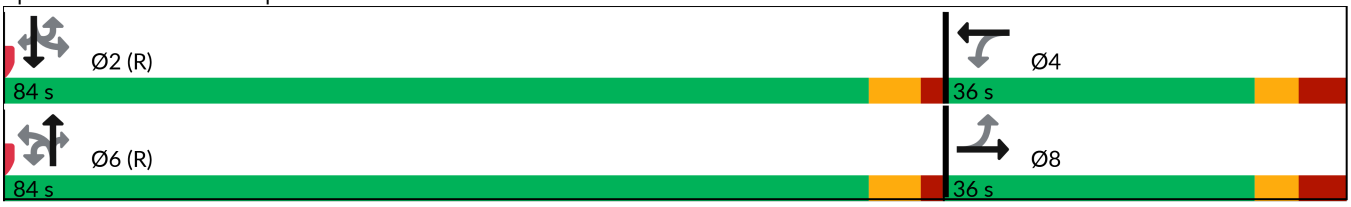
Splits and Phases: 5: Airport Road & Alban Road/12333 Airport Road



| Lane Group | EBL | EBT | WBL | WBT | NBU | NBL | NBT | NBR | SBU | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1050 | 49 | 8 | 20 | 702 | 9 |
| Future Volume (vph) | 6 | 0 | 80 | 0 | 3 | 36 | 1050 | 49 | 8 | 20 | 702 | 9 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | Perm | Perm | NA | Perm |
| Protected Phases | | 8 | | 4 | | | 6 | | | | 2 | |
| Permitted Phases | 8 | | 4 | | 6 | 6 | | 6 | 2 | 2 | | 2 |
| Detector Phase | 8 | 8 | 4 | 4 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 26.2 | 26.2 | 26.2 | 26.2 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 8.2 | 8.2 | | 6.6 | 6.6 | 6.6 | | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 14.3 | 14.3 | 14.3 | 14.3 | | 96.2 | 96.2 | 96.2 | | 96.2 | 96.2 | 96.2 |
| Actuated g/C Ratio | 0.12 | 0.12 | 0.12 | 0.12 | | 0.80 | 0.80 | 0.80 | | 0.80 | 0.80 | 0.80 |
| v/c Ratio | 0.04 | 0.15 | 0.54 | 0.03 | | 0.11 | 0.40 | 0.07 | | 0.12 | 0.27 | 0.01 |
| Control Delay (s/veh) | 45.0 | 0.8 | 63.2 | 0.3 | | 5.3 | 5.4 | 1.6 | | 3.1 | 2.0 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 45.0 | 0.8 | 63.2 | 0.3 | | 5.3 | 5.4 | 1.6 | | 3.1 | 2.0 | 0.0 |
| LOS | D | A | E | A | | A | A | A | | A | A | A |
| Approach Delay (s/veh) | | 4.7 | | 57.4 | | | 5.2 | | | | 2.0 | |
| Approach LOS | | A | | E | | | A | | | | A | |

| Intersection Summary | | |
|---|---|---|
| Cycle Length: 120 | | |
| Actuated Cycle Length: 120 | | |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green | | |
| Natural Cycle: 60 | | |
| Control Type: Actuated-Coordinated | | |
| Maximum v/c Ratio: 0.54 | | |
| Intersection Signal Delay (s/veh): 6.3 | Intersection LOS: A | |
| Intersection Capacity Utilization 55.8% | ICU Level of Service B | |
| Analysis Period (min) 15 | | |

Splits and Phases: 6: Airport Road & Perdue Court/Davis Lane





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 10 | 0 | 1102 | 596 | 5 |
| Future Volume (Veh/h) | 0 | 10 | 0 | 1102 | 596 | 5 |
| 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) | 0 | 10 | 0 | 1102 | 596 | 5 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (m) | | | | 170 | | |
| pX, platoon unblocked | 0.91 | | | | | |
| vC, conflicting volume | 1150 | 301 | 601 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 965 | 301 | 601 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 230 | 702 | 972 | | | |

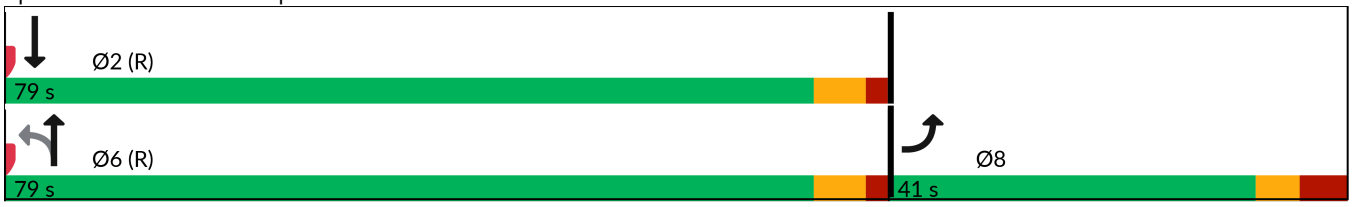
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 10 | 551 | 551 | 397 | 204 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 10 | 0 | 0 | 0 | 5 |
| cSH | 702 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.32 | 0.32 | 0.23 | 0.12 |
| Queue Length 95th (m) | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 10.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 10.2 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 37.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | NBL | NBT | SBT |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 51 | 13 | 1051 | 597 |
| Future Volume (vph) | 51 | 13 | 1051 | 597 |
| Turn Type | Prot | Perm | NA | NA |
| Protected Phases | 8 | | 6 | 2 |
| Permitted Phases | | 6 | | |
| Detector Phase | 8 | 6 | 6 | 2 |
| Switch Phase | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 41.0 | 79.0 | 79.0 | 79.0 |
| Total Split (%) | 34.2% | 65.8% | 65.8% | 65.8% |
| Yellow Time (s) | 4.0 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | |
| Lead-Lag Optimize? | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.3 | 98.2 | 98.2 | 98.2 |
| Actuated g/C Ratio | 0.10 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.35 | 0.03 | 0.37 | 0.24 |
| Control Delay (s/veh) | 54.0 | 7.1 | 8.3 | 3.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 54.0 | 7.1 | 8.3 | 3.6 |
| LOS | D | A | A | A |
| Approach Delay (s/veh) | 54.0 | | 8.3 | 3.6 |
| Approach LOS | D | | A | A |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 75 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.37 | |
| Intersection Signal Delay (s/veh): 8.1 | Intersection LOS: A |
| Intersection Capacity Utilization 51.4% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 20 | 0 | 1064 | 592 | 10 |
| Future Volume (Veh/h) | 0 | 20 | 0 | 1064 | 592 | 10 |
| 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) | 0 | 20 | 0 | 1064 | 592 | 10 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | TWLTL | |
| Median storage veh) | | | | | 2 | |
| Upstream signal (m) | | | | | 175 | |
| pX, platoon unblocked | 0.96 | 0.96 | 0.96 | | | |
| vC, conflicting volume | 1129 | 301 | 602 | | | |
| vC1, stage 1 conf vol | 597 | | | | | |
| vC2, stage 2 conf vol | 532 | | | | | |
| vCu, unblocked vol | 1057 | 198 | 510 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 97 | 100 | | | |
| cM capacity (veh/h) | 428 | 787 | 1012 | | | |

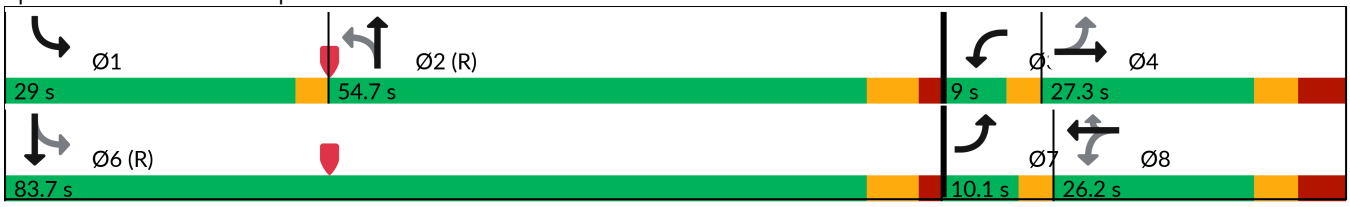
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 20 | 532 | 532 | 395 | 207 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 20 | 0 | 0 | 0 | 10 |
| cSH | 787 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.03 | 0.31 | 0.31 | 0.23 | 0.12 |
| Queue Length 95th (m) | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 9.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | | |
| Approach Delay (s/veh) | 9.7 | 0.0 | | 0.0 | |
| Approach LOS | A | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 32.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | WBL | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 120 | 0 | 75 | 164 | 113 | 341 | 507 | 730 |
| Future Volume (vph) | 120 | 0 | 75 | 164 | 113 | 341 | 507 | 730 |
| Turn Type | pm+pt | NA | pm+pt | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | 8 | 2 | | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 12.0 | 5.0 | 12.0 |
| Minimum Split (s) | 9.5 | 26.2 | 8.0 | 26.2 | 24.6 | 24.6 | 8.0 | 24.6 |
| Total Split (s) | 10.1 | 27.3 | 9.0 | 26.2 | 54.7 | 54.7 | 29.0 | 83.7 |
| Total Split (%) | 8.4% | 22.8% | 7.5% | 21.8% | 45.6% | 45.6% | 24.2% | 69.8% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.6 | 4.6 | 3.0 | 4.6 |
| All-Red Time (s) | 0.0 | 4.2 | 0.0 | 4.2 | 2.0 | 2.0 | 0.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 8.2 | 3.0 | 8.2 | 6.6 | 6.6 | 3.0 | 6.6 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lag | Lead | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 25.8 | 14.9 | 23.2 | 12.0 | 56.6 | 56.6 | 86.7 | 83.1 |
| Actuated g/C Ratio | 0.22 | 0.12 | 0.19 | 0.10 | 0.47 | 0.47 | 0.72 | 0.69 |
| v/c Ratio | 0.67 | 0.11 | 0.44 | 0.26 | 0.54 | 0.37 | 0.80 | 0.49 |
| Control Delay (s/veh) | 61.7 | 0.6 | 48.8 | 1.0 | 36.7 | 17.5 | 25.3 | 7.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 61.7 | 0.6 | 48.8 | 1.0 | 36.7 | 17.5 | 25.3 | 7.9 |
| LOS | E | A | D | A | D | B | C | A |
| Approach Delay (s/veh) | | 45.3 | | | | 20.9 | | 13.6 |
| Approach LOS | | D | | | | C | | B |

| 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: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.80 | |
| Intersection Signal Delay (s/veh): 17.6 | Intersection LOS: B |
| Intersection Capacity Utilization 72.7% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 13: Airport Road & E-W Collector Road





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 3 | 0 | 625 | 1559 | 16 |
| Future Volume (Veh/h) | 0 | 3 | 0 | 625 | 1559 | 16 |
| 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) | 0 | 3 | 0 | 625 | 1559 | 16 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | TWLTL | |
| Median storage veh) | | | | 2 | 2 | |
| Upstream signal (m) | | | | 166 | | |
| pX, platoon unblocked | 0.97 | | | | | |
| vC, conflicting volume | 1880 | 788 | 1575 | | | |
| vC1, stage 1 conf vol | 1567 | | | | | |
| vC2, stage 2 conf vol | 313 | | | | | |
| vCu, unblocked vol | 1848 | 788 | 1575 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 152 | 339 | 414 | | | |

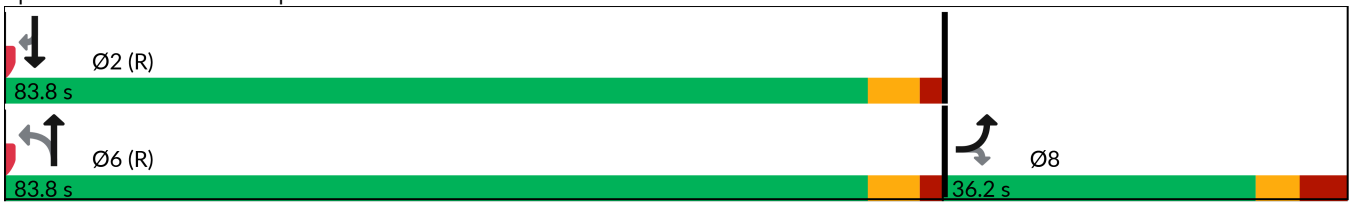
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 3 | 313 | 313 | 1039 | 536 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 3 | 0 | 0 | 0 | 16 |
| cSH | 339 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.18 | 0.18 | 0.61 | 0.32 |
| Queue Length 95th (m) | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 15.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | |
| Approach Delay (s/veh) | 15.7 | 0.0 | | 0.0 | |
| Approach LOS | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 53.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 17 | 3 | 31 | 625 | 1559 | 6 |
| Future Volume (vph) | 17 | 3 | 31 | 625 | 1559 | 6 |
| Turn Type | Prot | Perm | Perm | NA | NA | Perm |
| Protected Phases | 8 | | | 6 | 2 | |
| Permitted Phases | | 8 | 6 | | | 2 |
| Detector Phase | 8 | 8 | 6 | 6 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 36.2 | 36.2 | 83.8 | 83.8 | 83.8 | 83.8 |
| Total Split (%) | 30.2% | 30.2% | 69.8% | 69.8% | 69.8% | 69.8% |
| Yellow Time (s) | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.0 | 12.0 | 109.3 | 109.3 | 109.3 | 109.3 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.91 | 0.91 | 0.91 | 0.91 |
| v/c Ratio | 0.12 | 0.03 | 0.13 | 0.22 | 0.53 | 0.01 |
| Control Delay (s/veh) | 51.5 | 32.7 | 3.9 | 2.0 | 3.7 | 2.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 51.5 | 32.7 | 3.9 | 2.0 | 3.7 | 2.2 |
| LOS | D | C | A | A | A | A |
| Approach Delay (s/veh) | 48.7 | | | 2.1 | 3.7 | |
| Approach LOS | D | | | A | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.53 | |
| Intersection Signal Delay (s/veh): 3.6 | Intersection LOS: A |
| Intersection Capacity Utilization 65.4% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 6 | 0 | 625 | 1559 | 33 |
| Future Volume (Veh/h) | 0 | 6 | 0 | 625 | 1559 | 33 |
| 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) | 0 | 6 | 0 | 625 | 1559 | 33 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | TWLTL | |
| Median storage veh) | | | | 2 | 2 | |
| Upstream signal (m) | | | | 135 | 174 | |
| pX, platoon unblocked | 0.84 | 0.84 | 0.84 | | | |
| vC, conflicting volume | 1888 | 796 | 1592 | | | |
| vC1, stage 1 conf vol | 1576 | | | | | |
| vC2, stage 2 conf vol | 313 | | | | | |
| vCu, unblocked vol | 1675 | 375 | 1323 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 176 | 528 | 435 | | | |

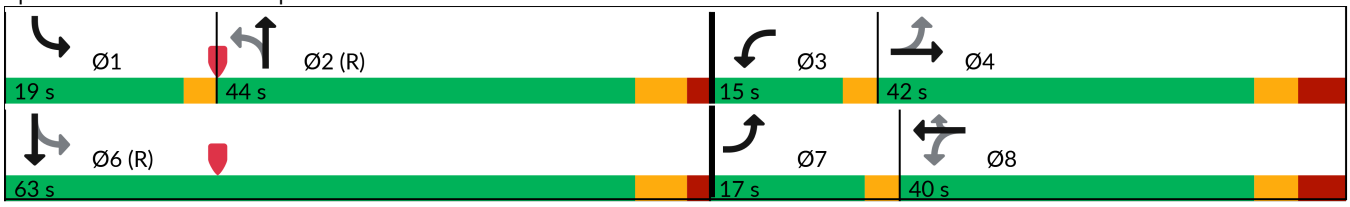
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 6 | 313 | 313 | 1039 | 553 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 6 | 0 | 0 | 0 | 33 |
| cSH | 528 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.18 | 0.18 | 0.61 | 0.33 |
| Queue Length 95th (m) | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 11.9 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 54.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | WBL | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 329 | 0 | 203 | 483 | 36 | 802 | 166 | 449 |
| Future Volume (vph) | 329 | 0 | 203 | 483 | 36 | 802 | 166 | 449 |
| Turn Type | pm+pt | NA | pm+pt | Perm | Perm | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | | | 2 | 1 | 6 |
| Permitted Phases | 4 | | 8 | 8 | 2 | | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 5.0 | 12.0 | 5.0 | 12.0 | 12.0 | 12.0 | 5.0 | 12.0 |
| Minimum Split (s) | 9.5 | 26.2 | 8.0 | 26.2 | 24.6 | 24.6 | 8.0 | 24.6 |
| Total Split (s) | 17.0 | 42.0 | 15.0 | 40.0 | 44.0 | 44.0 | 19.0 | 63.0 |
| Total Split (%) | 14.2% | 35.0% | 12.5% | 33.3% | 36.7% | 36.7% | 15.8% | 52.5% |
| Yellow Time (s) | 3.0 | 4.0 | 3.0 | 4.0 | 4.6 | 4.6 | 3.0 | 4.6 |
| All-Red Time (s) | 0.0 | 4.2 | 0.0 | 4.2 | 2.0 | 2.0 | 0.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 8.2 | 3.0 | 8.2 | 6.6 | 6.6 | 3.0 | 6.6 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lag | Lag | Lead | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Recall Mode | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 43.6 | 24.4 | 39.6 | 22.4 | 49.7 | 49.7 | 69.4 | 65.8 |
| Actuated g/C Ratio | 0.36 | 0.20 | 0.33 | 0.19 | 0.41 | 0.41 | 0.58 | 0.55 |
| v/c Ratio | 0.79 | 0.28 | 0.56 | 0.91 | 0.14 | 0.63 | 0.63 | 0.35 |
| Control Delay (s/veh) | 45.2 | 1.3 | 33.3 | 35.7 | 29.7 | 32.7 | 35.7 | 14.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 45.2 | 1.3 | 33.3 | 35.7 | 29.7 | 32.7 | 35.7 | 14.9 |
| LOS | D | A | C | D | C | C | D | B |
| Approach Delay (s/veh) | | 30.7 | | | | 32.6 | | 19.6 |
| Approach LOS | | C | | | | C | | B |

| 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: 90 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.91 | |
| Intersection Signal Delay (s/veh): 29.5 | Intersection LOS: C |
| Intersection Capacity Utilization 88.2% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 13: Airport Road & E-W Collector Road





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 10 | 0 | 1614 | 728 | 5 |
| Future Volume (Veh/h) | 0 | 10 | 0 | 1614 | 728 | 5 |
| 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) | 0 | 10 | 0 | 1614 | 728 | 5 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | TWLTL | |
| Median storage veh) | | | | 2 | 2 | |
| Upstream signal (m) | | | | 166 | | |
| pX, platoon unblocked | 0.81 | | | | | |
| vC, conflicting volume | 1538 | 367 | 733 | | | |
| vC1, stage 1 conf vol | 731 | | | | | |
| vC2, stage 2 conf vol | 807 | | | | | |
| vCu, unblocked vol | 1198 | 367 | 733 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 98 | 100 | | | |
| cM capacity (veh/h) | 368 | 636 | 868 | | | |

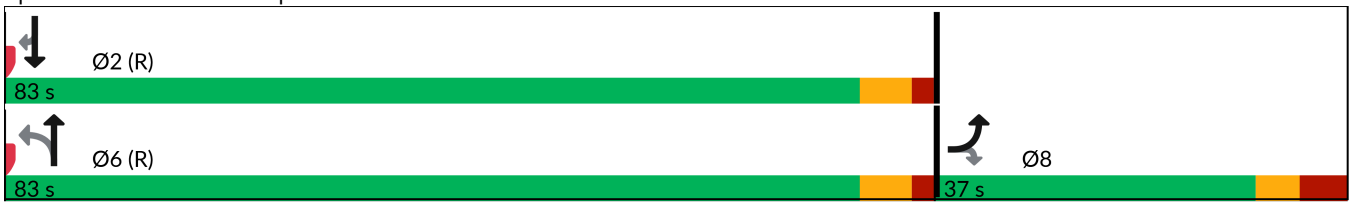
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 10 | 807 | 807 | 485 | 248 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 10 | 0 | 0 | 0 | 5 |
| cSH | 636 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.47 | 0.47 | 0.29 | 0.15 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | |
| Approach Delay (s/veh) | 10.7 | 0.0 | | 0.0 | |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 51 | 4 | 13 | 1614 | 728 | 8 |
| Future Volume (vph) | 51 | 4 | 13 | 1614 | 728 | 8 |
| Turn Type | Prot | Perm | Perm | NA | NA | Perm |
| Protected Phases | 8 | | | 6 | 2 | |
| Permitted Phases | | 8 | 6 | | | 2 |
| Detector Phase | 8 | 8 | 6 | 6 | 2 | 2 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Minimum Split (s) | 36.2 | 36.2 | 35.6 | 35.6 | 35.6 | 35.6 |
| Total Split (s) | 37.0 | 37.0 | 83.0 | 83.0 | 83.0 | 83.0 |
| Total Split (%) | 30.8% | 30.8% | 69.2% | 69.2% | 69.2% | 69.2% |
| Yellow Time (s) | 4.0 | 4.0 | 4.6 | 4.6 | 4.6 | 4.6 |
| All-Red Time (s) | 4.2 | 4.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 8.2 | 8.2 | 6.6 | 6.6 | 6.6 | 6.6 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Recall Mode | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 12.2 | 12.2 | 98.4 | 98.4 | 98.4 | 98.4 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.82 | 0.82 | 0.82 | 0.82 |
| v/c Ratio | 0.32 | 0.05 | 0.03 | 0.57 | 0.28 | 0.01 |
| Control Delay (s/veh) | 55.8 | 31.3 | 4.0 | 5.0 | 3.8 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (s/veh) | 55.8 | 31.3 | 4.0 | 5.0 | 3.8 | 1.8 |
| LOS | E | C | A | A | A | A |
| Approach Delay (s/veh) | 54.0 | | | 5.0 | 3.7 | |
| Approach LOS | D | | | A | A | |

| Intersection Summary | |
|---|---|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green | |
| Natural Cycle: 80 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.57 | |
| Intersection Signal Delay (s/veh): 5.7 | Intersection LOS: A |
| Intersection Capacity Utilization 66.9% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 16: Airport Road & Full Moves Access





| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 20 | 0 | 1614 | 728 | 10 |
| Future Volume (Veh/h) | 0 | 20 | 0 | 1614 | 728 | 10 |
| 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) | 0 | 20 | 0 | 1614 | 728 | 10 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | TWLTL | |
| Median storage veh) | | | | 2 | 2 | |
| Upstream signal (m) | | | | 135 | 174 | |
| pX, platoon unblocked | 0.83 | 0.95 | 0.95 | | | |
| vC, conflicting volume | 1540 | 369 | 738 | | | |
| vC1, stage 1 conf vol | 733 | | | | | |
| vC2, stage 2 conf vol | 807 | | | | | |
| vCu, unblocked vol | 944 | 223 | 612 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | 5.8 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 97 | 100 | | | |
| cM capacity (veh/h) | 414 | 746 | 912 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 20 | 807 | 807 | 485 | 253 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 20 | 0 | 0 | 0 | 10 |
| cSH | 746 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.03 | 0.47 | 0.47 | 0.29 | 0.15 |
| Queue Length 95th (m) | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s/veh) | 10.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | | |
| Approach Delay (s/veh) | 10.0 | 0.0 | | 0.0 | |
| Approach LOS | A | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.1 | | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

# APPENDIX F:

## Detailed Queueing Analyses

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 3538 | 3698 | 3603 | 3612 |
| Vehs Exited | 3574 | 3670 | 3591 | 3612 |
| Starting Vehs | 171 | 148 | 133 | 151 |
| Ending Vehs | 135 | 176 | 145 | 151 |
| Travel Distance (km) | 6395 | 6515 | 6308 | 6406 |
| Travel Time (hr) | 138.7 | 143.7 | 138.3 | 140.2 |
| Total Delay (hr) | 39.0 | 42.3 | 39.8 | 40.4 |
| Total Stops | 3468 | 3557 | 3539 | 3515 |
| Fuel Used (l) | 507.6 | 521.4 | 503.9 | 511.0 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 3538 | 3698 | 3603 | 3612 |
| Vehs Exited | 3574 | 3670 | 3591 | 3612 |
| Starting Vehs | 171 | 148 | 133 | 151 |
| Ending Vehs | 135 | 176 | 145 | 151 |
| Travel Distance (km) | 6395 | 6515 | 6308 | 6406 |
| Travel Time (hr) | 138.7 | 143.7 | 138.3 | 140.2 |
| Total Delay (hr) | 39.0 | 42.3 | 39.8 | 40.4 |
| Total Stops | 3468 | 3557 | 3539 | 3515 |
| Fuel Used (l) | 507.6 | 521.4 | 503.9 | 511.0 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | UL | T | TR | L | T | T | R | L |
| Maximum Queue (m) | 63.4 | 129.2 | 117.6 | 63.1 | 42.9 | 64.4 | 59.8 | 66.7 | 53.8 | 53.9 | 28.7 | 53.0 |
| Average Queue (m) | 31.2 | 73.0 | 36.1 | 32.7 | 19.6 | 36.3 | 28.8 | 39.9 | 19.9 | 17.7 | 12.1 | 18.2 |
| 95th Queue (m) | 53.5 | 113.3 | 99.3 | 52.5 | 38.2 | 58.1 | 54.2 | 65.1 | 39.9 | 38.5 | 24.1 | 40.4 |
| Link Distance (m) | | 668.2 | 668.2 | 668.2 | | 82.8 | | | 442.5 | 442.5 | | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 50.0 | | 70.0 | 95.0 | | | 60.0 | 100.0 |
| Storage Blk Time (%) | | | | | 0 | 2 | 0 | | | 0 | | |
| Queuing Penalty (veh) | | | | | 1 | 8 | 0 | | | 0 | | |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | R |
| Maximum Queue (m) | 65.5 | 73.4 | 38.9 |
| Average Queue (m) | 42.7 | 45.8 | 16.5 |
| 95th Queue (m) | 66.1 | 70.6 | 31.5 |
| Link Distance (m) | 435.0 | 435.0 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (m) | | | 105.0 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (m) | 26.8 | 22.6 | 17.2 | 24.9 |
| Average Queue (m) | 14.8 | 10.0 | 8.0 | 14.8 |
| 95th Queue (m) | 24.0 | 18.0 | 14.8 | 22.6 |
| Link Distance (m) | 540.8 | 1374.7 | 471.0 | 435.9 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: Airport Road & Old School Road/Healy Road

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | LT | R | LT | R |
| Maximum Queue (m) | 82.0 | 51.7 | 34.4 | 22.5 | 102.6 | 7.7 |
| Average Queue (m) | 42.0 | 23.6 | 8.2 | 5.5 | 43.0 | 0.3 |
| 95th Queue (m) | 76.2 | 43.7 | 25.6 | 18.5 | 82.3 | 2.9 |
| Link Distance (m) | 1374.7 | 236.3 | 1868.5 | | 217.9 | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (m) | | | | 15.0 | | 50.0 |
| Storage Blk Time (%) | | | 4 | 0 | 5 | |
| Queuing Penalty (veh) | | | 4 | 1 | 0 | |

## Intersection: 5: Airport Road & 12333 Airport Road

| Movement | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | R | UT | T | R | L | T | T |
| Maximum Queue (m) | 49.8 | 10.9 | 26.8 | 9.5 | 20.3 | 12.9 | 40.6 | 37.1 |
| Average Queue (m) | 18.6 | 1.0 | 7.3 | 0.3 | 1.9 | 1.2 | 9.5 | 10.9 |
| 95th Queue (m) | 40.8 | 5.8 | 23.0 | 3.8 | 9.7 | 6.6 | 28.2 | 29.8 |
| Link Distance (m) | 225.4 | | 417.0 | 417.0 | | | 235.4 | 235.4 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | 100.0 | | | 145.0 | 75.0 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | L | T |
| Maximum Queue (m) | 16.8 | 26.1 | 23.9 | 19.4 | 28.9 | 1.8 | 4.1 | 12.4 | 4.9 |
| Average Queue (m) | 0.7 | 6.9 | 8.5 | 3.1 | 8.4 | 0.1 | 0.2 | 0.5 | 0.2 |
| 95th Queue (m) | 6.3 | 19.1 | 22.2 | 13.4 | 20.3 | 1.0 | 2.5 | 4.8 | 3.0 |
| Link Distance (m) | 94.3 | 94.3 | | 114.2 | | 435.0 | 435.0 | | 417.0 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 70.0 | |
| Storage Blk Time (%) | | | 0 | | | | | | |
| Queuing Penalty (veh) | | | 0 | | | | | | |

## Intersection: 10: Bend

| Movement | EB | EB |
|---|---|---|
| Directions Served | T | |
| Maximum Queue (m) | 27.5 | 19.8 |
| Average Queue (m) | 1.8 | 1.3 |
| 95th Queue (m) | 13.3 | 11.1 |
| Link Distance (m) | 82.8 | 82.8 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Network Summary

Network wide Queuing Penalty: 15

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 3906 | 3910 | 3896 | 3907 |
| Vehs Exited | 3922 | 3931 | 3887 | 3912 |
| Starting Vehs | 199 | 188 | 177 | 188 |
| Ending Vehs | 183 | 167 | 186 | 177 |
| Travel Distance (km) | 7247 | 7241 | 7150 | 7213 |
| Travel Time (hr) | 168.1 | 170.9 | 164.2 | 167.7 |
| Total Delay (hr) | 56.2 | 58.8 | 53.5 | 56.2 |
| Total Stops | 4302 | 4319 | 4266 | 4299 |
| Fuel Used (l) | 590.7 | 591.7 | 585.1 | 589.2 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 3906 | 3910 | 3896 | 3907 |
| Vehs Exited | 3922 | 3931 | 3887 | 3912 |
| Starting Vehs | 199 | 188 | 177 | 188 |
| Ending Vehs | 183 | 167 | 186 | 177 |
| Travel Distance (km) | 7247 | 7241 | 7150 | 7213 |
| Travel Time (hr) | 168.1 | 170.9 | 164.2 | 167.7 |
| Total Delay (hr) | 56.2 | 58.8 | 53.5 | 56.2 |
| Total Stops | 4302 | 4319 | 4266 | 4299 |
| Fuel Used (l) | 590.7 | 591.7 | 585.1 | 589.2 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | B10 | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | L | T | TR | T | L | T | T | R |
| Maximum Queue (m) | 70.4 | 108.9 | 96.6 | 22.3 | 67.1 | 101.3 | 82.6 | 8.0 | 121.4 | 118.0 | 111.7 | 26.6 |
| Average Queue (m) | 29.1 | 53.7 | 15.6 | 8.8 | 18.4 | 50.3 | 43.9 | 0.3 | 67.9 | 56.7 | 52.8 | 12.5 |
| 95th Queue (m) | 53.7 | 94.6 | 63.4 | 18.6 | 41.6 | 82.6 | 75.9 | 4.4 | 121.5 | 100.5 | 86.7 | 23.6 |
| Link Distance (m) | | 668.2 | 668.2 | 668.2 | | 82.8 | | 341.4 | | 442.5 | 442.5 | |
| Upstream Blk Time (%) | | | | | 0 | 0 | 0 | | | | | |
| Queuing Penalty (veh) | | | | | 0 | 0 | 0 | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 50.0 | | 70.0 | | 95.0 | | | 60.0 |
| Storage Blk Time (%) | | | | | 0 | 7 | 0 | | 12 | 1 | 5 | |
| Queuing Penalty (veh) | | | | | 1 | 32 | 2 | | 30 | 2 | 5 | |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | UL | T | T | R |
| Maximum Queue (m) | 55.6 | 55.7 | 55.0 | 56.4 |
| Average Queue (m) | 22.7 | 28.3 | 28.8 | 23.4 |
| 95th Queue (m) | 43.5 | 43.8 | 46.4 | 41.7 |
| Link Distance (m) | | 435.0 | 435.0 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (m) | 26.8 | 60.5 | 24.4 | 20.9 |
| Average Queue (m) | 13.0 | 31.4 | 14.0 | 9.6 |
| 95th Queue (m) | 21.3 | 52.1 | 22.2 | 16.1 |
| Link Distance (m) | 540.8 | 1374.7 | 471.0 | 435.9 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: Airport Road & Old School Road/Healy Road

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | LT | R | LT | R |
| Maximum Queue (m) | 72.1 | 123.7 | 144.3 | 22.5 | 96.4 | 12.9 |
| Average Queue (m) | 36.0 | 69.8 | 67.1 | 10.7 | 36.7 | 2.3 |
| 95th Queue (m) | 61.3 | 113.0 | 127.1 | 27.2 | 71.0 | 9.1 |
| Link Distance (m) | 1374.7 | 236.3 | 1868.5 | | 217.9 | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (m) | | | | 15.0 | | 50.0 |
| Storage Blk Time (%) | | | 36 | 0 | 7 | |
| Queuing Penalty (veh) | | | 25 | 2 | 1 | |

## Intersection: 5: Airport Road & 12333 Airport Road

| Movement | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | R | UT | T | R | L | T | T |
| Maximum Queue (m) | 58.6 | 7.2 | 66.0 | 43.9 | 14.8 | 2.4 | 28.5 | 30.5 |
| Average Queue (m) | 19.2 | 1.7 | 14.4 | 4.3 | 1.8 | 0.1 | 5.5 | 7.0 |
| 95th Queue (m) | 43.5 | 6.6 | 44.3 | 22.1 | 8.8 | 1.3 | 18.9 | 22.2 |
| Link Distance (m) | 225.4 | | 417.0 | 417.0 | | | 235.4 | 235.4 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | 100.0 | | | 145.0 | 75.0 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | UL | R |
| Maximum Queue (m) | 10.0 | 24.5 | 26.4 | 13.8 | 21.1 | 28.0 | 3.7 |
| Average Queue (m) | 2.4 | 7.7 | 11.9 | 2.3 | 4.1 | 6.3 | 0.1 |
| 95th Queue (m) | 8.4 | 16.8 | 21.6 | 8.9 | 15.0 | 20.3 | 2.1 |
| Link Distance (m) | 94.3 | 94.3 | | 114.2 | | | |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | 70.0 | 60.0 |
| Storage Blk Time (%) | | | 0 | | | | |
| Queuing Penalty (veh) | | | 0 | | | | |

## Intersection: 10: Bend

| Movement | EB | EB |
|---|---|---|
| Directions Served | T | |
| Maximum Queue (m) | 24.5 | 9.3 |
| Average Queue (m) | 0.9 | 0.3 |
| 95th Queue (m) | 10.0 | 5.2 |
| Link Distance (m) | 82.8 | 82.8 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Network Summary

Network wide Queuing Penalty: 100

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 4679 | 4585 | 4770 | 4678 |
| Vehs Exited | 4704 | 4650 | 4729 | 4695 |
| Starting Vehs | 224 | 225 | 196 | 216 |
| Ending Vehs | 199 | 160 | 237 | 201 |
| Travel Distance (km) | 8305 | 8185 | 8405 | 8298 |
| Travel Time (hr) | 204.8 | 192.7 | 230.7 | 209.4 |
| Total Delay (hr) | 75.0 | 65.6 | 99.8 | 80.1 |
| Total Stops | 5668 | 5332 | 6025 | 5673 |
| Fuel Used (l) | 692.3 | 678.3 | 722.3 | 697.6 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 4679 | 4585 | 4770 | 4678 |
| Vehs Exited | 4704 | 4650 | 4729 | 4695 |
| Starting Vehs | 224 | 225 | 196 | 216 |
| Ending Vehs | 199 | 160 | 237 | 201 |
| Travel Distance (km) | 8305 | 8185 | 8405 | 8298 |
| Travel Time (hr) | 204.8 | 192.7 | 230.7 | 209.4 |
| Total Delay (hr) | 75.0 | 65.6 | 99.8 | 80.1 |
| Total Stops | 5668 | 5332 | 6025 | 5673 |
| Fuel Used (l) | 692.3 | 678.3 | 722.3 | 697.6 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | B10 | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | UL | T | TR | T | L | T | T | R |
| Maximum Queue (m) | 72.9 | 209.7 | 204.8 | 84.0 | 66.8 | 101.4 | 82.7 | 20.9 | 110.4 | 92.9 | 69.8 | 31.9 |
| Average Queue (m) | 39.7 | 129.7 | 103.2 | 45.7 | 27.0 | 48.8 | 41.8 | 0.7 | 65.8 | 45.2 | 34.2 | 12.3 |
| 95th Queue (m) | 65.0 | 224.5 | 222.0 | 75.0 | 50.0 | 79.4 | 71.0 | 9.2 | 117.8 | 83.3 | 62.5 | 24.9 |
| Link Distance (m) | | 668.2 | 668.2 | 668.2 | | 82.8 | | 341.4 | | 442.5 | 442.5 | |
| Upstream Blk Time (%) | | | | | 0 | 1 | 0 | | | | | |
| Queuing Penalty (veh) | | | | | 0 | 0 | 0 | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 50.0 | | 70.0 | | 95.0 | | | 60.0 |
| Storage Blk Time (%) | | 11 | | | 0 | 6 | 0 | | 10 | 0 | 1 | |
| Queuing Penalty (veh) | | 23 | | | 1 | 23 | 1 | | 19 | 0 | 0 | |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | T | T | R |
| Maximum Queue (m) | 52.4 | 105.1 | 112.5 | 57.8 |
| Average Queue (m) | 23.1 | 62.2 | 65.2 | 20.1 |
| 95th Queue (m) | 44.2 | 95.9 | 99.9 | 40.5 |
| Link Distance (m) | | 434.9 | 434.9 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | 1 | 0 | |
| Queuing Penalty (veh) | | 1 | 1 | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (m) | 44.3 | 28.3 | 23.6 | 43.4 |
| Average Queue (m) | 20.0 | 13.1 | 10.2 | 20.5 |
| 95th Queue (m) | 35.9 | 23.6 | 17.3 | 35.8 |
| Link Distance (m) | 540.8 | 1374.6 | 471.0 | 435.9 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: Airport Road & Old School Road/Healy Road

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | LT | R | LT | R |
| Maximum Queue (m) | 96.1 | 62.6 | 129.9 | 22.8 | 195.5 | 76.2 |
| Average Queue (m) | 48.6 | 33.8 | 30.6 | 10.3 | 96.3 | 7.6 |
| 95th Queue (m) | 83.3 | 58.5 | 92.2 | 26.0 | 185.2 | 48.9 |
| Link Distance (m) | 1374.6 | 236.2 | 575.0 | | 217.9 | |
| Upstream Blk Time (%) | | | | | 2 | |
| Queuing Penalty (veh) | | | | | 0 | |
| Storage Bay Dist (m) | | | | 15.0 | | 50.0 |
| Storage Blk Time (%) | | | 19 | 1 | 25 | |
| Queuing Penalty (veh) | | | 22 | 2 | 9 | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 26.3 | 40.2 | 73.4 | 7.0 | 47.8 | 31.7 | 11.1 | 15.2 | 12.1 | 41.8 | 50.0 | 22.7 |
| Average Queue (m) | 7.7 | 13.0 | 18.6 | 0.4 | 17.5 | 11.0 | 0.7 | 1.2 | 0.7 | 14.2 | 16.1 | 5.5 |
| 95th Queue (m) | 20.7 | 28.5 | 45.9 | 2.9 | 34.8 | 27.0 | 5.1 | 7.0 | 5.2 | 34.9 | 38.8 | 16.9 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 235.2 | 235.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | | 0 | 0 | | | | | | | | | |
| Queuing Penalty (veh) | | 0 | 0 | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | |
| Maximum Queue (m) | 17.2 | 31.5 | 35.6 | 27.5 | 35.7 | 30.3 | 22.8 | 13.6 | 11.2 | 43.6 | 46.9 | |
| Average Queue (m) | 0.8 | 9.4 | 10.2 | 1.6 | 12.8 | 9.1 | 5.1 | 1.6 | 1.0 | 11.7 | 13.2 | |
| 95th Queue (m) | 6.7 | 24.7 | 28.6 | 12.1 | 30.2 | 24.6 | 16.6 | 7.4 | 5.7 | 32.3 | 35.0 | |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 434.9 | 434.9 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | |
| Storage Blk Time (%) | | | 2 | | | | | | | | 0 | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | 0 | |

## Intersection: 10: Bend

| Movement | EB | EB |
|---|---|---|
| Directions Served | T | |
| Maximum Queue (m) | 67.7 | 34.3 |
| Average Queue (m) | 5.3 | 1.5 |
| 95th Queue (m) | 31.3 | 12.9 |
| Link Distance (m) | 82.8 | 82.8 |
| Upstream Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 0 | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement |
|---|
| Directions Served |
| Maximum Queue (m) |
| Average Queue (m) |
| 95th Queue (m) |
| Link Distance (m) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (m) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 16: Airport Road & Full Moves Access

| Movement |
|---|
| Directions Served |
| Maximum Queue (m) |
| Average Queue (m) |
| 95th Queue (m) |
| Link Distance (m) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (m) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 17: Airport Road & South RIRO Access

| Movement |
|---|
| Directions Served |
| Maximum Queue (m) |
| Average Queue (m) |
| 95th Queue (m) |
| Link Distance (m) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (m) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 101

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5249 | 5283 | 5430 | 5323 |
| Vehs Exited | 4992 | 5025 | 5137 | 5049 |
| Starting Vehs | 287 | 265 | 280 | 275 |
| Ending Vehs | 544 | 523 | 573 | 544 |
| Travel Distance (km) | 9464 | 9415 | 9606 | 9495 |
| Travel Time (hr) | 482.7 | 429.8 | 428.1 | 446.9 |
| Total Delay (hr) | 336.7 | 284.5 | 279.3 | 300.2 |
| Total Stops | 9860 | 9422 | 10219 | 9835 |
| Fuel Used (l) | 994.8 | 955.1 | 964.1 | 971.3 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5249 | 5283 | 5430 | 5323 |
| Vehs Exited | 4992 | 5025 | 5137 | 5049 |
| Starting Vehs | 287 | 265 | 280 | 275 |
| Ending Vehs | 544 | 523 | 573 | 544 |
| Travel Distance (km) | 9464 | 9415 | 9606 | 9495 |
| Travel Time (hr) | 482.7 | 429.8 | 428.1 | 446.9 |
| Total Delay (hr) | 336.7 | 284.5 | 279.3 | 300.2 |
| Total Stops | 9860 | 9422 | 10219 | 9835 |
| Fuel Used (l) | 994.8 | 955.1 | 964.1 | 971.3 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | B10 | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | L | T | TR | T | L | T | T | R |
| Maximum Queue (m) | 100.9 | 168.0 | 149.0 | 41.6 | 76.2 | 110.3 | 82.7 | 88.6 | 126.4 | 169.8 | 179.0 | 90.7 |
| Average Queue (m) | 45.0 | 92.7 | 60.3 | 15.8 | 33.2 | 72.3 | 62.2 | 9.6 | 77.9 | 83.9 | 76.5 | 15.6 |
| 95th Queue (m) | 84.6 | 141.2 | 131.9 | 30.7 | 67.8 | 112.6 | 92.4 | 51.3 | 140.5 | 147.2 | 132.3 | 44.3 |
| Link Distance (m) | | 668.2 | 668.2 | 668.2 | | 82.8 | | 341.4 | | 442.5 | 442.5 | |
| Upstream Blk Time (%) | | | | | 0 | 5 | 1 | | | | | |
| Queuing Penalty (veh) | | | | | 0 | 0 | 0 | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 50.0 | | 70.0 | | 95.0 | | | 60.0 |
| Storage Blk Time (%) | | | | | 6 | 21 | 4 | | 13 | 2 | 15 | |
| Queuing Penalty (veh) | | | | | 46 | 111 | 17 | | 42 | 6 | 14 | |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | UL | T | T | R |
| Maximum Queue (m) | 70.0 | 80.9 | 83.5 | 100.5 |
| Average Queue (m) | 35.8 | 42.7 | 44.4 | 36.7 |
| 95th Queue (m) | 64.7 | 73.4 | 74.4 | 74.2 |
| Link Distance (m) | | 434.9 | 434.9 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | | 1 |
| Queuing Penalty (veh) | | | | 2 |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (m) | 32.6 | 59.7 | 63.8 | 34.2 |
| Average Queue (m) | 16.8 | 32.4 | 25.7 | 15.5 |
| 95th Queue (m) | 27.2 | 52.6 | 46.7 | 27.1 |
| Link Distance (m) | 540.8 | 1374.6 | 471.0 | 435.9 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: Airport Road & Old School Road/Healy Road

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | LT | R | LT | R |
| Maximum Queue (m) | 190.1 | 252.5 | 579.2 | 22.5 | 234.6 | 110.0 |
| Average Queue (m) | 93.6 | 216.0 | 531.2 | 7.7 | 187.6 | 35.7 |
| 95th Queue (m) | 173.1 | 297.6 | 724.0 | 24.5 | 287.9 | 118.0 |
| Link Distance (m) | 1374.6 | 236.2 | 575.0 | | 217.9 | |
| Upstream Blk Time (%) | | 67 | 26 | | 43 | |
| Queuing Penalty (veh) | | 0 | 232 | | 0 | |
| Storage Bay Dist (m) | | | | 15.0 | | 50.0 |
| Storage Blk Time (%) | | | 64 | 0 | 67 | |
| Queuing Penalty (veh) | | | 47 | 1 | 31 | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 74.6 | 113.9 | 62.3 | 9.3 | 34.4 | 126.3 | 114.5 | 16.8 | 2.5 | 53.6 | 52.7 | 16.9 |
| Average Queue (m) | 43.8 | 20.9 | 18.9 | 1.5 | 11.8 | 43.8 | 29.9 | 3.1 | 0.2 | 11.9 | 12.8 | 1.9 |
| 95th Queue (m) | 74.4 | 65.9 | 44.8 | 6.3 | 28.7 | 95.5 | 80.0 | 11.2 | 1.9 | 35.9 | 38.1 | 8.6 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 235.2 | 235.2 | |
| Upstream Blk Time (%) | | 0 | | | | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | 7 | | | | | 2 | | | | | | |
| Queuing Penalty (veh) | 7 | | | | | 1 | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | UL | T | T | R |
| Maximum Queue (m) | 9.7 | 21.0 | 36.9 | 54.8 | 48.4 | 104.5 | 71.7 | 25.3 | 27.5 | 53.9 | 65.1 | 9.4 |
| Average Queue (m) | 1.4 | 7.5 | 18.4 | 4.7 | 11.7 | 25.4 | 16.2 | 3.0 | 6.9 | 13.8 | 19.5 | 0.4 |
| 95th Queue (m) | 6.3 | 16.0 | 36.4 | 24.3 | 33.6 | 71.2 | 48.8 | 13.8 | 21.2 | 37.7 | 50.9 | 4.5 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 434.9 | 434.9 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 8 | 0 | 0 | 1 | 0 | | | | 0 | |
| Queuing Penalty (veh) | | | 1 | 0 | 1 | 0 | 0 | | | | 0 | |

## Intersection: 10: Bend

| Movement | EB | EB |
|---|---|---|
| Directions Served | T | |
| Maximum Queue (m) | 24.7 | 10.5 |
| Average Queue (m) | 1.7 | 0.7 |
| 95th Queue (m) | 12.1 | 8.3 |
| Link Distance (m) | 82.8 | 82.8 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | NB |
|---|---|
| Directions Served | T |
| Maximum Queue (m) | 155.3 |
| Average Queue (m) | 117.9 |
| 95th Queue (m) | 217.3 |
| Link Distance (m) | 150.8 |
| Upstream Blk Time (%) | 22 |
| Queuing Penalty (veh) | 201 |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | NB |
|---|---|
| Directions Served | LT |
| Maximum Queue (m) | 163.5 |
| Average Queue (m) | 106.9 |
| 95th Queue (m) | 227.4 |
| Link Distance (m) | 159.4 |
| Upstream Blk Time (%) | 19 |
| Queuing Penalty (veh) | 169 |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | NB | B13 | B13 |
|---|---|---|---|
| Directions Served | T | T | |
| Maximum Queue (m) | 883.0 | 247.9 | 160.5 |
| Average Queue (m) | 356.4 | 48.5 | 30.2 |
| 95th Queue (m) | 1001.7 | 199.6 | 152.9 |
| Link Distance (m) | 930.8 | 235.2 | 235.2 |
| Upstream Blk Time (%) | 20 | 3 | 3 |
| Queuing Penalty (veh) | 177 | 12 | 14 |
| Storage Bay Dist (m) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Network Summary

Network wide Queuing Penalty: 1131

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 4799 | 4677 | 4875 | 4785 |
| Vehs Exited | 4795 | 4702 | 4862 | 4785 |
| Starting Vehs | 209 | 192 | 225 | 202 |
| Ending Vehs | 213 | 167 | 238 | 199 |
| Travel Distance (km) | 8489 | 8280 | 8645 | 8471 |
| Travel Time (hr) | 212.8 | 222.1 | 224.4 | 219.8 |
| Total Delay (hr) | 80.2 | 93.1 | 89.5 | 87.6 |
| Total Stops | 5959 | 5812 | 6193 | 5989 |
| Fuel Used (l) | 717.7 | 717.8 | 741.3 | 725.6 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 4799 | 4677 | 4875 | 4785 |
| Vehs Exited | 4795 | 4702 | 4862 | 4785 |
| Starting Vehs | 209 | 192 | 225 | 202 |
| Ending Vehs | 213 | 167 | 238 | 199 |
| Travel Distance (km) | 8489 | 8280 | 8645 | 8471 |
| Travel Time (hr) | 212.8 | 222.1 | 224.4 | 219.8 |
| Total Delay (hr) | 80.2 | 93.1 | 89.5 | 87.6 |
| Total Stops | 5959 | 5812 | 6193 | 5989 |
| Fuel Used (l) | 717.7 | 717.8 | 741.3 | 725.6 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | B10 | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | UL | T | TR | T | L | T | T | R |
| Maximum Queue (m) | 88.3 | 205.9 | 199.4 | 123.2 | 76.6 | 98.0 | 80.5 | 29.8 | 126.3 | 123.6 | 114.1 | 29.2 |
| Average Queue (m) | 39.9 | 129.3 | 108.8 | 45.2 | 28.1 | 55.4 | 46.4 | 1.6 | 77.3 | 54.8 | 41.4 | 12.3 |
| 95th Queue (m) | 67.2 | 201.2 | 204.4 | 86.4 | 56.6 | 89.6 | 76.0 | 13.8 | 150.8 | 129.0 | 105.4 | 24.1 |
| Link Distance (m) | | 668.2 | 668.2 | 668.2 | | 82.8 | | 341.4 | | 442.5 | 442.5 | |
| Upstream Blk Time (%) | | | | | 0 | 1 | 0 | | | | | |
| Queuing Penalty (veh) | | | | | 0 | 0 | 0 | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 50.0 | | 70.0 | | 95.0 | | | 60.0 |
| Storage Blk Time (%) | | 1 | | | 2 | 10 | 1 | | 20 | 0 | 1 | |
| Queuing Penalty (veh) | | 2 | | | 14 | 41 | 2 | | 38 | 0 | 1 | |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | T | T | R |
| Maximum Queue (m) | 58.8 | 106.3 | 102.8 | 40.8 |
| Average Queue (m) | 24.3 | 60.8 | 65.2 | 18.1 |
| 95th Queue (m) | 47.9 | 92.1 | 95.0 | 33.7 |
| Link Distance (m) | | 434.9 | 434.9 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | 1 | 0 | |
| Queuing Penalty (veh) | | 1 | 1 | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (m) | 36.8 | 31.1 | 21.3 | 48.8 |
| Average Queue (m) | 18.7 | 14.1 | 11.1 | 20.7 |
| 95th Queue (m) | 30.4 | 24.6 | 18.4 | 36.6 |
| Link Distance (m) | 540.8 | 1374.6 | 471.0 | 435.9 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: Airport Road & Old School Road/Healy Road

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | LT | R | LT | R |
| Maximum Queue (m) | 92.8 | 71.6 | 153.3 | 22.6 | 193.3 | 109.1 |
| Average Queue (m) | 50.8 | 33.4 | 39.0 | 9.2 | 116.9 | 9.8 |
| 95th Queue (m) | 85.0 | 55.9 | 121.5 | 24.7 | 222.2 | 54.1 |
| Link Distance (m) | 1374.6 | 236.2 | 575.0 | | 217.9 | |
| Upstream Blk Time (%) | | | | | 7 | |
| Queuing Penalty (veh) | | | | | 0 | |
| Storage Bay Dist (m) | | | | 15.0 | | 50.0 |
| Storage Blk Time (%) | | | 17 | 1 | 31 | |
| Queuing Penalty (veh) | | | 20 | 3 | 12 | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 31.2 | 29.6 | 44.2 | 14.7 | 50.5 | 36.0 | 25.6 | 8.1 | 16.4 | 38.2 | 44.6 | 25.6 |
| Average Queue (m) | 6.6 | 12.0 | 14.0 | 1.2 | 19.1 | 10.9 | 1.7 | 0.9 | 1.6 | 13.5 | 15.1 | 5.9 |
| 95th Queue (m) | 21.6 | 23.8 | 32.4 | 7.0 | 39.9 | 28.7 | 11.0 | 4.8 | 8.3 | 32.4 | 36.0 | 17.8 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 235.2 | 235.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T |
| Maximum Queue (m) | 7.5 | 21.0 | 34.2 | 15.5 | 33.2 | 38.3 | 26.4 | 11.4 | 18.0 | 37.5 | 40.0 |
| Average Queue (m) | 0.2 | 6.8 | 8.5 | 1.7 | 11.6 | 11.3 | 4.0 | 0.7 | 1.4 | 9.7 | 11.2 |
| 95th Queue (m) | 4.1 | 17.9 | 25.2 | 9.5 | 26.4 | 30.5 | 15.1 | 4.9 | 8.4 | 26.2 | 29.0 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 434.9 | 434.9 | | | 415.6 | 415.6 |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | |
| Storage Blk Time (%) | | | 2 | | | | | | | | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | |

## Intersection: 10: Bend

| Movement | EB | EB |
|---|---|---|
| Directions Served | T | |
| Maximum Queue (m) | 57.8 | 5.6 |
| Average Queue (m) | 2.6 | 0.2 |
| 95th Queue (m) | 22.6 | 3.1 |
| Link Distance (m) | 82.8 | 82.8 |
| Upstream Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 0 | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.7 |
| Average Queue (m) | 1.3 |
| 95th Queue (m) | 6.3 |
| Link Distance (m) | 88.5 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (m) | 23.2 | 88.9 | 83.0 |
| Average Queue (m) | 7.0 | 26.0 | 11.1 |
| 95th Queue (m) | 20.0 | 72.6 | 49.3 |
| Link Distance (m) | 96.4 | 159.4 | 150.8 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (m) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 10.5 |
| Average Queue (m) | 1.5 |
| 95th Queue (m) | 7.0 |
| Link Distance (m) | 96.0 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 133

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5463 | 5433 | 5269 | 5387 |
| Vehs Exited | 5107 | 5042 | 5059 | 5070 |
| Starting Vehs | 292 | 318 | 329 | 311 |
| Ending Vehs | 648 | 709 | 539 | 632 |
| Travel Distance (km) | 9564 | 9486 | 9585 | 9545 |
| Travel Time (hr) | 527.9 | 596.2 | 485.1 | 536.4 |
| Total Delay (hr) | 379.2 | 448.9 | 336.9 | 388.3 |
| Total Stops | 10668 | 11085 | 10683 | 10811 |
| Fuel Used (l) | 1049.2 | 1091.4 | 1011.2 | 1050.6 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5463 | 5433 | 5269 | 5387 |
| Vehs Exited | 5107 | 5042 | 5059 | 5070 |
| Starting Vehs | 292 | 318 | 329 | 311 |
| Ending Vehs | 648 | 709 | 539 | 632 |
| Travel Distance (km) | 9564 | 9486 | 9585 | 9545 |
| Travel Time (hr) | 527.9 | 596.2 | 485.1 | 536.4 |
| Total Delay (hr) | 379.2 | 448.9 | 336.9 | 388.3 |
| Total Stops | 10668 | 11085 | 10683 | 10811 |
| Fuel Used (l) | 1049.2 | 1091.4 | 1011.2 | 1050.6 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | B10 | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | R | L | T | TR | T | L | T | T | R |
| Maximum Queue (m) | 105.5 | 180.0 | 164.9 | 42.5 | 82.6 | 113.1 | 82.7 | 107.2 | 136.4 | 148.8 | 117.1 | 118.1 |
| Average Queue (m) | 57.7 | 98.7 | 63.2 | 14.5 | 38.3 | 84.9 | 69.0 | 18.2 | 74.6 | 76.0 | 70.7 | 15.4 |
| 95th Queue (m) | 97.7 | 160.9 | 148.0 | 29.8 | 78.9 | 121.2 | 95.5 | 74.3 | 130.9 | 120.6 | 104.8 | 49.0 |
| Link Distance (m) | | 668.2 | 668.2 | 668.2 | | 82.8 | | 341.4 | | 442.5 | 442.5 | |
| Upstream Blk Time (%) | | | | | 0 | 9 | 2 | | | | | |
| Queuing Penalty (veh) | | | | | 0 | 0 | 0 | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 50.0 | | 70.0 | | 95.0 | | | 60.0 |
| Storage Blk Time (%) | | | | | 6 | 30 | 8 | | 11 | 3 | 17 | |
| Queuing Penalty (veh) | | | | | 44 | 163 | 37 | | 36 | 8 | 16 | |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | UL | T | T | R |
| Maximum Queue (m) | 93.8 | 85.3 | 82.7 | 97.4 |
| Average Queue (m) | 39.7 | 42.4 | 45.6 | 38.5 |
| 95th Queue (m) | 74.1 | 73.2 | 76.8 | 72.1 |
| Link Distance (m) | | 434.9 | 434.9 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | 100.0 | | | 105.0 |
| Storage Blk Time (%) | 0 | | | 0 |
| Queuing Penalty (veh) | 1 | | | 1 |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (m) | 31.5 | 55.2 | 44.0 | 36.8 |
| Average Queue (m) | 16.8 | 33.0 | 22.6 | 16.7 |
| 95th Queue (m) | 27.6 | 50.6 | 37.5 | 29.4 |
| Link Distance (m) | 540.8 | 1374.6 | 471.0 | 435.9 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 4: Airport Road & Old School Road/Healy Road

| Movement | EB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | LT | R | LT | R |
| Maximum Queue (m) | 174.9 | 252.5 | 579.1 | 22.5 | 233.0 | 110.0 |
| Average Queue (m) | 108.4 | 241.4 | 569.2 | 7.1 | 130.7 | 22.0 |
| 95th Queue (m) | 182.4 | 254.3 | 629.8 | 23.0 | 250.8 | 89.6 |
| Link Distance (m) | 1374.6 | 236.2 | 575.0 | | 217.9 | |
| Upstream Blk Time (%) | | 90 | 31 | | 13 | |
| Queuing Penalty (veh) | | 0 | 288 | | 0 | |
| Storage Bay Dist (m) | | | | 15.0 | | 50.0 |
| Storage Blk Time (%) | | | 65 | 0 | 48 | |
| Queuing Penalty (veh) | | | 48 | 2 | 22 | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 74.1 | 103.3 | 44.6 | 9.2 | 165.6 | 314.0 | 308.5 | 147.9 | 4.4 | 51.8 | 53.9 | 16.4 |
| Average Queue (m) | 45.2 | 31.9 | 18.8 | 1.0 | 40.2 | 115.0 | 101.2 | 13.8 | 0.1 | 15.2 | 16.5 | 1.7 |
| 95th Queue (m) | 76.4 | 101.9 | 39.2 | 5.2 | 157.7 | 339.6 | 329.3 | 94.6 | 1.8 | 39.9 | 42.4 | 8.8 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 235.2 | 235.2 | |
| Upstream Blk Time (%) | | 6 | | | | 5 | 4 | | | | | |
| Queuing Penalty (veh) | | 0 | | | | 23 | 18 | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | 17 | 0 | | | | 22 | 20 | | | 0 | | |
| Queuing Penalty (veh) | 15 | 0 | | | | 15 | 5 | | | 0 | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | UL | T | T | R |
| Maximum Queue (m) | 13.8 | 25.6 | 35.8 | 30.6 | 68.2 | 180.7 | 175.1 | 30.0 | 28.3 | 62.0 | 69.4 | 7.8 |
| Average Queue (m) | 2.2 | 8.4 | 19.1 | 4.0 | 11.4 | 34.9 | 28.1 | 2.9 | 5.7 | 16.0 | 20.2 | 0.8 |
| 95th Queue (m) | 9.3 | 18.2 | 34.1 | 16.6 | 39.2 | 103.2 | 92.3 | 14.1 | 17.7 | 42.5 | 49.6 | 5.3 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 434.9 | 434.9 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 4 | 0 | | 4 | 3 | | | | 0 | |
| Queuing Penalty (veh) | | | 0 | 0 | | 1 | 2 | | | | 0 | |

## Intersection: 10: Bend

| Movement | EB | EB |
|---|---|---|
| Directions Served | T | |
| Maximum Queue (m) | 56.5 | 9.4 |
| Average Queue (m) | 3.6 | 0.8 |
| 95th Queue (m) | 24.3 | 8.1 |
| Link Distance (m) | 82.8 | 82.8 |
| Upstream Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 0 | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB | NB |
|---|---|---|
| Directions Served | R | T |
| Maximum Queue (m) | 10.9 | 155.3 |
| Average Queue (m) | 3.5 | 138.3 |
| 95th Queue (m) | 10.6 | 206.9 |
| Link Distance (m) | 88.5 | 150.8 |
| Upstream Blk Time (%) | | 23 |
| Queuing Penalty (veh) | | 219 |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (m) | 39.4 | 164.0 | 127.3 |
| Average Queue (m) | 12.5 | 145.7 | 28.5 |
| 95th Queue (m) | 29.2 | 215.7 | 84.9 |
| Link Distance (m) | 96.4 | 159.4 | 150.8 |
| Upstream Blk Time (%) | | 30 | 0 |
| Queuing Penalty (veh) | | 277 | 0 |
| Storage Bay Dist (m) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB | NB | B13 | B13 |
|---|---|---|---|---|
| Directions Served | R | T | T | |
| Maximum Queue (m) | 8.9 | 965.7 | 244.2 | 245.1 |
| Average Queue (m) | 4.5 | 629.5 | 95.8 | 83.5 |
| 95th Queue (m) | 11.4 | 1237.2 | 282.8 | 265.7 |
| Link Distance (m) | 96.0 | 930.8 | 235.2 | 235.2 |
| Upstream Blk Time (%) | | 38 | 14 | 11 |
| Queuing Penalty (veh) | | 350 | 64 | 51 |
| Storage Bay Dist (m) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Network Summary

Network wide Queuing Penalty: 1708

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5080 | 5131 | 5115 | 5110 |
| Vehs Exited | 5084 | 5161 | 5106 | 5116 |
| Starting Vehs | 200 | 200 | 164 | 186 |
| Ending Vehs | 196 | 170 | 173 | 178 |
| Travel Distance (km) | 7907 | 8116 | 7975 | 8000 |
| Travel Time (hr) | 173.0 | 183.6 | 178.4 | 178.3 |
| Total Delay (hr) | 48.3 | 55.8 | 52.7 | 52.3 |
| Total Stops | 4583 | 4758 | 4709 | 4682 |
| Fuel Used (l) | 634.8 | 652.0 | 637.5 | 641.4 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5080 | 5131 | 5115 | 5110 |
| Vehs Exited | 5084 | 5161 | 5106 | 5116 |
| Starting Vehs | 200 | 200 | 164 | 186 |
| Ending Vehs | 196 | 170 | 173 | 178 |
| Travel Distance (km) | 7907 | 8116 | 7975 | 8000 |
| Travel Time (hr) | 173.0 | 183.6 | 178.4 | 178.3 |
| Total Delay (hr) | 48.3 | 55.8 | 52.7 | 52.3 |
| Total Stops | 4583 | 4758 | 4709 | 4682 |
| Fuel Used (l) | 634.8 | 652.0 | 637.5 | 641.4 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | UL | T | T | T | R | L | T | T |
| Maximum Queue (m) | 105.9 | 81.0 | 98.3 | 131.5 | 56.3 | 83.0 | 71.2 | 45.5 | 21.1 | 112.4 | 103.7 | 92.3 |
| Average Queue (m) | 50.4 | 47.4 | 50.4 | 67.8 | 20.5 | 44.8 | 36.1 | 15.2 | 6.9 | 64.0 | 45.8 | 36.8 |
| 95th Queue (m) | 89.7 | 68.7 | 77.5 | 106.0 | 42.2 | 68.3 | 59.5 | 41.6 | 17.9 | 104.9 | 82.5 | 69.9 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | | | | | | | | | | 5 | 0 | 1 |
| Queuing Penalty (veh) | | | | | | | | | | 10 | 0 | 1 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | L | T | T | R |
| Maximum Queue (m) | 27.9 | 48.8 | 97.2 | 104.9 | 41.0 |
| Average Queue (m) | 12.9 | 21.8 | 62.6 | 67.3 | 18.0 |
| 95th Queue (m) | 25.7 | 41.1 | 92.7 | 97.0 | 33.7 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | 0 | 0 | |
| Queuing Penalty (veh) | | | 0 | 1 | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | T | TR |
| Maximum Queue (m) | 40.1 | 21.7 | 11.7 | 18.0 | 15.8 | 11.4 | 22.9 | 18.8 |
| Average Queue (m) | 21.2 | 10.8 | 2.7 | 7.7 | 5.7 | 1.0 | 13.2 | 10.0 |
| 95th Queue (m) | 35.9 | 17.1 | 8.9 | 12.7 | 13.1 | 6.0 | 19.5 | 16.6 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | 55.0 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 31.0 | 27.1 | 43.5 | 13.0 | 70.0 | 18.7 | 22.5 | 16.4 | 15.2 | 32.9 | 39.1 | 19.1 |
| Average Queue (m) | 6.8 | 11.9 | 13.4 | 1.1 | 23.8 | 3.5 | 7.0 | 2.7 | 1.7 | 12.4 | 15.8 | 3.3 |
| 95th Queue (m) | 20.8 | 23.3 | 32.4 | 5.9 | 47.1 | 12.7 | 19.1 | 10.9 | 8.9 | 28.1 | 35.0 | 11.5 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 10.9 | 27.6 | 27.9 | 21.2 | 34.4 | 39.3 | 30.4 | 11.5 | 14.2 | 33.5 | 40.8 | 1.7 |
| Average Queue (m) | 0.7 | 9.2 | 8.1 | 1.7 | 13.8 | 8.9 | 7.6 | 1.2 | 1.0 | 10.6 | 13.6 | 0.1 |
| 95th Queue (m) | 5.8 | 22.0 | 23.4 | 10.3 | 30.0 | 25.3 | 22.8 | 6.6 | 7.1 | 28.9 | 33.5 | 1.0 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 1 | | | | | | | | | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | | |

## Zone Summary

Zone wide Queuing Penalty: 12

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5778 | 5870 | 5836 | 5829 |
| Vehs Exited | 5771 | 5899 | 5830 | 5834 |
| Starting Vehs | 231 | 216 | 214 | 221 |
| Ending Vehs | 238 | 187 | 220 | 213 |
| Travel Distance (km) | 9543 | 9607 | 9380 | 9510 |
| Travel Time (hr) | 224.0 | 235.0 | 226.8 | 228.6 |
| Total Delay (hr) | 77.0 | 86.5 | 81.1 | 81.5 |
| Total Stops | 5909 | 6130 | 6044 | 6028 |
| Fuel Used (l) | 781.1 | 799.2 | 774.9 | 785.0 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5778 | 5870 | 5836 | 5829 |
| Vehs Exited | 5771 | 5899 | 5830 | 5834 |
| Starting Vehs | 231 | 216 | 214 | 221 |
| Ending Vehs | 238 | 187 | 220 | 213 |
| Travel Distance (km) | 9543 | 9607 | 9380 | 9510 |
| Travel Time (hr) | 224.0 | 235.0 | 226.8 | 228.6 |
| Total Delay (hr) | 77.0 | 86.5 | 81.1 | 81.5 |
| Total Stops | 5909 | 6130 | 6044 | 6028 |
| Fuel Used (l) | 781.1 | 799.2 | 774.9 | 785.0 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | L | T | T | T | R | L | T | T |
| Maximum Queue (m) | 159.0 | 71.1 | 73.9 | 74.0 | 48.7 | 91.9 | 86.0 | 72.9 | 28.2 | 173.2 | 208.5 | 189.0 |
| Average Queue (m) | 85.5 | 45.7 | 44.9 | 43.5 | 20.8 | 62.3 | 55.9 | 39.3 | 7.0 | 124.1 | 105.3 | 83.0 |
| 95th Queue (m) | 147.2 | 66.5 | 67.5 | 66.7 | 40.2 | 87.6 | 79.8 | 66.4 | 20.8 | 186.0 | 180.2 | 145.7 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | | | | | | | | 0 | | 52 | 5 | 20 |
| Queuing Penalty (veh) | | | | | | | | 0 | | 182 | 18 | 19 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | UL | T | T | R |
| Maximum Queue (m) | 60.9 | 82.0 | 91.2 | 88.9 | 66.8 |
| Average Queue (m) | 17.0 | 39.5 | 50.8 | 51.4 | 27.5 |
| 95th Queue (m) | 45.5 | 69.3 | 79.1 | 76.6 | 52.1 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | 0 | 0 | | |
| Queuing Penalty (veh) | | 1 | 0 | | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | T | TR |
| Maximum Queue (m) | 43.0 | 51.2 | 12.6 | 24.2 | 22.1 | 20.4 | 16.2 |
| Average Queue (m) | 18.5 | 27.6 | 6.1 | 13.1 | 10.8 | 11.0 | 9.0 |
| 95th Queue (m) | 32.3 | 44.8 | 13.4 | 20.7 | 18.4 | 17.7 | 15.2 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 62.4 | 47.3 | 48.4 | 9.4 | 52.3 | 58.7 | 65.0 | 14.3 | 4.7 | 44.6 | 41.8 | 15.5 |
| Average Queue (m) | 30.3 | 11.8 | 14.0 | 2.1 | 14.0 | 20.8 | 23.1 | 1.1 | 0.2 | 14.7 | 15.5 | 1.9 |
| 95th Queue (m) | 53.5 | 28.6 | 36.6 | 7.6 | 35.6 | 48.7 | 52.7 | 6.7 | 1.9 | 32.8 | 34.1 | 9.5 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | 2 | 0 | | | | | | | | | | |
| Queuing Penalty (veh) | 2 | 0 | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | UL | T | T | R |
| Maximum Queue (m) | 7.8 | 29.1 | 36.6 | 16.4 | 29.9 | 95.0 | 89.9 | 21.8 | 27.6 | 28.0 | 41.7 | 6.7 |
| Average Queue (m) | 0.8 | 7.9 | 19.1 | 2.3 | 9.5 | 34.8 | 35.9 | 5.6 | 6.0 | 9.3 | 12.1 | 0.3 |
| 95th Queue (m) | 4.6 | 18.4 | 36.9 | 10.3 | 23.2 | 78.8 | 79.0 | 17.7 | 18.4 | 23.1 | 31.5 | 3.1 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 8 | | | 1 | 1 | | | | 0 | |
| Queuing Penalty (veh) | | | 1 | | | 0 | 1 | | | | 0 | |

## Zone Summary

Zone wide Queuing Penalty: 223

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5153 | 5293 | 5222 | 5224 |
| Vehs Exited | 5177 | 5284 | 5242 | 5236 |
| Starting Vehs | 180 | 184 | 197 | 184 |
| Ending Vehs | 156 | 193 | 177 | 169 |
| Travel Distance (km) | 8153 | 8298 | 8266 | 8239 |
| Travel Time (hr) | 178.2 | 190.7 | 200.9 | 189.9 |
| Total Delay (hr) | 50.0 | 60.2 | 71.7 | 60.7 |
| Total Stops | 4654 | 5016 | 5115 | 4927 |
| Fuel Used (l) | 654.4 | 678.4 | 681.8 | 671.5 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5153 | 5293 | 5222 | 5224 |
| Vehs Exited | 5177 | 5284 | 5242 | 5236 |
| Starting Vehs | 180 | 184 | 197 | 184 |
| Ending Vehs | 156 | 193 | 177 | 169 |
| Travel Distance (km) | 8153 | 8298 | 8266 | 8239 |
| Travel Time (hr) | 178.2 | 190.7 | 200.9 | 189.9 |
| Total Delay (hr) | 50.0 | 60.2 | 71.7 | 60.7 |
| Total Stops | 4654 | 5016 | 5115 | 4927 |
| Fuel Used (l) | 654.4 | 678.4 | 681.8 | 671.5 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | UL | T | T | T | R | L | T | T |
| Maximum Queue (m) | 106.8 | 91.0 | 102.9 | 118.4 | 46.0 | 77.5 | 66.1 | 60.0 | 30.2 | 133.0 | 166.2 | 156.1 |
| Average Queue (m) | 48.1 | 47.1 | 52.1 | 69.1 | 18.2 | 44.1 | 35.2 | 13.8 | 6.8 | 87.1 | 73.7 | 57.7 |
| 95th Queue (m) | 87.6 | 70.3 | 80.1 | 102.3 | 38.9 | 68.1 | 58.7 | 41.7 | 21.6 | 170.4 | 178.8 | 154.5 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | | | | | | | | 0 | | 31 | 3 | 2 |
| Queuing Penalty (veh) | | | | | | | | 0 | | 62 | 9 | 2 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | L | T | T | R |
| Maximum Queue (m) | 38.5 | 57.8 | 107.9 | 120.8 | 50.4 |
| Average Queue (m) | 13.1 | 23.8 | 67.3 | 70.8 | 19.4 |
| 95th Queue (m) | 26.6 | 45.1 | 102.5 | 107.8 | 37.9 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | 1 | 1 | |
| Queuing Penalty (veh) | | | 1 | 2 | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | T | TR |
| Maximum Queue (m) | 36.9 | 21.1 | 12.8 | 18.7 | 14.0 | 7.5 | 23.0 | 17.1 |
| Average Queue (m) | 20.9 | 11.0 | 2.4 | 8.4 | 5.6 | 0.6 | 12.1 | 9.5 |
| 95th Queue (m) | 32.2 | 17.0 | 9.3 | 14.1 | 11.5 | 3.8 | 19.9 | 16.1 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | 55.0 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 32.0 | 31.1 | 55.5 | 13.9 | 53.4 | 23.7 | 25.2 | 15.8 | 14.5 | 62.5 | 68.4 | 21.9 |
| Average Queue (m) | 6.5 | 11.7 | 18.8 | 1.3 | 18.1 | 4.0 | 9.2 | 2.1 | 1.1 | 17.4 | 21.9 | 5.1 |
| 95th Queue (m) | 19.7 | 23.5 | 41.3 | 7.3 | 39.7 | 14.1 | 22.3 | 8.8 | 6.5 | 42.2 | 49.5 | 15.2 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | | | | | | | | | | 0 | | |
| Queuing Penalty (veh) | | | | | | | | | | 0 | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 5.0 | 25.7 | 35.9 | 26.4 | 44.9 | 27.7 | 28.4 | 9.6 | 14.9 | 38.8 | 49.7 | 3.4 |
| Average Queue (m) | 0.3 | 7.1 | 8.4 | 2.6 | 13.1 | 7.1 | 6.9 | 0.8 | 1.4 | 11.8 | 16.7 | 0.2 |
| 95th Queue (m) | 3.5 | 19.6 | 25.3 | 13.9 | 32.9 | 20.9 | 20.8 | 5.6 | 7.7 | 30.9 | 39.3 | 1.5 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 3 | | | | | | | | 0 | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | 0 | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.7 |
| Average Queue (m) | 1.0 |
| 95th Queue (m) | 5.5 |
| Link Distance (m) | 84.8 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LR | L | T | T | T | TR |
| Maximum Queue (m) | 35.6 | 21.0 | 28.5 | 31.9 | 37.2 | 41.7 |
| Average Queue (m) | 8.9 | 6.3 | 4.5 | 7.7 | 9.6 | 8.5 |
| 95th Queue (m) | 23.6 | 16.9 | 18.5 | 24.7 | 29.1 | 28.0 |
| Link Distance (m) | 91.0 | | 159.3 | 159.3 | 151.1 | 151.1 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (m) | | 55.0 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.9 |
| Average Queue (m) | 2.0 |
| 95th Queue (m) | 7.8 |
| Link Distance (m) | 90.4 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 76

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 6032 | 6007 | 5901 | 5978 |
| Vehs Exited | 6014 | 5866 | 5869 | 5916 |
| Starting Vehs | 247 | 198 | 211 | 221 |
| Ending Vehs | 265 | 339 | 243 | 280 |
| Travel Distance (km) | 9776 | 9580 | 9361 | 9573 |
| Travel Time (hr) | 247.9 | 352.8 | 225.5 | 275.4 |
| Total Delay (hr) | 96.3 | 204.0 | 80.2 | 126.8 |
| Total Stops | 6625 | 7499 | 6097 | 6741 |
| Fuel Used (l) | 826.8 | 909.8 | 784.3 | 840.3 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 6032 | 6007 | 5901 | 5978 |
| Vehs Exited | 6014 | 5866 | 5869 | 5916 |
| Starting Vehs | 247 | 198 | 211 | 221 |
| Ending Vehs | 265 | 339 | 243 | 280 |
| Travel Distance (km) | 9776 | 9580 | 9361 | 9573 |
| Travel Time (hr) | 247.9 | 352.8 | 225.5 | 275.4 |
| Total Delay (hr) | 96.3 | 204.0 | 80.2 | 126.8 |
| Total Stops | 6625 | 7499 | 6097 | 6741 |
| Fuel Used (l) | 826.8 | 909.8 | 784.3 | 840.3 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | L | T | T | T | R | L | T | T |
| Maximum Queue (m) | 213.2 | 170.3 | 159.6 | 150.8 | 46.2 | 105.8 | 89.4 | 66.6 | 31.6 | 174.9 | 324.4 | 324.8 |
| Average Queue (m) | 117.5 | 72.1 | 71.3 | 56.0 | 19.9 | 65.2 | 57.8 | 40.1 | 8.9 | 140.3 | 209.9 | 198.7 |
| 95th Queue (m) | 242.6 | 194.2 | 179.9 | 121.4 | 39.0 | 90.6 | 80.9 | 67.8 | 23.7 | 202.6 | 464.0 | 457.3 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | 19 | 13 |
| Queuing Penalty (veh) | | | | | | | | | | | 0 | 0 |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | 14 | 3 | | | | | | 1 | | 64 | 18 | 33 |
| Queuing Penalty (veh) | 30 | 10 | | | | | | 0 | | 226 | 63 | 32 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | UL | T | T | R |
| Maximum Queue (m) | 119.0 | 91.1 | 85.9 | 77.0 | 69.2 |
| Average Queue (m) | 29.6 | 39.7 | 50.0 | 50.7 | 29.3 |
| 95th Queue (m) | 96.7 | 77.1 | 74.9 | 73.2 | 54.6 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | 0 | | |
| Queuing Penalty (veh) | | | 0 | | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | T | TR |
| Maximum Queue (m) | 44.7 | 58.8 | 14.6 | 24.8 | 26.7 | 23.1 | 20.6 |
| Average Queue (m) | 19.1 | 25.3 | 6.5 | 12.2 | 11.4 | 10.5 | 9.4 |
| 95th Queue (m) | 34.3 | 44.1 | 12.7 | 19.8 | 19.8 | 17.7 | 16.5 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 58.9 | 31.0 | 40.3 | 7.2 | 41.2 | 71.4 | 81.9 | 8.8 | 6.1 | 53.7 | 51.9 | 20.2 |
| Average Queue (m) | 27.7 | 12.6 | 14.0 | 1.5 | 16.4 | 18.0 | 20.3 | 1.0 | 0.3 | 17.5 | 21.4 | 3.7 |
| 95th Queue (m) | 46.8 | 26.4 | 35.0 | 6.1 | 37.5 | 45.6 | 51.9 | 6.2 | 3.6 | 39.6 | 42.9 | 14.3 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | 1 | | | | | | | | | | | |
| Queuing Penalty (veh) | 1 | | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | UL | T | T | R |
| Maximum Queue (m) | 10.0 | 27.4 | 35.4 | 45.3 | 31.5 | 69.2 | 76.7 | 19.0 | 40.3 | 38.6 | 38.8 | 10.0 |
| Average Queue (m) | 1.5 | 9.5 | 18.1 | 4.1 | 9.1 | 30.6 | 32.1 | 4.9 | 8.9 | 10.6 | 14.6 | 0.7 |
| 95th Queue (m) | 6.5 | 21.6 | 34.0 | 20.8 | 23.7 | 65.3 | 67.7 | 16.3 | 26.3 | 27.5 | 35.3 | 5.7 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 5 | | | 0 | 0 | | | | 0 | |
| Queuing Penalty (veh) | | | 0 | | | 0 | 0 | | | | 0 | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 9.0 |
| Average Queue (m) | 2.6 |
| 95th Queue (m) | 9.0 |
| Link Distance (m) | 84.8 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LR | L | T | T | T | TR |
| Maximum Queue (m) | 36.5 | 30.1 | 58.2 | 66.4 | 31.3 | 37.1 |
| Average Queue (m) | 15.6 | 3.0 | 14.1 | 17.6 | 11.8 | 8.0 |
| 95th Queue (m) | 29.2 | 15.9 | 38.8 | 44.3 | 26.6 | 24.5 |
| Link Distance (m) | 91.0 | | 159.3 | 159.3 | 151.1 | 151.1 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (m) | | 55.0 | | | | |
| Storage Blk Time (%) | | | 0 | | | |
| Queuing Penalty (veh) | | | 0 | | | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 9.0 |
| Average Queue (m) | 4.2 |
| 95th Queue (m) | 10.9 |
| Link Distance (m) | 90.4 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 364

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5256 | 5252 | 5134 | 5213 |
| Vehs Exited | 5260 | 5221 | 5166 | 5216 |
| Starting Vehs | 211 | 160 | 192 | 188 |
| Ending Vehs | 207 | 191 | 160 | 183 |
| Travel Distance (km) | 8190 | 8185 | 8145 | 8174 |
| Travel Time (hr) | 187.6 | 185.1 | 178.7 | 183.8 |
| Total Delay (hr) | 58.7 | 56.6 | 51.3 | 55.5 |
| Total Stops | 4331 | 4231 | 4127 | 4229 |
| Fuel Used (l) | 651.0 | 653.3 | 643.1 | 649.1 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5256 | 5252 | 5134 | 5213 |
| Vehs Exited | 5260 | 5221 | 5166 | 5216 |
| Starting Vehs | 211 | 160 | 192 | 188 |
| Ending Vehs | 207 | 191 | 160 | 183 |
| Travel Distance (km) | 8190 | 8185 | 8145 | 8174 |
| Travel Time (hr) | 187.6 | 185.1 | 178.7 | 183.8 |
| Total Delay (hr) | 58.7 | 56.6 | 51.3 | 55.5 |
| Total Stops | 4331 | 4231 | 4127 | 4229 |
| Fuel Used (l) | 651.0 | 653.3 | 643.1 | 649.1 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | UL | T | T | T | R | L | T | T |
| Maximum Queue (m) | 113.1 | 81.0 | 81.6 | 122.9 | 50.2 | 78.8 | 73.0 | 49.4 | 22.4 | 118.4 | 93.1 | 70.9 |
| Average Queue (m) | 49.3 | 49.7 | 51.5 | 70.9 | 20.2 | 42.8 | 34.7 | 11.7 | 6.3 | 65.4 | 41.2 | 35.7 |
| 95th Queue (m) | 88.4 | 72.7 | 76.7 | 106.2 | 40.5 | 65.3 | 61.6 | 36.8 | 17.3 | 110.8 | 75.2 | 65.5 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | | | | | | | | 0 | | 7 | 0 | 1 |
| Queuing Penalty (veh) | | | | | | | | 0 | | 14 | 0 | 1 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | L | T | T | R |
| Maximum Queue (m) | 27.9 | 69.2 | 111.6 | 108.1 | 42.7 |
| Average Queue (m) | 12.7 | 24.8 | 67.3 | 70.5 | 18.5 |
| 95th Queue (m) | 24.9 | 52.4 | 100.6 | 102.0 | 32.5 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | 1 | 1 | |
| Queuing Penalty (veh) | | | 1 | 1 | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | T | TR |
| Maximum Queue (m) | 79.4 | 45.2 | 18.2 | 24.5 | 20.6 | 9.5 | 49.4 | 38.1 |
| Average Queue (m) | 43.0 | 17.3 | 2.7 | 8.0 | 3.2 | 0.5 | 22.2 | 12.3 |
| 95th Queue (m) | 69.6 | 33.3 | 10.6 | 18.2 | 11.5 | 4.1 | 40.1 | 28.7 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | 55.0 | | |
| Storage Blk Time (%) | | | | | | | 0 | |
| Queuing Penalty (veh) | | | | | | | 0 | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 21.4 | 32.1 | 65.6 | 8.8 | 44.9 | 21.2 | 28.0 | 14.5 | 11.5 | 41.0 | 44.5 | 19.3 |
| Average Queue (m) | 5.2 | 12.6 | 15.9 | 0.7 | 18.8 | 3.6 | 7.4 | 2.1 | 0.8 | 14.1 | 15.0 | 4.6 |
| 95th Queue (m) | 15.1 | 25.3 | 44.0 | 4.6 | 36.9 | 12.9 | 21.1 | 9.1 | 5.6 | 33.2 | 34.7 | 14.0 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | | | 0 | | | | | | | | | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 13.7 | 29.7 | 34.7 | 29.6 | 47.5 | 31.1 | 24.9 | 15.5 | 10.3 | 35.1 | 51.0 | 3.3 |
| Average Queue (m) | 1.0 | 8.8 | 7.8 | 1.9 | 12.8 | 7.9 | 6.8 | 1.8 | 1.4 | 9.5 | 12.9 | 0.2 |
| 95th Queue (m) | 7.7 | 22.4 | 24.1 | 13.7 | 29.5 | 21.0 | 20.0 | 8.2 | 7.9 | 25.6 | 35.4 | 1.7 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 2 | | | | | | | | 0 | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | 0 | |

## Zone Summary

Zone wide Queuing Penalty: 18

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 6055 | 5957 | 5997 | 6001 |
| Vehs Exited | 6052 | 5920 | 6003 | 5993 |
| Starting Vehs | 215 | 198 | 253 | 221 |
| Ending Vehs | 218 | 235 | 247 | 232 |
| Travel Distance (km) | 9902 | 9564 | 9664 | 9710 |
| Travel Time (hr) | 227.5 | 258.8 | 262.4 | 249.6 |
| Total Delay (hr) | 74.7 | 110.5 | 112.8 | 99.3 |
| Total Stops | 5341 | 5555 | 6067 | 5651 |
| Fuel Used (l) | 801.8 | 808.8 | 824.8 | 811.8 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 6055 | 5957 | 5997 | 6001 |
| Vehs Exited | 6052 | 5920 | 6003 | 5993 |
| Starting Vehs | 215 | 198 | 253 | 221 |
| Ending Vehs | 218 | 235 | 247 | 232 |
| Travel Distance (km) | 9902 | 9564 | 9664 | 9710 |
| Travel Time (hr) | 227.5 | 258.8 | 262.4 | 249.6 |
| Total Delay (hr) | 74.7 | 110.5 | 112.8 | 99.3 |
| Total Stops | 5341 | 5555 | 6067 | 5651 |
| Fuel Used (l) | 801.8 | 808.8 | 824.8 | 811.8 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | L | T | T | T | R | L | T | T |
| Maximum Queue (m) | 184.8 | 99.9 | 106.6 | 90.8 | 45.6 | 105.4 | 95.3 | 76.5 | 34.3 | 156.8 | 342.3 | 346.8 |
| Average Queue (m) | 84.0 | 45.8 | 45.1 | 43.0 | 20.7 | 65.6 | 58.4 | 38.8 | 10.0 | 129.2 | 241.9 | 230.8 |
| 95th Queue (m) | 163.3 | 80.7 | 78.5 | 76.0 | 39.9 | 92.5 | 85.2 | 64.8 | 26.4 | 223.1 | 500.0 | 477.2 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | 9 | 6 |
| Queuing Penalty (veh) | | | | | | | | | | | 0 | 0 |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | 1 | | | | | | | 0 | | 55 | 4 | 23 |
| Queuing Penalty (veh) | 3 | | | | | | | 0 | | 199 | 15 | 22 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | UL | T | T | R |
| Maximum Queue (m) | 58.0 | 61.4 | 78.8 | 73.6 | 75.4 |
| Average Queue (m) | 19.2 | 32.9 | 46.4 | 47.1 | 33.1 |
| 95th Queue (m) | 57.2 | 55.0 | 70.6 | 70.1 | 59.1 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | T | TR |
| Maximum Queue (m) | 73.6 | 92.0 | 14.4 | 42.6 | 35.2 | 4.2 | 31.7 | 28.3 |
| Average Queue (m) | 38.9 | 47.7 | 6.0 | 22.4 | 16.4 | 0.1 | 16.2 | 10.4 |
| 95th Queue (m) | 66.0 | 76.7 | 13.8 | 36.3 | 31.4 | 2.3 | 30.1 | 22.9 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | 55.0 | | |
| Storage Blk Time (%) | | | | 0 | | | | |
| Queuing Penalty (veh) | | | | 0 | | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 59.5 | 56.9 | 41.9 | 7.2 | 42.9 | 77.6 | 67.6 | 18.0 | 4.6 | 40.9 | 46.9 | 19.3 |
| Average Queue (m) | 29.7 | 13.7 | 13.0 | 1.6 | 14.5 | 20.8 | 22.7 | 2.7 | 0.3 | 12.2 | 15.8 | 2.9 |
| 95th Queue (m) | 54.0 | 33.6 | 31.3 | 6.4 | 33.3 | 53.7 | 52.3 | 11.4 | 2.4 | 28.9 | 36.2 | 12.7 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | 1 | 0 | | | | | | | | | | |
| Queuing Penalty (veh) | 1 | 0 | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | UL | T | T | R |
| Maximum Queue (m) | 14.2 | 19.5 | 35.3 | 33.1 | 37.8 | 104.6 | 96.2 | 55.6 | 23.0 | 29.6 | 36.8 | 7.5 |
| Average Queue (m) | 1.9 | 7.9 | 16.0 | 3.2 | 10.3 | 37.5 | 37.5 | 6.1 | 7.2 | 9.4 | 13.5 | 0.3 |
| 95th Queue (m) | 8.2 | 16.6 | 32.1 | 19.3 | 25.6 | 89.2 | 84.1 | 28.6 | 19.0 | 23.1 | 30.4 | 3.2 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 4 | | | 1 | 2 | | | | | |
| Queuing Penalty (veh) | | | 0 | | | 1 | 1 | | | | | |

## Zone Summary

Zone wide Queuing Penalty: 242

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 5366 | 5339 | 5267 | 5324 |
| Vehs Exited | 5413 | 5364 | 5257 | 5345 |
| Starting Vehs | 236 | 207 | 187 | 204 |
| Ending Vehs | 189 | 182 | 197 | 187 |
| Travel Distance (km) | 8471 | 8252 | 8066 | 8263 |
| Travel Time (hr) | 205.6 | 192.9 | 182.6 | 193.7 |
| Total Delay (hr) | 72.4 | 62.9 | 55.7 | 63.7 |
| Total Stops | 4786 | 4554 | 4255 | 4533 |
| Fuel Used (l) | 693.9 | 669.0 | 648.2 | 670.4 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 5366 | 5339 | 5267 | 5324 |
| Vehs Exited | 5413 | 5364 | 5257 | 5345 |
| Starting Vehs | 236 | 207 | 187 | 204 |
| Ending Vehs | 189 | 182 | 197 | 187 |
| Travel Distance (km) | 8471 | 8252 | 8066 | 8263 |
| Travel Time (hr) | 205.6 | 192.9 | 182.6 | 193.7 |
| Total Delay (hr) | 72.4 | 62.9 | 55.7 | 63.7 |
| Total Stops | 4786 | 4554 | 4255 | 4533 |
| Fuel Used (l) | 693.9 | 669.0 | 648.2 | 670.4 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | UL | T | T | T | R | L | T | T |
| Maximum Queue (m) | 137.3 | 112.4 | 152.8 | 143.2 | 48.3 | 65.6 | 65.0 | 51.3 | 21.8 | 146.0 | 158.9 | 112.5 |
| Average Queue (m) | 58.5 | 52.1 | 56.8 | 73.7 | 18.8 | 45.3 | 37.8 | 14.0 | 6.2 | 89.7 | 66.4 | 43.9 |
| 95th Queue (m) | 122.0 | 87.4 | 98.3 | 116.3 | 38.6 | 61.3 | 59.1 | 41.2 | 18.0 | 157.7 | 148.6 | 106.3 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | | | | | | | | 0 | | 29 | 4 | 1 |
| Queuing Penalty (veh) | | | | | | | | 0 | | 59 | 10 | 1 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | L | T | T | R |
| Maximum Queue (m) | 26.5 | 59.5 | 109.3 | 109.3 | 55.0 |
| Average Queue (m) | 11.6 | 23.4 | 67.0 | 70.4 | 21.3 |
| 95th Queue (m) | 24.7 | 46.8 | 97.2 | 100.5 | 41.3 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | | 0 | 0 | |
| Queuing Penalty (veh) | | | 0 | 1 | |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | T | TR |
| Maximum Queue (m) | 79.8 | 35.0 | 13.1 | 19.7 | 14.6 | 12.4 | 41.7 | 37.5 |
| Average Queue (m) | 40.1 | 16.5 | 1.9 | 9.0 | 3.4 | 0.7 | 21.8 | 10.8 |
| 95th Queue (m) | 65.4 | 30.2 | 8.2 | 18.4 | 9.9 | 5.8 | 36.3 | 25.3 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | 55.0 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 25.0 | 60.0 | 53.0 | 12.8 | 88.8 | 21.2 | 29.6 | 13.2 | 18.5 | 42.0 | 41.8 | 19.8 |
| Average Queue (m) | 7.0 | 13.9 | 15.5 | 0.7 | 21.6 | 5.3 | 9.7 | 2.1 | 1.7 | 16.2 | 20.5 | 3.6 |
| 95th Queue (m) | 20.2 | 32.5 | 38.4 | 5.0 | 50.3 | 15.8 | 23.0 | 8.9 | 9.2 | 36.6 | 42.2 | 13.1 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | | 1 | | | | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | |
| Maximum Queue (m) | 15.7 | 31.0 | 32.8 | 14.4 | 44.6 | 41.6 | 35.6 | 9.8 | 16.6 | 48.1 | 43.0 | |
| Average Queue (m) | 1.0 | 9.8 | 8.3 | 1.8 | 14.8 | 10.4 | 8.7 | 1.1 | 0.8 | 11.0 | 15.4 | |
| 95th Queue (m) | 7.1 | 25.0 | 23.8 | 9.6 | 32.6 | 28.1 | 25.4 | 6.1 | 6.6 | 31.5 | 36.7 | |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | |
| Storage Blk Time (%) | | | 2 | | | | | | | | 0 | |
| Queuing Penalty (veh) | | | 0 | | | | | | | | 0 | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.6 |
| Average Queue (m) | 0.9 |
| 95th Queue (m) | 5.0 |
| Link Distance (m) | 84.8 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LR | L | T | T | T | TR |
| Maximum Queue (m) | 28.2 | 15.6 | 26.0 | 32.4 | 30.4 | 27.7 |
| Average Queue (m) | 6.2 | 5.2 | 3.8 | 5.4 | 5.8 | 4.7 |
| 95th Queue (m) | 20.1 | 13.5 | 16.2 | 21.2 | 22.1 | 18.2 |
| Link Distance (m) | 91.0 | | 159.3 | 159.3 | 151.1 | 151.1 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (m) | | 55.0 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.5 |
| Average Queue (m) | 2.0 |
| 95th Queue (m) | 7.7 |
| Link Distance (m) | 90.4 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 72

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 6101 | 6170 | 6093 | 6125 |
| Vehs Exited | 6092 | 6143 | 6094 | 6110 |
| Starting Vehs | 262 | 243 | 247 | 248 |
| Ending Vehs | 271 | 270 | 246 | 262 |
| Travel Distance (km) | 9836 | 9876 | 9822 | 9844 |
| Travel Time (hr) | 252.4 | 271.1 | 243.4 | 255.6 |
| Total Delay (hr) | 100.1 | 118.0 | 90.7 | 102.9 |
| Total Stops | 6082 | 6406 | 5911 | 6133 |
| Fuel Used (l) | 831.4 | 851.3 | 819.4 | 834.0 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 6101 | 6170 | 6093 | 6125 |
| Vehs Exited | 6092 | 6143 | 6094 | 6110 |
| Starting Vehs | 262 | 243 | 247 | 248 |
| Ending Vehs | 271 | 270 | 246 | 262 |
| Travel Distance (km) | 9836 | 9876 | 9822 | 9844 |
| Travel Time (hr) | 252.4 | 271.1 | 243.4 | 255.6 |
| Total Delay (hr) | 100.1 | 118.0 | 90.7 | 102.9 |
| Total Stops | 6082 | 6406 | 5911 | 6133 |
| Fuel Used (l) | 831.4 | 851.3 | 819.4 | 834.0 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | TR | L | T | T | T | R | L | T | T |
| Maximum Queue (m) | 225.1 | 176.1 | 167.4 | 96.1 | 42.8 | 103.0 | 93.2 | 68.4 | 35.7 | 174.8 | 286.0 | 251.8 |
| Average Queue (m) | 150.5 | 95.9 | 92.6 | 48.4 | 20.4 | 67.6 | 59.9 | 39.7 | 8.9 | 132.6 | 138.8 | 117.3 |
| 95th Queue (m) | 280.2 | 259.4 | 244.0 | 84.5 | 36.4 | 92.6 | 86.4 | 69.5 | 23.8 | 196.5 | 286.1 | 252.9 |
| Link Distance (m) | | 668.3 | 668.3 | 668.3 | | 396.8 | 396.8 | 396.8 | | | 438.6 | 438.6 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | 200.0 | | | | 165.0 | | | | 60.0 | 95.0 | | |
| Storage Blk Time (%) | 21 | 2 | | | | | | 1 | | 58 | 4 | 21 |
| Queuing Penalty (veh) | 47 | 5 | | | | | | 0 | | 210 | 14 | 20 |

## Intersection: 1: Airport Road & Mayfield Road

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | R | UL | T | T | R |
| Maximum Queue (m) | 89.1 | 86.3 | 91.5 | 86.6 | 88.8 |
| Average Queue (m) | 16.5 | 38.7 | 49.9 | 52.6 | 33.0 |
| 95th Queue (m) | 51.0 | 75.0 | 76.7 | 77.4 | 62.5 |
| Link Distance (m) | | | 429.0 | 429.0 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (m) | 60.0 | 100.0 | | | 105.0 |
| Storage Blk Time (%) | | 1 | 0 | | 0 |
| Queuing Penalty (veh) | | 2 | 0 | | 0 |

## Intersection: 3: Torbram Road & Old School Road

| Movement | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | T | TR |
| Maximum Queue (m) | 79.1 | 78.4 | 22.4 | 49.7 | 46.2 | 31.3 | 22.2 |
| Average Queue (m) | 35.9 | 44.4 | 6.5 | 23.9 | 16.2 | 15.6 | 8.4 |
| 95th Queue (m) | 60.0 | 71.0 | 16.3 | 41.3 | 33.6 | 27.9 | 18.0 |
| Link Distance (m) | 535.4 | 533.7 | | 470.4 | 470.4 | 435.8 | 435.8 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (m) | | | 55.0 | | | | |
| Storage Blk Time (%) | | | | 0 | | | |
| Queuing Penalty (veh) | | | | 0 | | | |

## Intersection: 5: Airport Road & Alban Road/12333 Airport Road

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | L | T | T | R |
| Maximum Queue (m) | 65.9 | 63.8 | 49.8 | 7.0 | 54.0 | 58.2 | 65.8 | 14.0 | 8.8 | 54.7 | 56.6 | 18.4 |
| Average Queue (m) | 28.6 | 13.4 | 13.8 | 1.4 | 19.2 | 21.3 | 23.7 | 1.3 | 0.4 | 19.0 | 22.0 | 3.9 |
| 95th Queue (m) | 53.2 | 36.3 | 33.6 | 5.7 | 41.5 | 47.5 | 52.5 | 7.4 | 3.3 | 41.6 | 46.1 | 14.2 |
| Link Distance (m) | | 130.1 | 225.3 | | | 415.6 | 415.6 | | | 1182.2 | 1182.2 | |
| Upstream Blk Time (%) | | 0 | | | | | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | | | | | |
| Storage Bay Dist (m) | 55.0 | | | 100.0 | 120.0 | | | 145.0 | 75.0 | | | 100.0 |
| Storage Blk Time (%) | 1 | | | | | | | | | | | |
| Queuing Penalty (veh) | 1 | | | | | | | | | | | |

## Intersection: 6: Airport Road & Perdue Court/Davis Lane

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | UL | T | T | R | UL | T | T | R |
| Maximum Queue (m) | 10.0 | 19.9 | 36.9 | 56.5 | 34.2 | 98.7 | 99.0 | 22.4 | 26.6 | 38.4 | 28.2 | 11.1 |
| Average Queue (m) | 1.1 | 8.0 | 18.7 | 5.0 | 10.5 | 33.2 | 34.6 | 3.2 | 7.4 | 9.0 | 10.4 | 0.8 |
| 95th Queue (m) | 5.8 | 16.4 | 34.6 | 25.7 | 28.0 | 77.8 | 78.2 | 13.6 | 21.3 | 24.5 | 24.2 | 5.3 |
| Link Distance (m) | 94.2 | 94.2 | | 114.1 | | 429.0 | 429.0 | | | 415.6 | 415.6 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (m) | | | 30.0 | | 70.0 | | | 65.0 | 70.0 | | | 60.0 |
| Storage Blk Time (%) | | | 7 | | | 1 | 1 | | | | | |
| Queuing Penalty (veh) | | | 1 | | | 0 | 1 | | | | | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 9.0 |
| Average Queue (m) | 2.2 |
| 95th Queue (m) | 8.2 |
| Link Distance (m) | 84.8 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LR | L | T | T | T | TR |
| Maximum Queue (m) | 40.8 | 11.6 | 50.8 | 45.0 | 37.7 | 39.1 |
| Average Queue (m) | 14.5 | 1.4 | 13.1 | 15.6 | 11.7 | 7.0 |
| 95th Queue (m) | 31.4 | 6.7 | 36.5 | 38.5 | 28.7 | 23.4 |
| Link Distance (m) | 91.0 | | 159.3 | 159.3 | 151.1 | 151.1 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (m) | | 55.0 | | | | |
| Storage Blk Time (%) | | | 0 | | | |
| Queuing Penalty (veh) | | | 0 | | | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 9.0 |
| Average Queue (m) | 4.7 |
| 95th Queue (m) | 11.4 |
| Link Distance (m) | 90.4 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 302

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 2777 | 2854 | 2918 | 2850 |
| Vehs Exited | 2767 | 2847 | 2904 | 2839 |
| Starting Vehs | 77 | 92 | 67 | 79 |
| Ending Vehs | 87 | 99 | 81 | 89 |
| Travel Distance (km) | 2740 | 2840 | 2851 | 2810 |
| Travel Time (hr) | 89.4 | 108.2 | 92.9 | 96.8 |
| Total Delay (hr) | 48.3 | 65.8 | 49.9 | 54.7 |
| Total Stops | 1650 | 1649 | 1747 | 1681 |
| Fuel Used (l) | 254.7 | 272.0 | 266.7 | 264.5 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 2777 | 2854 | 2918 | 2850 |
| Vehs Exited | 2767 | 2847 | 2904 | 2839 |
| Starting Vehs | 77 | 92 | 67 | 79 |
| Ending Vehs | 87 | 99 | 81 | 89 |
| Travel Distance (km) | 2740 | 2840 | 2851 | 2810 |
| Travel Time (hr) | 89.4 | 108.2 | 92.9 | 96.8 |
| Total Delay (hr) | 48.3 | 65.8 | 49.9 | 54.7 |
| Total Stops | 1650 | 1649 | 1747 | 1681 |
| Fuel Used (l) | 254.7 | 272.0 | 266.7 | 264.5 |

## Intersection: 13: Airport Road & E-W Collector Road

| Movement | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | T | R | L | T | TR | L | T | TR |
| Maximum Queue (m) | 62.4 | 346.7 | 61.8 | 124.0 | 51.6 | 68.1 | 84.3 | 94.6 | 87.4 | 115.3 | 106.4 |
| Average Queue (m) | 61.8 | 312.4 | 30.3 | 13.5 | 25.5 | 27.6 | 32.8 | 35.9 | 54.8 | 34.9 | 31.0 |
| 95th Queue (m) | 63.8 | 395.8 | 60.0 | 75.1 | 43.4 | 60.2 | 67.2 | 74.9 | 92.2 | 92.8 | 68.9 |
| Link Distance (m) | | 328.6 | | 178.8 | | | 526.5 | 526.5 | | 109.6 | 109.6 |
| Upstream Blk Time (%) | | 60 | | | | | | | | 1 | 0 |
| Queuing Penalty (veh) | | 0 | | | | | | | | 11 | 0 |
| Storage Bay Dist (m) | 55.0 | | 55.0 | | 55.0 | 80.0 | | | 80.0 | | |
| Storage Blk Time (%) | 90 | 11 | 8 | 0 | 1 | 1 | 0 | | 7 | 0 | |
| Queuing Penalty (veh) | 40 | 14 | 13 | 0 | 0 | 1 | 0 | | 24 | 0 | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB | SB |
|---|---|---|
| Directions Served | R | T |
| Maximum Queue (m) | 8.1 | 10.0 |
| Average Queue (m) | 0.5 | 0.5 |
| 95th Queue (m) | 3.5 | 6.0 |
| Link Distance (m) | 106.8 | 273.1 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (m) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | EB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | R | L | T | T | T | T | R |
| Maximum Queue (m) | 17.2 | 15.9 | 27.2 | 37.0 | 47.2 | 61.6 | 60.3 | 4.3 |
| Average Queue (m) | 4.7 | 1.5 | 7.2 | 4.7 | 6.8 | 14.2 | 11.9 | 0.3 |
| 95th Queue (m) | 13.9 | 7.9 | 19.1 | 19.9 | 27.7 | 47.4 | 42.0 | 3.4 |
| Link Distance (m) | | 74.4 | | 154.9 | 154.9 | 146.8 | 146.8 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (m) | 15.0 | | 55.0 | | | | | 30.0 |
| Storage Blk Time (%) | 6 | 1 | | 0 | | | 1 | |
| Queuing Penalty (veh) | 0 | 0 | | 0 | | | 0 | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB | SB | SB |
|---|---|---|---|
| Directions Served | R | T | TR |
| Maximum Queue (m) | 10.7 | 45.2 | 31.7 |
| Average Queue (m) | 1.4 | 3.6 | 1.9 |
| 95th Queue (m) | 7.0 | 23.1 | 16.0 |
| Link Distance (m) | 71.0 | 154.9 | 154.9 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (m) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Network Summary

Network wide Queuing Penalty: 104

## Summary of All Intervals

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Start Time | 6:57 | 6:57 | 6:57 | 6:57 |
| End Time | 8:12 | 8:12 | 8:12 | 8:12 |
| Total Time (min) | 75 | 75 | 75 | 75 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 2979 | 3040 | 2985 | 3002 |
| Vehs Exited | 2955 | 3048 | 2999 | 3002 |
| Starting Vehs | 101 | 134 | 139 | 125 |
| Ending Vehs | 125 | 126 | 125 | 126 |
| Travel Distance (km) | 2898 | 2982 | 2896 | 2925 |
| Travel Time (hr) | 266.6 | 224.3 | 229.1 | 240.0 |
| Total Delay (hr) | 224.0 | 180.7 | 186.4 | 197.0 |
| Total Stops | 2359 | 2520 | 2742 | 2540 |
| Fuel Used (l) | 430.6 | 403.4 | 403.1 | 412.4 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:57 |
| End Time | 7:12 |
| Total Time (min) | 15 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:12 |
| End Time | 8:12 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 2 | 3 | Avg |
|---|---|---|---|---|
| Vehs Entered | 2979 | 3040 | 2985 | 3002 |
| Vehs Exited | 2955 | 3048 | 2999 | 3002 |
| Starting Vehs | 101 | 134 | 139 | 125 |
| Ending Vehs | 125 | 126 | 125 | 126 |
| Travel Distance (km) | 2898 | 2982 | 2896 | 2925 |
| Travel Time (hr) | 266.6 | 224.3 | 229.1 | 240.0 |
| Total Delay (hr) | 224.0 | 180.7 | 186.4 | 197.0 |
| Total Stops | 2359 | 2520 | 2742 | 2540 |
| Fuel Used (l) | 430.6 | 403.4 | 403.1 | 412.4 |

## Intersection: 13: Airport Road & E-W Collector Road

| Movement | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | T | R | L | T | TR | L | T | TR |
| Maximum Queue (m) | 62.4 | 347.8 | 62.2 | 195.6 | 62.5 | 49.4 | 100.2 | 103.0 | 76.3 | 69.8 | 80.1 |
| Average Queue (m) | 62.0 | 340.3 | 33.1 | 114.6 | 59.0 | 11.0 | 70.9 | 65.3 | 34.4 | 30.9 | 32.6 |
| 95th Queue (m) | 62.7 | 346.0 | 60.6 | 236.8 | 72.2 | 30.5 | 101.2 | 98.8 | 63.7 | 57.9 | 61.3 |
| Link Distance (m) | | 328.6 | | 178.8 | | | 526.5 | 526.5 | | 109.6 | 109.6 |
| Upstream Blk Time (%) | | 95 | | 19 | | | | | | 0 | |
| Queuing Penalty (veh) | | 0 | | 0 | | | | | | 0 | |
| Storage Bay Dist (m) | 55.0 | | 55.0 | | 55.0 | 80.0 | | | 80.0 | | |
| Storage Blk Time (%) | 84 | 1 | 3 | 2 | 41 | 0 | 3 | | 1 | 0 | |
| Queuing Penalty (veh) | 135 | 3 | 15 | 15 | 82 | 0 | 1 | | 2 | 0 | |

## Intersection: 15: Airport Road & North RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.7 |
| Average Queue (m) | 2.0 |
| 95th Queue (m) | 7.8 |
| Link Distance (m) | 106.8 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 16: Airport Road & Full Moves Access

| Movement | EB | EB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | R | L | T | T | T | T | R |
| Maximum Queue (m) | 22.2 | 52.8 | 10.4 | 52.0 | 52.8 | 36.8 | 30.6 | 16.5 |
| Average Queue (m) | 12.8 | 6.2 | 1.3 | 21.1 | 23.4 | 15.2 | 9.6 | 1.2 |
| 95th Queue (m) | 23.8 | 29.3 | 6.5 | 45.9 | 48.3 | 34.0 | 25.5 | 8.0 |
| Link Distance (m) | | 74.4 | | 154.9 | 154.9 | 146.8 | 146.8 | |
| Upstream Blk Time (%) | | 0 | | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | | |
| Storage Bay Dist (m) | 15.0 | | 55.0 | | | | | 30.0 |
| Storage Blk Time (%) | 26 | 2 | | 0 | | | 0 | |
| Queuing Penalty (veh) | 1 | 1 | | 0 | | | 0 | |

## Intersection: 17: Airport Road & South RIRO Access

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (m) | 8.8 |
| Average Queue (m) | 4.3 |
| 95th Queue (m) | 11.3 |
| Link Distance (m) | 71.0 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (m) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 256

# APPENDIX G:

## Transportation Planning Policy Excerpts

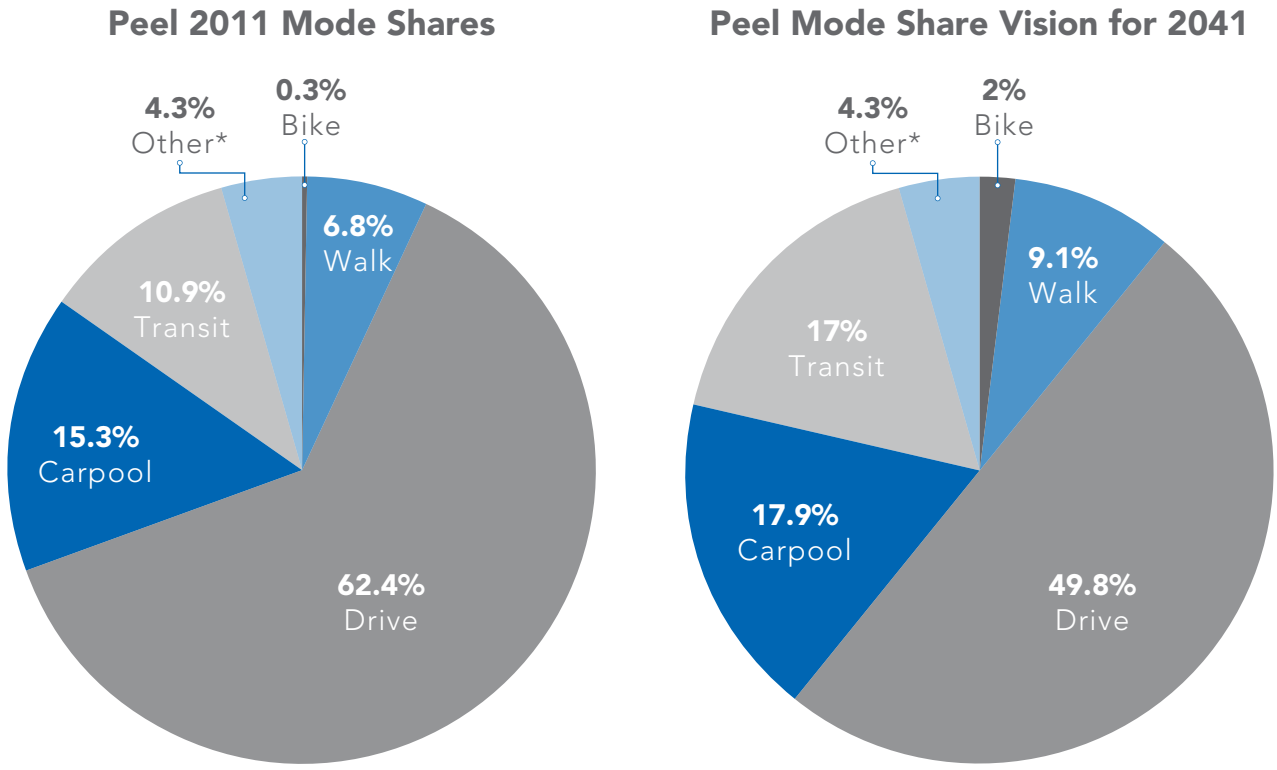
# Let'sMovePeel

## Long Range Transportation Plan **2019**



Region of Peel
working with you

**FIGURE 3-3**
Current and Desired Mode Share Targets, Region of Peel




*"Other" modes include school buses, taxis, and motorcycles.

## 3.2.2 Transportation Demand Management (TDM)

Transportation demand management (TDM) refers to policies, programs, and services that promote travel by sustainable modes while reducing driving by individuals, particularly in weekday peak periods. The travel modes most often associated with TDM are transit, carpooling/vanpooling, cycling and walking. TDM is also associated with options that reduce commuting such as compressed work weeks, alternative work schedules and teleworking.

TDM tools and techniques represent an economical and efficient way to maximize the return on investment in major transportation infrastructure and services such as rapid transit lines, cycling facilities and carpool lots.

TDM strategies embedded within the STS, and by extension the LRTP, are aligned with the Metrolinx 2041 RTP for the GTHA.[22] This alignment will help ensure a seamless inter and intra-regional travel network and viable non-driving travel options to alleviate the future transportation system from pressures associated with growth.

*For a full account of Transportation Demand Management measures, refer to the Sustainable Transportation Strategy (STS) 2018-2022.*

# A

# Appendix A

## Region of Peel 50% Sustainable Mode Share Target Background Paper

**TABLE 12**: Final Targets: Peel Region Mode Share Targets by Municipality 2041
(Source: IBI Group/Region of Peel)

| Peel Region | 2011 | 2041 Vision |
|---|---|---|
| **Driving** | 62.5% | 49.8% |
| **Walking** | 6.8% | 9.1% |
| **Cycling** | 0.3% | 2.0% |
| **Transit** | 10.8% | 17.0% |
| **Carpool** | 15.2% | 17.9% |
| **Other** | 4.3% | 4.3% |
| **Sustainable Transportation** | **37.5%** | **50.3%** |

| Caledon | 2011 | 2041 Vision |
|---|---|---|
| **Driving** | 71.0% | 68.1% |
| **Walking** | 3.5% | 3.6% |
| **Cycling** | 0.0% | 0.8% |
| **Transit** | 2.0% | 2.5% |
| **Carpool** | 8.2% | 9.9% |
| **Other** | 15.3% | 15.1% |
| **Sustainable Transportation** | **29.0%** | **31.9%** |

| Brampton | 2011 | 2041 Vision |
|---|---|---|
| **Driving** | 62.7% | 51.8% |
| **Walking** | 7.4% | 9.1% |
| **Cycling** | 0.2% | 1.8% |
| **Transit** | 8.8% | 14.6% |
| **Carpool** | 16.5% | 18.6% |
| **Other** | 4.4% | 4.0% |
| **Sustainable Transportation** | **37.3%** | **48.1%** |

| Mississauga | 2011 | 2041 Vision |
|---|---|---|
| **Driving** | 61.8% | 45.4% |
| **Walking** | 6.6% | 9.8% |
| **Cycling** | 0.4% | 2.3% |
| **Transit** | 12.9% | 21.1% |
| **Carpool** | 14.8% | 18.3% |
| **Other** | 3.4% | 3.1% |
| **Sustainable Transportation** | **38.2%** | **54.6%** |

# Town of Caledon

## Multi-Modal Transportation Master Plan

June 2024





TOWN OF CALEDON

FUTURE CALEDON

In Collaboration with
R.J. Burnside & Associates Ltd.

BURNSIDE

- **Capacity of Commuter Accommodation:** The need for public commuting by automobile includes a range of purposes such as travel to work, medical, shopping or leisure purposes from/to locations that are not adequately served by transit / active transportation and/or do not adequately serve users with mobility or other barriers to travel by other modes. Capacity improvements aim to facilitate these driving trips while minimizing congestion.

- **Accommodation of Alternative Modes of Travel:** In order for Caledon roads to provide all the necessary street elements and subsurface utilities for successful Complete Streets, the Town must acquire the necessary property and public right-of-way. This right-of-way will not only be used to facilitate mobility, but in an urbanized environment like the future SABE, the public right-of-way can be used to support an active transportation, pedestrian-oriented community.

- **Capacity for Goods Movement:** Within urbanized areas, the economic competitiveness of a municipality is affected by the efficiency and capacity of the movement of goods to / from business areas. Traffic congestion or lack of direct routes can significantly add to the cost of goods and services through transportation costs. Economic competitiveness often relies upon the connectivity between industry and transportation infrastructure including freeways, regional arterial roads and intermodal terminals. Capacity improvements aim to ensure that efficient goods movement is provided.

- **Network efficiency and connectivity:** Network efficiency and road connectivity needs commonly result from discontinuous or misaligned roadways. Misaligned intersections can contribute to poor roadway geometry and/or traffic movements that are not adequately supported by roadway conditions.

- **Community Circulation and Land Access Accommodation:** Within the Town of Caledon, new collector road networks are established by the Town's Secondary Plans. Secondary plans provide more detailed policies for the area it covers, and also establishes a collector road network within the lands. Guiding principles are provided to assist in the development of a Secondary Plan framework for the SABE.

Road improvement recommendations were summarized for the 2031, 2041, and 2051 horizon years. These road recommendations are presented in **Table ES-1, ES-2, and ES-3** respectively. The proposed ultimate (2051) road network is illustrated in **Figure ES-1**.

**Table ES-1: Road Improvement Recommendations (2031)**

| ID | Road | From | To | Recommendation |
|---|---|---|---|---|
| 1 | Chinguacousy Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |
| 2 | McLaughlin Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |

| ID | Road | From | To | Recommendation |
|---|---|---|---|---|
| 3 | Albion Vaughan Road | Mayfield Road | King Street | Urbanization and widening from 2 to 4 lanes |
| 4 | Humber Station Road | Mayfield Road | North of King Street (Settlement Area Limits) | Urbanization and widening from 2 to 4 lanes |
| 5 | Abbotside Way | Bonnieglen Farm Boulevard | Heart Lake Road | Extension (4 Lanes) |
| 6 | Healey Road | The Gore Road | Coleraine Drive | Urbanization and widening from 2 to 4 lanes |
| 7 | Torbram Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |
| 8 | George Bolton Parkway | West of Coleraine Drive | Humber Station Road | Extension (4 Lanes) |
| 9 | Kennedy Road | Newhouse Boulevard | Old School Road | Urbanization and widening from 2 to 4 lanes |

**Table ES-2: Road Improvement Recommendations (2041)**

| ID | Road | From | To | Recommendation |
|---|---|---|---|---|
| 10 | Innis Lake Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |
| 11 | Centreville Creek Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |
| 12 | Old School Road | Winston Churchill Boulevard | Airport Road | Urbanization and widening from 2 to 4 lanes |
| 13 | Healey Road | Airport Road | The Gore Road | Urbanization and widening from 2 to 4 lanes |
| 14 | Kennedy Road | Old School Road | King Street | Urbanization and widening from 2 to 4 lanes |
| 15 | Caledon King Townline | King Street | Columbia Way | Urbanization and widening from 2 to 4 lanes |
| 16 | Columbia Way | Regional Road 50 | Caledon King Townline | Urbanization and widening from 2 to 4 lanes |

**Table ES-3: Road Improvement Recommendations (2051)**

| ID | Road | From | To | Recommendation |
|---|---|---|---|---|
| 17 | Chinguacousy Road | Old School Road | King Street | Urbanization and widening from 2 to 4 lanes |
| 18 | McLaughlin Road | Old School Road | King Street | Urbanization and widening from 2 to 4 lanes |
| 19 | Bramalea Road | Mayfield Road | King Street | Urbanization and widening from 2 to 4 lanes |
| 20 | Heritage Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |
| 21 | Creditview Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |
| 22 | Heart Lake Road | Mayfield Road | Old School Road | Urbanization and widening from 2 to 4 lanes |

Additional road connectivity and network studies are listed below in **Table ES-4**

**Table ES-4: Additional Road Studies and Classifications**

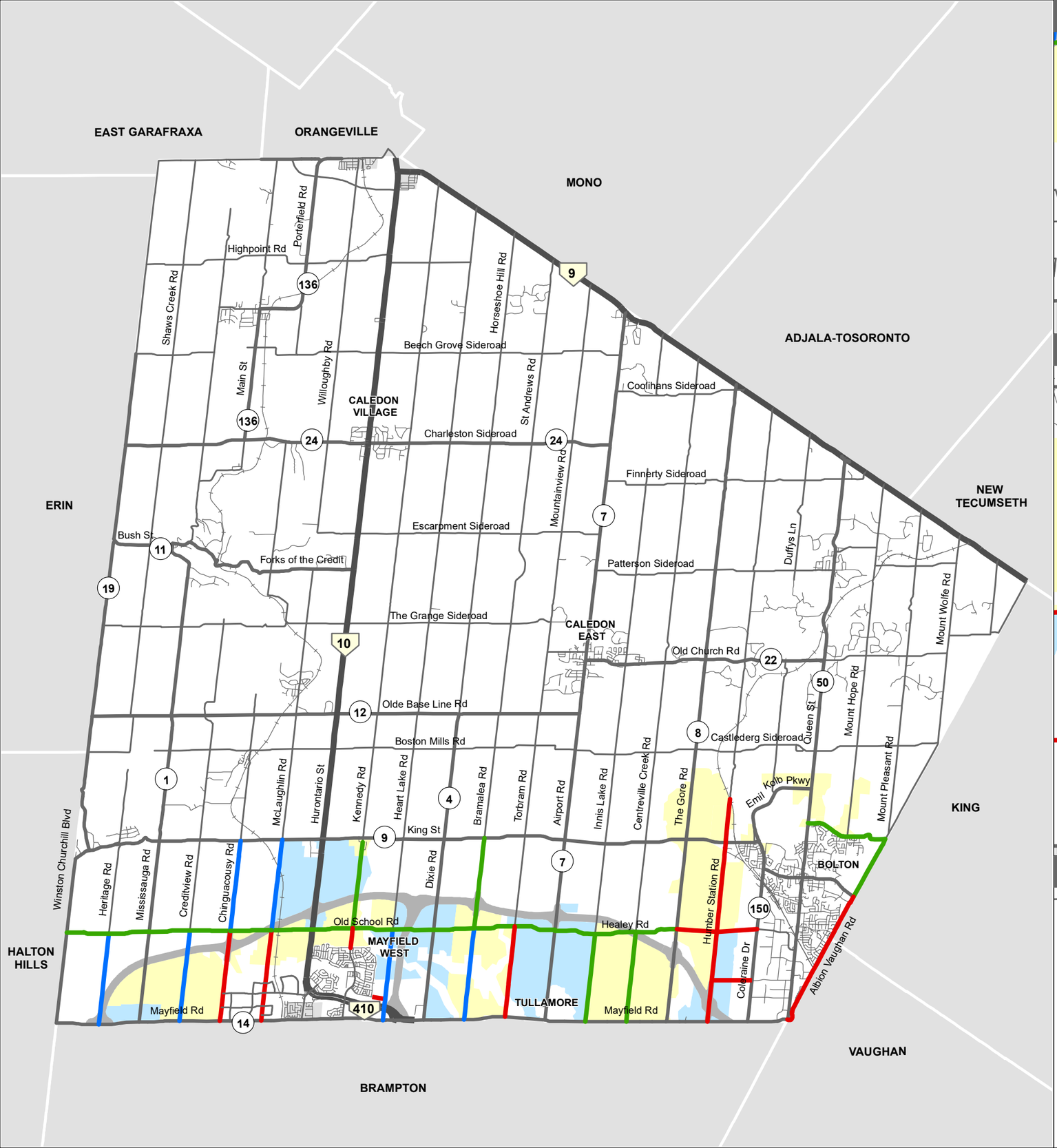
| ID | Additional Study | Description | Study Classification | Lead Agency |
|---|---|---|---|---|
| 18 | Alternative Routes to Bolton and Established Communities | MTO to collaborate with the Region and the Town to extend Highway 427 to Highway 9. | Alternate Route Study | MTO |
| 19 | Mis-aligned intersections (see **Appendix E**) | Monitor mis-aligned intersections for future improvements | Intersection Monitoring | Town of Caledon / Region of Peel |
| 20 | Horseshoe Hill from Olde Base Line Road to Highway 9 | Remove from Region's Strategic Goods Movement Network | Goods Movement Update | Region of Peel |
| 21 | Mountainview Road from Olde Base Line Road to Charleston Sideroad | Remove from Region's Strategic Goods Movement Network | Goods Movement Update | Region of Peel |

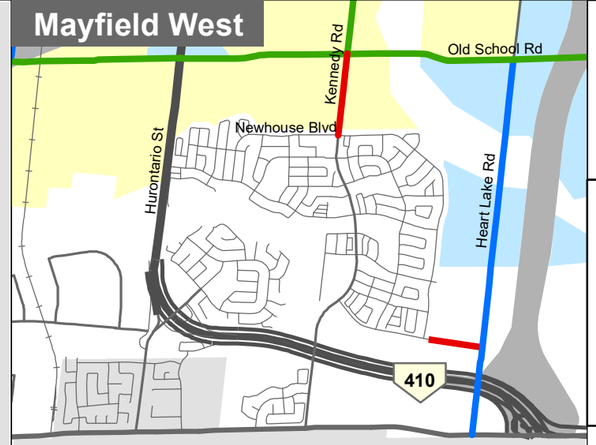
# Town of Caledon

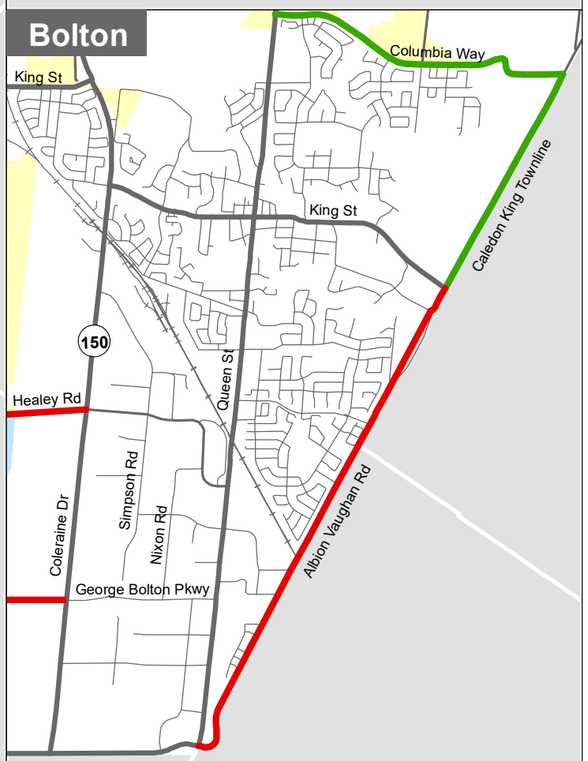
## Transportation Master Plan

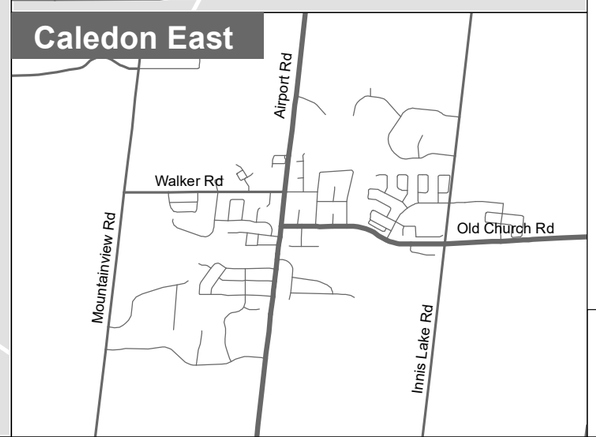
### FIGURE ES-1

Road Network Improvements




**Road Improvements (Phasing)**

- Widening to 4 lanes (by 2031)
- Widening to 4 lanes (by 2041)
- Widening to 4 lanes (by 2051)

**Future Land Uses**

- Community
- Employment

0 1 2 4 6 8 km

BURNSIDE

R.J. Burnside & Associates Limited is not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

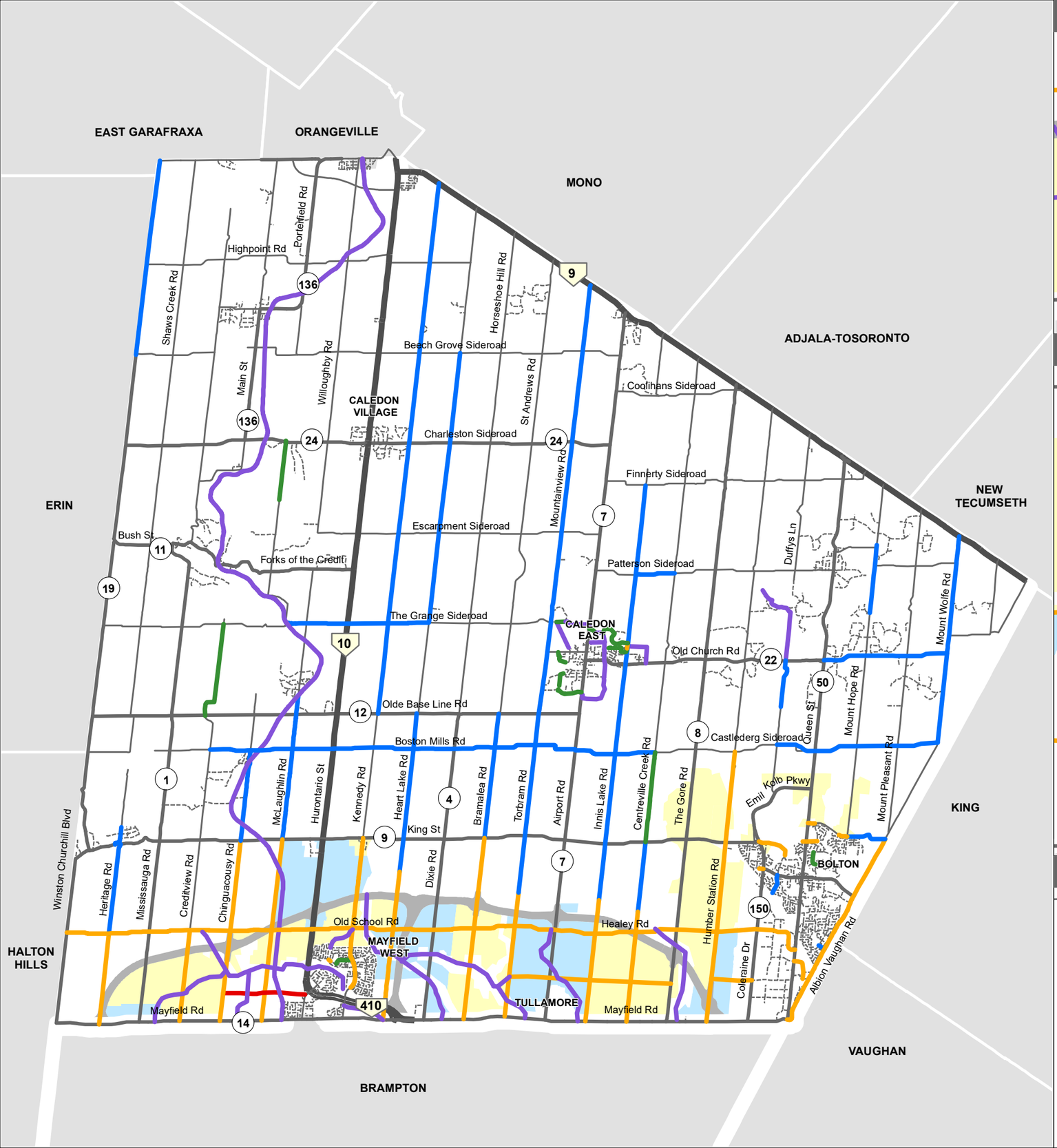
This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

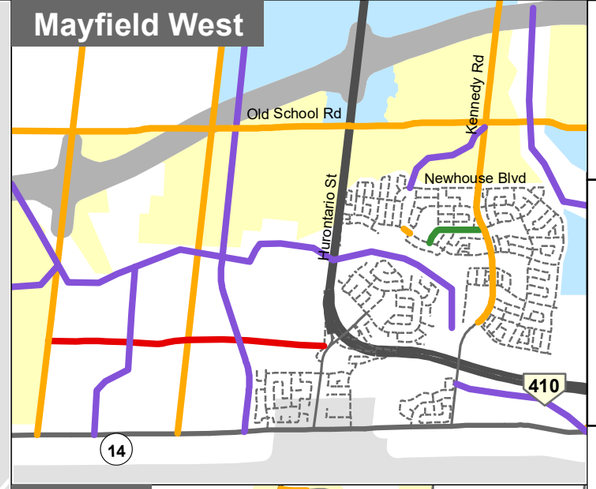
# Town of Caledon

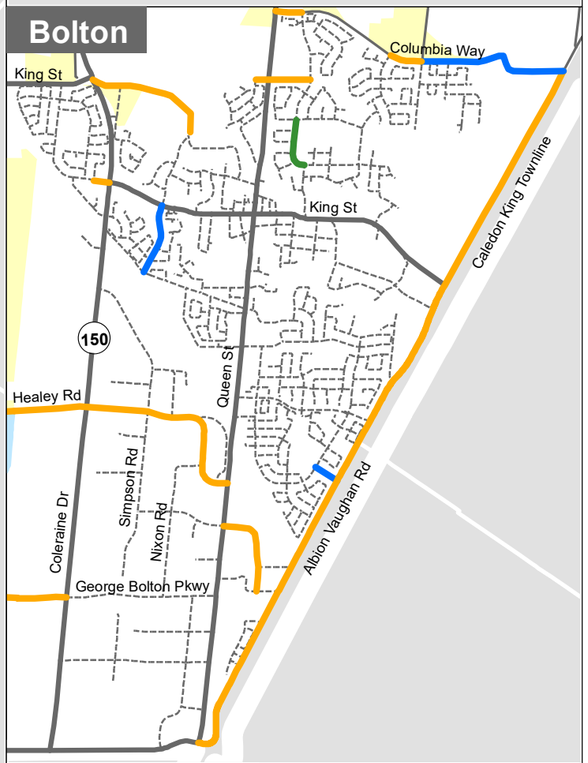
## Transportation Master Plan

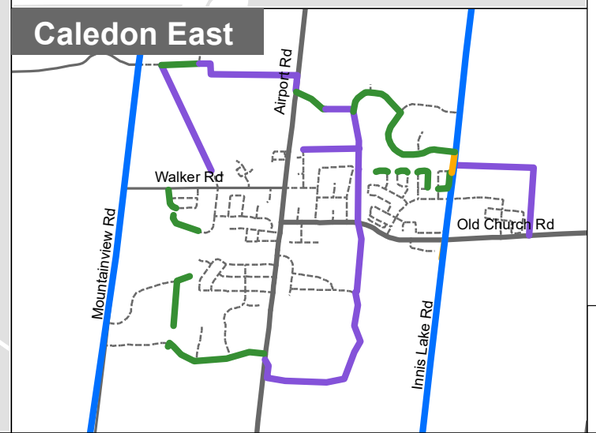
### FIGURE ES-2

Future Active Transportation Network




**Proposed Facility Type**

- Multi-use Trail
- Painted Bike Lane
- Physically Separated
- Shared
- Visually Separated

**Future Land Uses**

- Community
- Employment

Source: Town of Caledon ATMP

0 1 2 4 6 8 km

BURNSIDE

R.J. Burnside & Associates Limited is not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

# Town of Caledon

## Transportation Master Plan

**FIGURE ES-3**

Proposed Transit Network

**Existing**

- GO Transit
- Brampton Transit
- Orangeville Transit

**Future**

- Proposed Corridors
- Bolton GO Rail
- Caledon GO Station
- Potential Second GO Station
- Mayfield Transit Hub
- GTA West Preferred Route

**Future Land Uses**

- Community
- Employment

0 1 2 4 6 8 km

BURNSIDE

R.J. Burnside & Associates Limited is not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

Mayfield West

Bolton

Caledon East

- There has been a reduction in the use of other shared transportation modes such as carpooling and ride-hailing due to perceived health risks.
- Perceived health risks from shared transportation modes may exacerbate the use of the personal vehicles.
- The emerging trend of "working from home" from primarily knowledge workers, most prevalent near the peak of the pandemic, may persist post-pandemic.
- The trip purpose for regional transit may shift away from essential, commuter trips to non-essential trips like for leisure and sporting events, local tourism, airport travel.
- Rising housing prices during the pandemic and other factors caused relocation of many residents away from urban centres to more suburban municipalities. This relocation may lead to lengthier trip distances and commute times which have negative environmental consequences. Increased auto dependence and rising fuel prices during the beginning of 2022 have increased the need for alternate, affordable, and sustainable modes of transportation.

Transportation shocks within this plan's horizon include the adoption of emerging technologies such as autonomous and electric vehicles, extreme climate change, and economic trends that can alter trip making behavior of people and goods such as fuel prices, inflation, and supply chain disruptions. A future-ready transportation system ensures that the system can absorb these potential shocks and adapt using a multi-modal transportation approach supported by growth management and land use planning.

## 4.6 Sustainable Mode Share Objectives

The Region of Peel's 2019 *Long Term Transportation Plan* (LRTP) targets a region-wide sustainable mode share of 50% by 2041. Sustainable mode share includes carpooling, walking, transit, biking and other non-single occupancy vehicle trips (e.g., school bus, taxis, etc.). The 2041 sustainable target mode share for Caledon is 32%, which is 3% higher than the 2011 sustainable mode share for the AM peak period. This target non-auto mode split corresponds to the following breakdown shown in **Table 4-3**.

However, these objectives were established before the Region of Peel allocated land uses to the Town of Caledon by 2051 through the Municipal Comprehensive Review (MCR); it is anticipated that a higher transit modal share will be required for development of the SABE and a population of 300,000 for the Town of Caledon. Therefore, the target 2051 mode splits as shown in the table were developed as part of this MMTMP based on a benchmarking exercise of municipalities that currently have a population density comparable to SABE.

**Table 4-3: Caledon Mode Share Target Breakdown**

| Mode of Travel | 2011 [2] | 2041 Vision [2] | 2051 Vision |
|---|---|---|---|
| Driving | 71.0% | 68.1% | 60% |
| Walking | 3.5% | 3.6% | 6% |
| Cycling | 0.0% | 0.8% | 1% |

| Mode of Travel | 2011 [2] | 2041 Vision [2] | 2051 Vision |
|---|---|---|---|
| Transit | 2.0% | 2.5% | 6% |
| Carpool | 8.2% | 9.9% | 13% |
| Other [1] | 15.3% | 15.1% | 14% |
| **Sustainable Transportation** | **29.0%** | **31.9%** | **40%** |

Note: 1. "Other" modes include motorcycle and school bus.
2. Source: Region of Peel's 2019 Long Term Transportation Plan (LRTP)

## 4.7 MMTMP Vision and Objectives

By 2051, the Town will have a transportation system that provides **accessible**, **affordable**, **safe**, and **sustainable** travel choices for all, and is well-integrated, effective to use, promotes healthy lifestyles, and supports economic prosperity, livable communities and climate commitments. The MMTMP's objectives include:

1. Develop a future-ready transportation plan for the Town and expand the multi-modality of the transportation system including driving, transit, walking, cycling, and other emerging mobility options.

2. Provide infrastructure to support and manage future land use growth and address the needs and priorities for both rural and urban communities.

3. Deliver sustainable strategies that protect natural heritage assets while reducing transportation's effects on climate change.

4. Build a safe and inclusive transportation system that supports age-friendly communities and promotes healthy living.

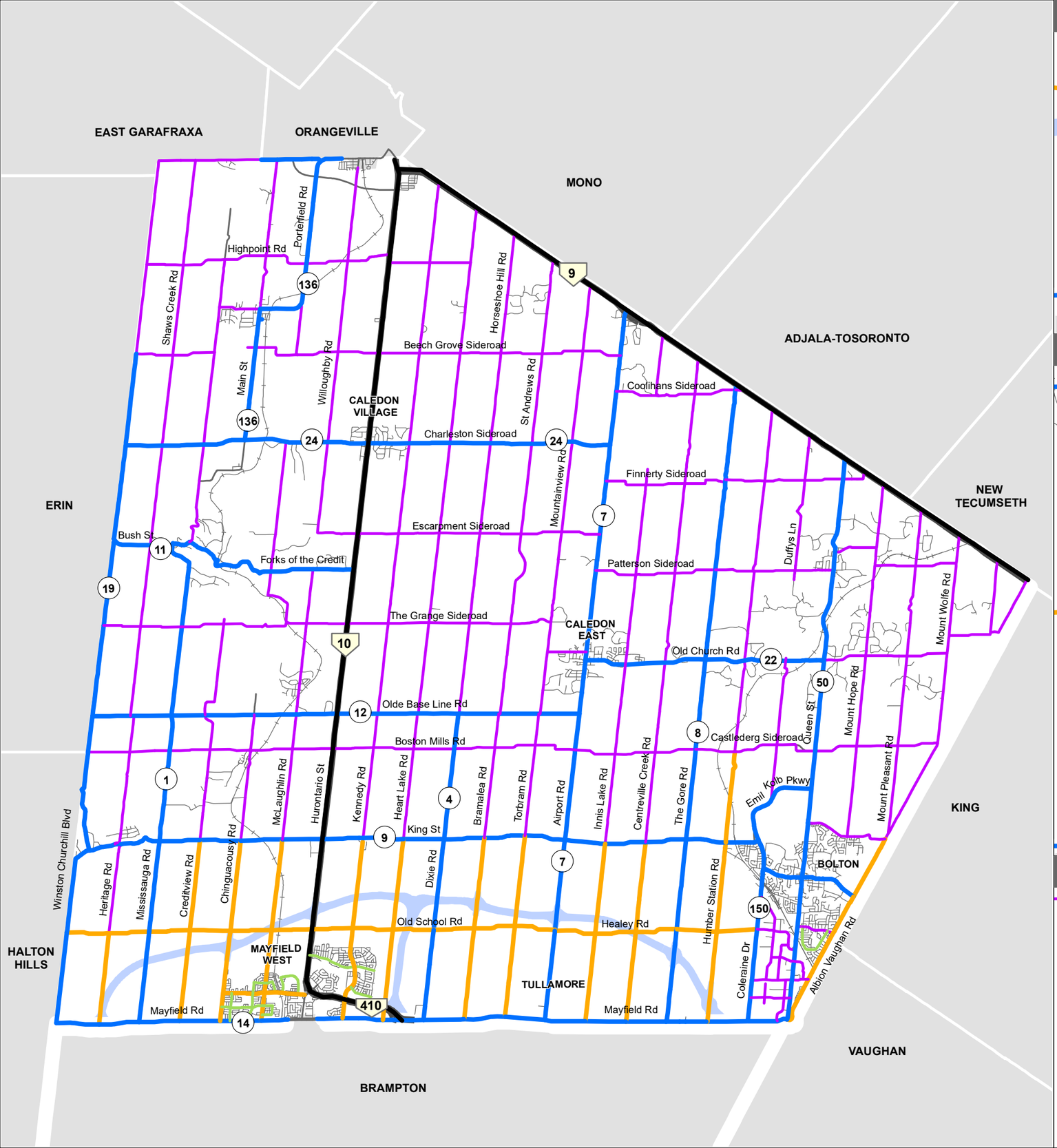
5. Develop complementary transportation solutions that support Provincial, Regional, and Local policies and the Town's Official Plan (OP).

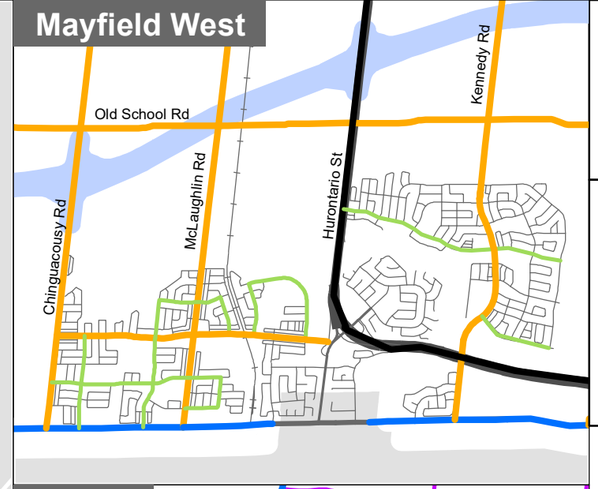
# Town of Caledon

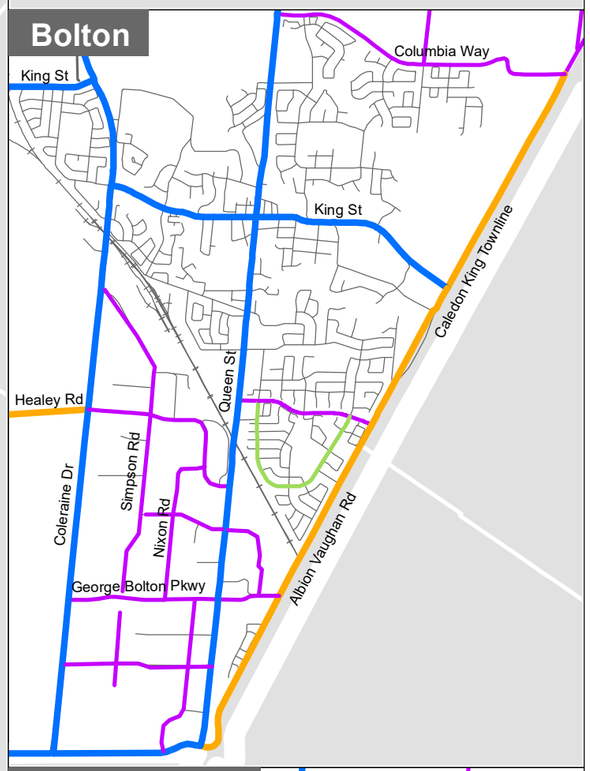
## Transportation Master Plan

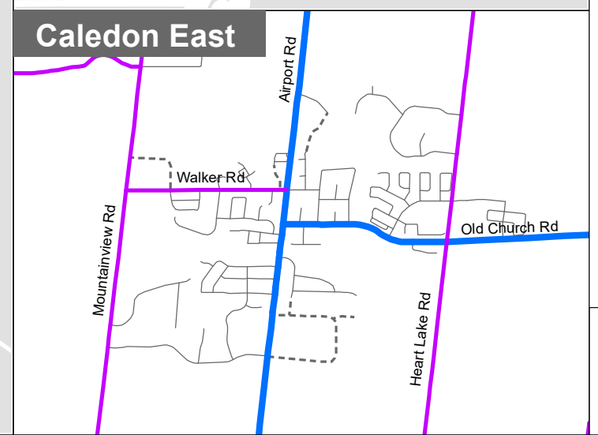
**FIGURE 9-2**

Road Classifications




- Provincial Highway / Freeway
- Regional Arterial
- Town Arterial
- Major Collector
- Minor Collector
- Local
- GTA West Corridor

0 1 2 4 6 8 km

BURNSIDE

R.J. Burnside & Associates Limited is not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

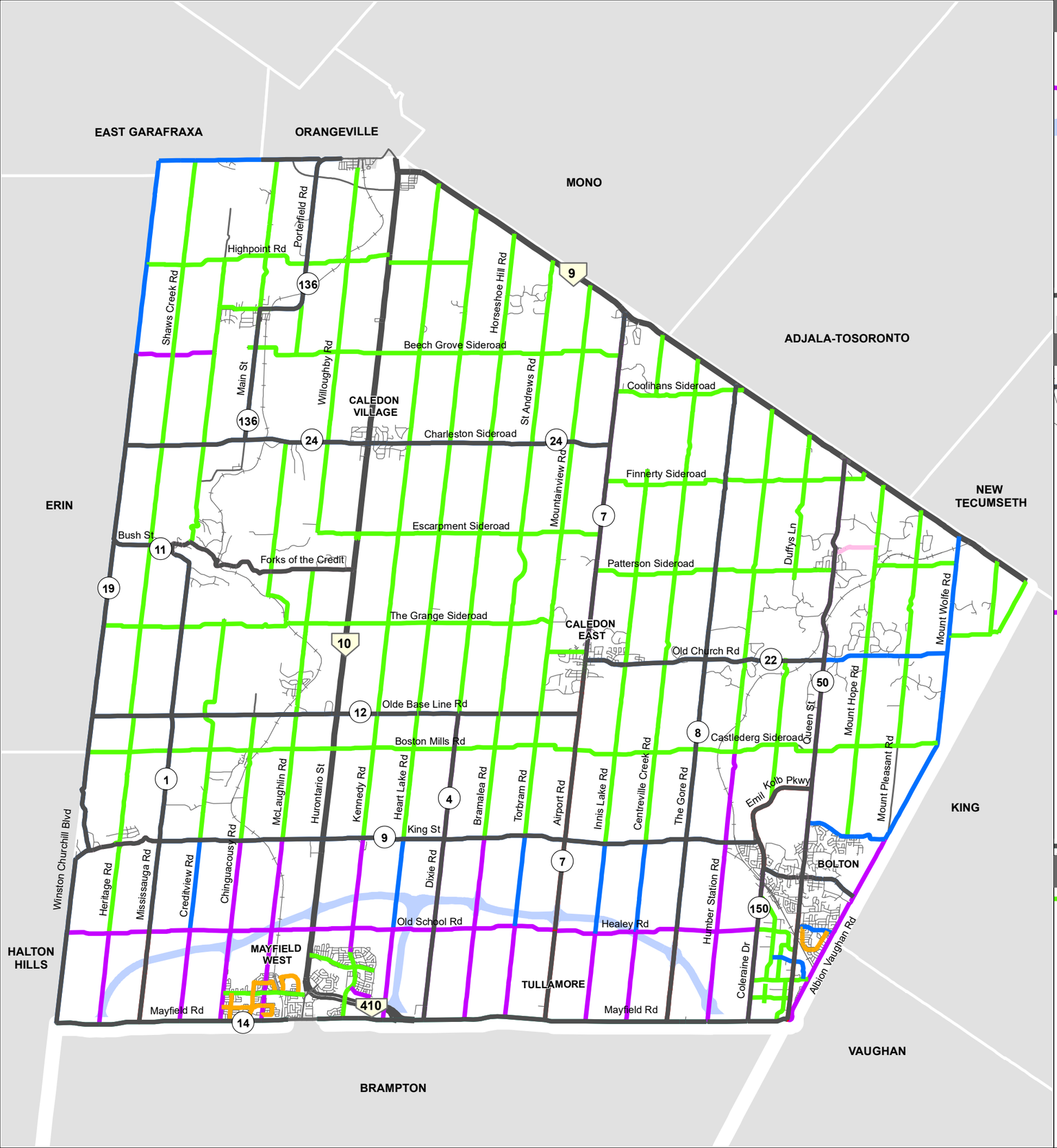
This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

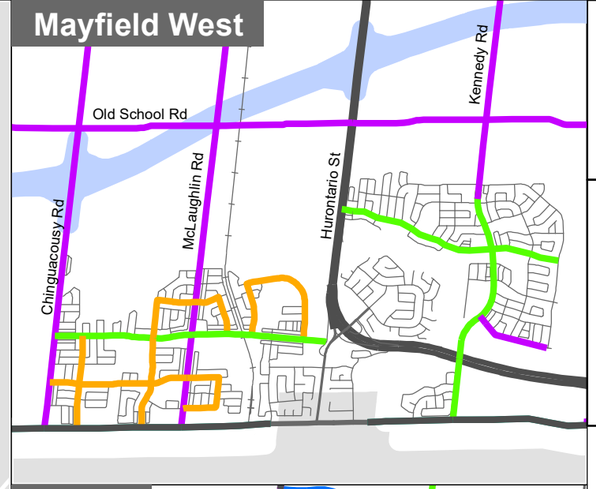
# Town of Caledon

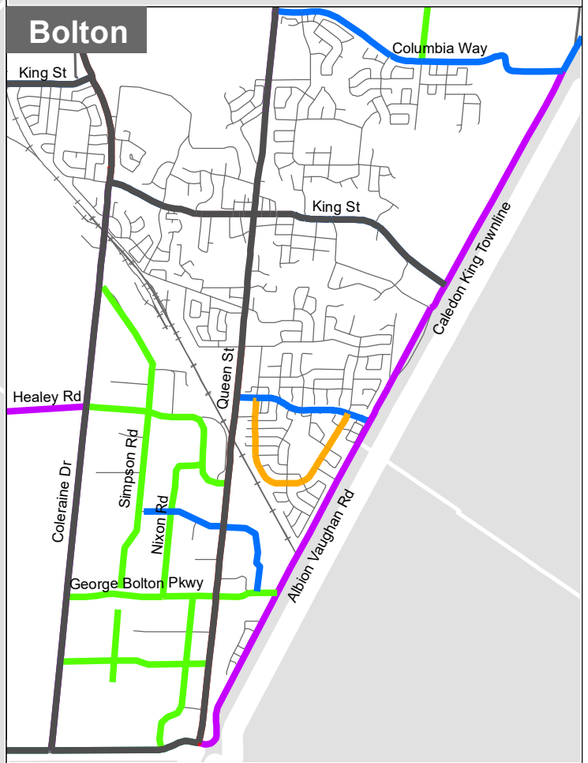
## Transportation Master Plan

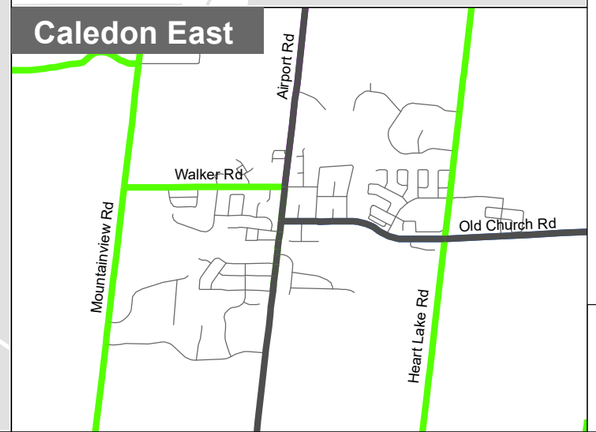
**FIGURE 9-3**

Right of Way (ROW) Widths




**ROW Width (m)**

- 20
- 22
- 26
- 30
- 36
- Regional Roads
- GTA West Corridor

*** Note: ROW widths along Regional roads are based on the Region's 2019 Long Range Transportation Plan. Refer to Region for latest Regional Road ROWs.**

0 1 2 4 6 8 km

BURNSIDE

R.J. Burnside & Associates Limited is not responsible for the accuracy of the spatial, temporal, or other aspects of the data represented on this map. It is recommended that users confirm the accuracy of the information represented.

This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

# Appendix F

## Complete Streets Framework

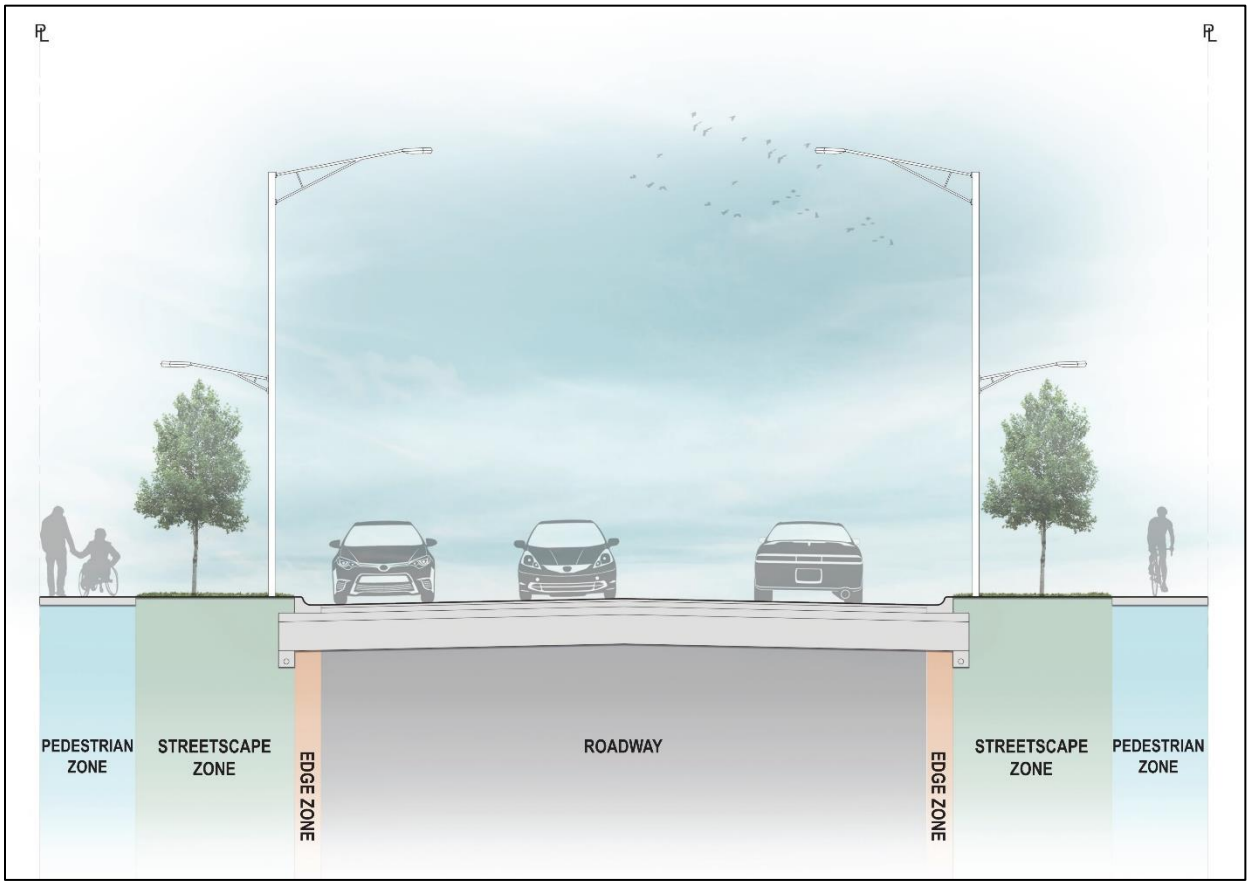


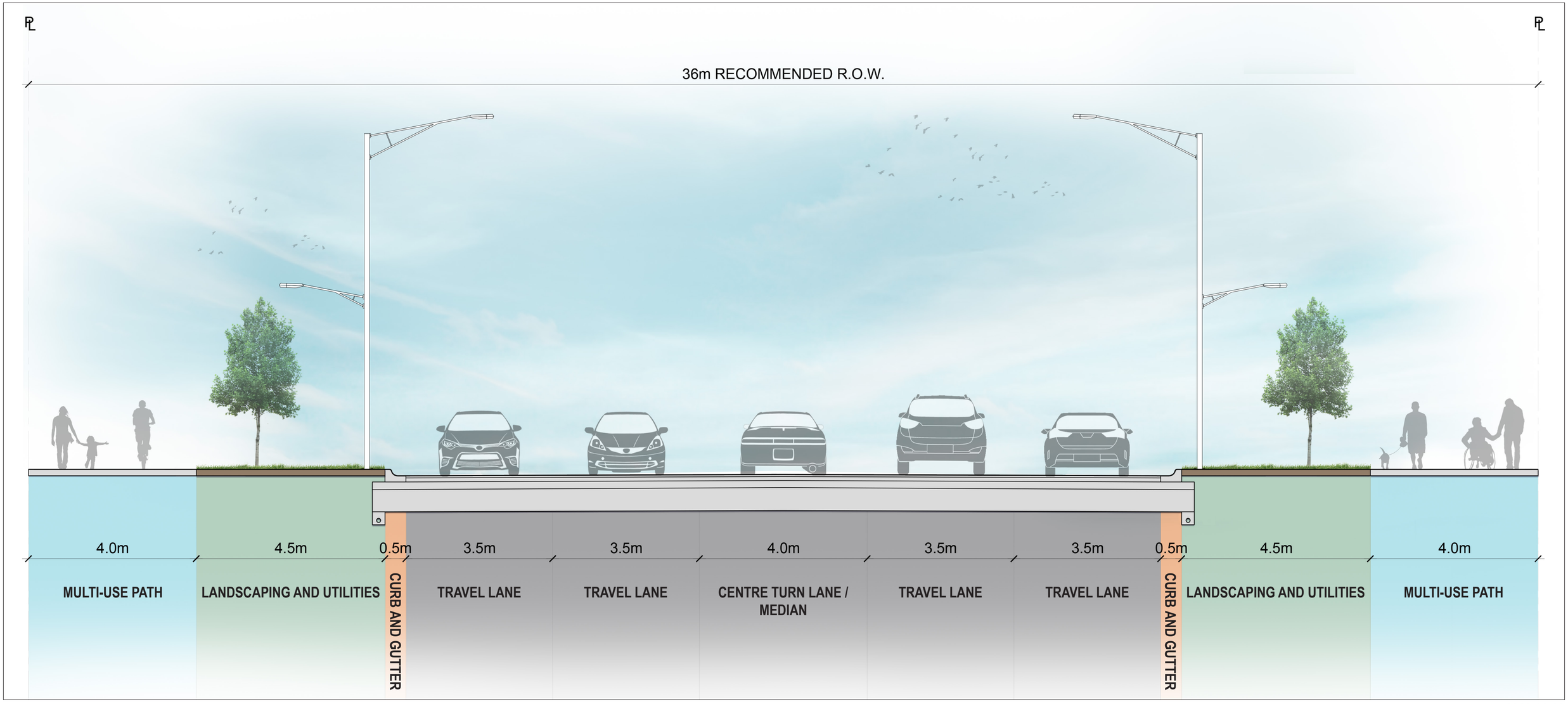

**Figure F-1: Cross Section Elements**

**Table F-2: Complete Streets Cross-Section Elements**

| | Description | Potential Elements | Design Guidelines |
|---|---|---|---|
| **Roadway** | Provide for the safe and efficient movement of vehicles, and may accommodate bike lanes or parking | Travel lanes | • The number of travel lanes and lane widths should consider the users of the street, including impacts on pedestrian crossing distances and the role of medians<br>• Travel lanes should not exceed 3.5 m unless it is a shared vehicle lane<br>• Passing / curb lanes should be a minimum of 3.25 m and should be sufficiently wide to accommodate the anticipated range of transit vehicles<br>• In urban areas, where lower speeds are desired, narrower travel lane widths may be more appropriate |
| | | Shared vehicle lane | • A desired minimum vehicle lane width of 4.5 m for vehicle lanes that are shared with cyclists |
| | | Auxiliary Left Turn Lane | • To provision for auxiliary left turns at intersections, a lane width as narrow as 3.0 m plus a 2.0 m median separation to opposing traffic is acceptable if trucks and buses make up less than 15 veh/h of the turning traffic; otherwise, a minimum left turn lane of 3.3 m is desired |
| | | Parking lane | • A minimum on-street parking width of 2.4 m is desired; however, a width of 2.0 m can be considered in constrained areas<br>• On-street parking is discouraged along roads with operating speeds of over 60 km/h |
| | | Centre turn lane | • Widths are generally the same as the adjacent through lane<br>• A centre turn lane width of 4.0 m is desired for roads with design speeds greater than 60 km/h; otherwise a 3.5 m width is acceptable<br>• A width of 5.0 m should be avoided due to operational concerns |
| | | Medians | • An overall median width of 6.0 m width (including the gutter) is desired to accommodate a protected structural pier or left-turn auxiliary lanes<br>• Wider medians with barriers are desirable along high speed, arterial roads |
| | | On-street bicycle lanes | • See **Town Active Transportation Master Plan (ATMP)** for details on bicycle facility design requirements, including the appropriateness of facility type based on the context of the road and environment<br>• A bicycle lane that is greater than 2.0 m, not including buffer width, is discouraged as vehicles may use it as a travel / passing lane |

| | Description | Potential Elements | Design Guidelines |
|---|---|---|---|
| **Edge Zone** | Located between the vehicle lanes and green zone and may include curbing or shoulders | Paved shoulder | • See **Town ATMP** for details on bicycle facility design requirements, including the appropriateness of facility type based on the context of the road and environment<br>• A paved shoulder that is greater than 2.0 m, not including buffer width, is discouraged as vehicles may use it as a travel / passing lane<br>• Paved shoulders should not include bicycle lane signage as they also serve as a refuge for disabled vehicles |
| | | Cycle Track | • A minimum and desired width of 1.5 m and 2.0-2.5 m, respectively, is recommended for a one-way cycle track<br>• A minimum and desired width of 3.0 m and 3.5-4.0 m, respectively, is recommended for a two-way cycle track |
| | | Curb and gutter | • A curb and gutter should be provided along roads within urbanized areas or with main street environments |
| **Streetscape Zone** | Located within the boulevard and provides aesthetic and low impact development (LID) elements, street furniture, lighting, and a buffer to pedestrians | Lighting, road signs, above and below ground utilities | • In urban areas, lighting should be designed to accommodate pedestrians (i.e., illumination of sidewalks)<br>• In rural areas, lighting should be incorporated for the purpose of enhancing roadway safety and visibility |
| | | Planting and furnishing | • Provides space for plantation, street furniture, pedestrian amenities (e.g., benches), transit amenities (e.g., shelters) and utilities<br>• Planting / furnishing zones is typically 1.0 to 3.0 m wide, but can vary on a corridor basis<br>• No elements should impede pedestrian movement |
| | | Low Impact Development (LID) | • Cost effective LID practices should be incorporated, where possible, for stormwater management |
| | | Rural swale | • Edges of rural roads, except those in main street environments, should include swales for drainage |
| **Pedestrian Zone** | Boulevard space dedicated to sidewalks for pedestrians or a multi-use path for both pedestrians and cyclists | Sidewalk | • Sidewalks should be provided directly adjacent to the building frontage, property line or marketing zone depending on the context of the corridor<br>• Sidewalks should be free of obstructions and constructed to meet AODA standards<br>• A minimum width of 1.8 m is recommended<br>• Within urban areas or along main streets, sidewalks and/or multi-use paths should be provided along both sides of the road |

| | Description | Potential Elements | Design Guidelines |
|---|---|---|---|
| | | Multi-use path | • See **Town ATMP** for details on bicycle facility design requirements, including the appropriateness of facility type based on the context of the road and environment<br>• Within urban areas or along main streets, sidewalks and/or multi-use paths should be provided along both sides of the road<br>• Supportive amenities, including benches, waste bins, lighting and signage, are recommended |
| **Marketing Zone** | Located between the pedestrian zone and the building frontage | Patios<br>Spil-out retail<br>Awnings<br>Building entrances<br>Street furniture | • Marketing zone encouraged in urban areas to provide street identify / character and promote pedestrian activity<br>• Elements should be installed such that pedestrian movement is not impeded |




**CALEDON MULTI-MODEL TRANSPORTATION PLAN**

## URBAN ARTERIAL STREET - 4 LANES

2023.08.08

BURNSIDE



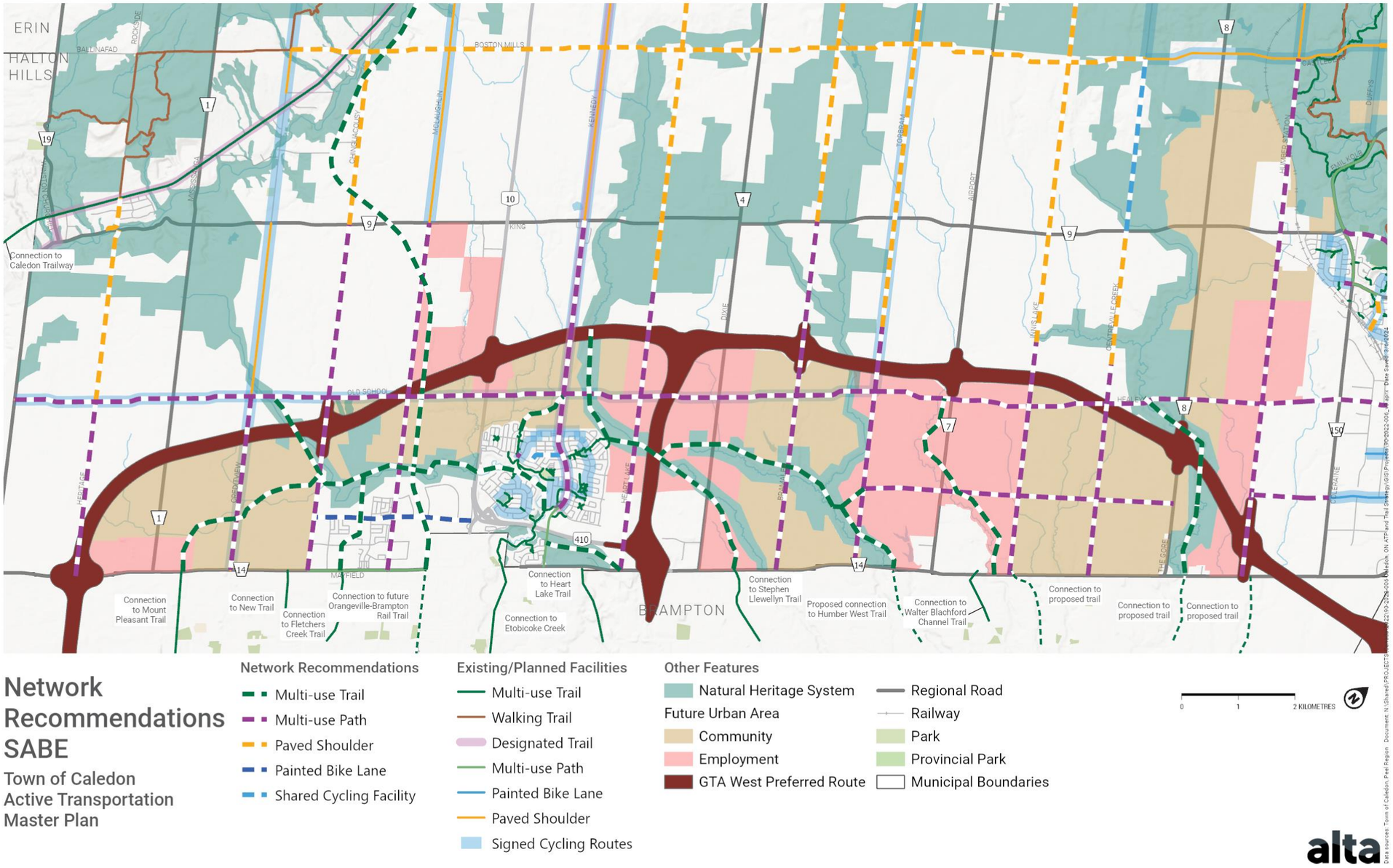
# Town of Caledon

# Active Transportation Master Plan

**June 2024**

TOWN OF CALEDON

Map 6. Network recommendations in the Settlement Area Boundary Expansion area



Map 7. Network implementation

# Network Implementation

## Town of Caledon Active Transportation Master Plan

**Implementation Opportunity**

- Routine Accommodation
- Development-driven
- Standalone

**Existing/Planned Facilities**

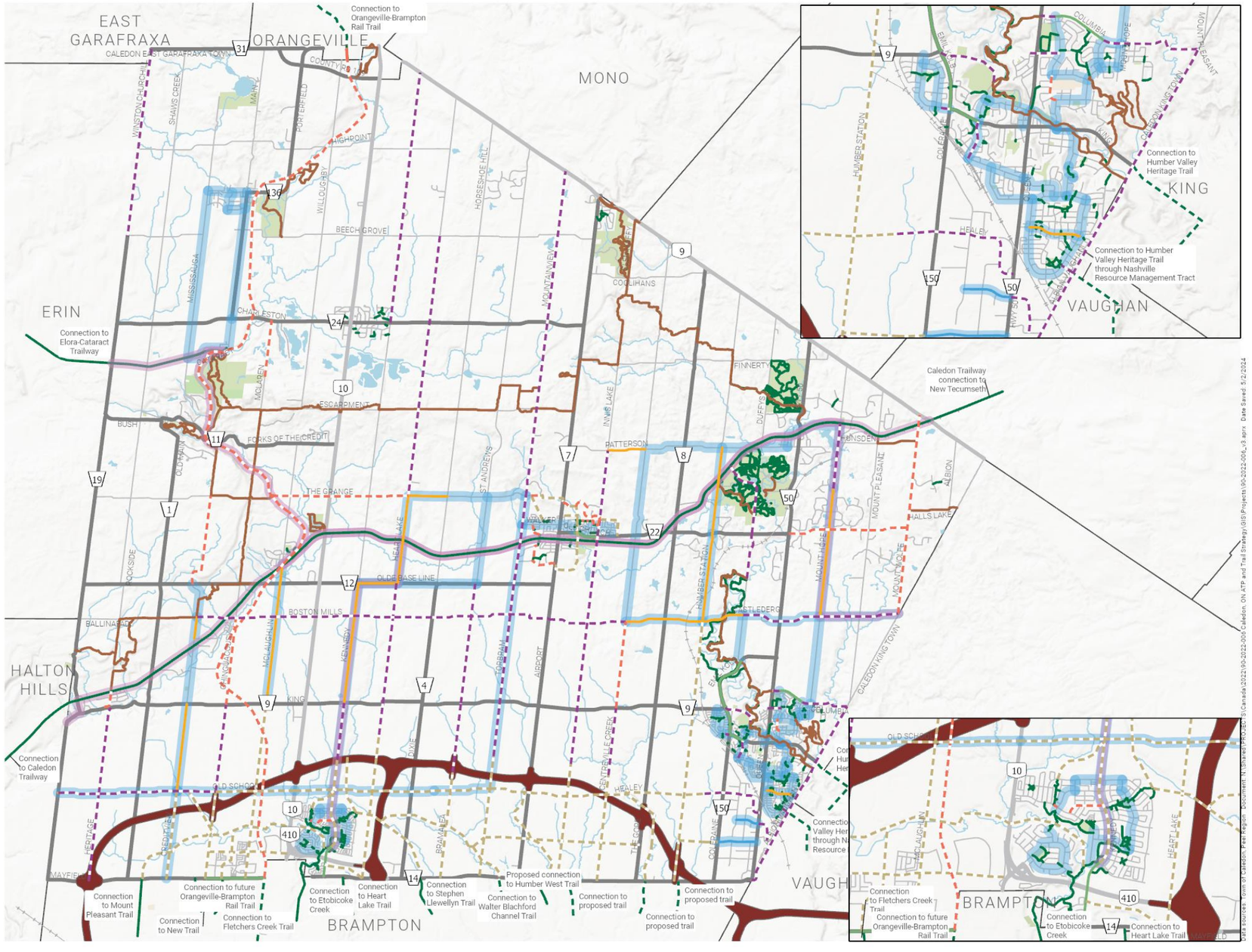
- Multi-use Trail
- Walking Trail
- Designated Trail
- Multi-use Path
- Painted Bike Lane
- Paved Shoulder
- Signed Cycling Routes

**Other Features**

- GTA West Preferred Route
- Regional Road
- Railway
- Park
- Provincial Park
- Municipal Boundaries

0 2 4 KILOMETRES

alta



# APPENDIX H:

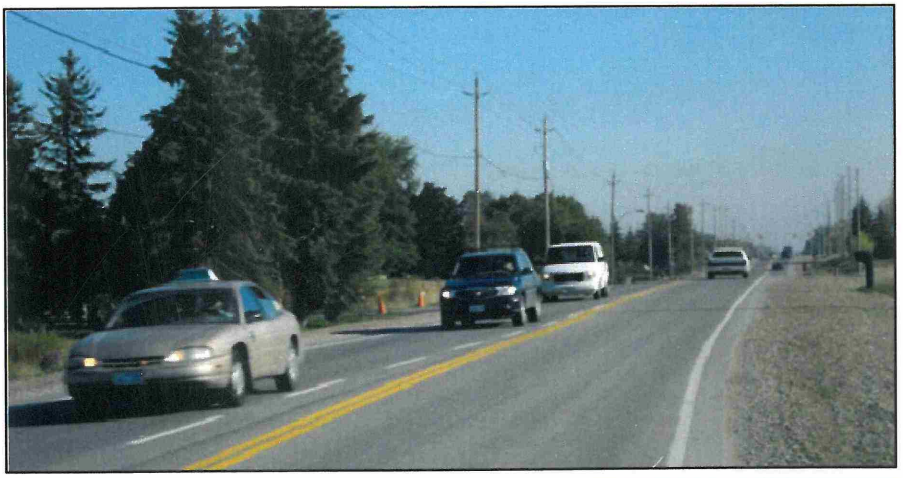
## Transportation Improvement Excerpts

Project Number:
2007-317P

April/2013

# Mayfield Road Improvements

## Airport Road to Coleraine Drive – Class Environmental Assessment



## ENVIRONMENTAL STUDY REPORT

Volume 1 of 5
Environmental Study Report

April 5, 2013

Stantec

Region of Peel
Working for you

# 5.0 Design Concepts

## 5.1 ALTERNATIVE DESIGN CONCEPTS

### 5.1.1 Background and Introduction

Based on the results of the evaluation of alternative solutions and feedback following Public Information Centre No. 1, the Recommended Alternative Solution of Widening Mayfield Road was confirmed by the Study team. This solution includes intersection improvements, consideration of roundabouts, minimizing impacts on property and the environment, and private property access management. Other items such as upgrading or building other routes/roads, and providing enhanced transit service throughout the Region will also be implemented with all Alternative Design Concepts. The next step in the study process was to identify and assess practical design alternatives and select a preferred design alternative for presentation to the public.

### 5.1.2 Roadway Design Criteria

Roadway design criteria were established and refined early in the study to arrive at a suitable set of design criteria that would be applied to the development of roadway designs as part of the preferred solution. The following table summarizes the existing and proposed design criteria and which form the basis for the design alternatives prepared as part of the Class EA and preliminary design:

**Table 5.1.2.1 – Roadway Design Criteria**

| CRITERIA/ DESCRIPTION | EXISTING CONDITIONS | URBAN ARTERIAL UNDIVIDED Controlled Access | URBAN ARTERIAL DIVIDED Controlled Access |
|---|---|---|---|
| **Design Classification:** | **Built up areas**: Rural Arterial Road Undivided Posted Speed 60 km/hr<br><br>**Rural Areas**: Rural Arterial Road Undivided Posted Speed 80 km/hr | **Built up areas**: UAU 70, Design Speed 70 km/hr, Posted Speed 60 km/hr<br><br>**Rural Areas**: UAD 90, Design Speed 90 km/hr, Posted Speed 80 km/hr | **Built up areas**: UAD 70, Design Speed 70 km/hr, Posted Speed 60 km/hr<br><br>**Rural Areas**: UAD 90 Design Speed 90 km/hr, Posted Speed 80 km/hr |
| **Cross Section:** | **Right of Way:** Varies but generally 30 meters or larger. | **Right of Way**: 50 metres (165 feet nominally) | **Right of Way**: 50 metres (165 feet nominally) |

| Table 5.1.2.1 – Roadway Design Criteria | | | |
|---|---|---|---|
| **CRITERIA/ DESCRIPTION** | **EXISTING CONDITIONS** | **URBAN ARTERIAL UNDIVIDED Controlled Access** | **URBAN ARTERIAL DIVIDED Controlled Access** |
| | **Road Platform:** 2 paved lanes with gravel shoulders and turn lanes at Intersections. Drainage by means of ditches with some minor storm sewers in built up areas. | **Road Platform:** 6 lanes no center median. Curb & gutter with storm sewers | **Road Platform**: 6 lanes divided by 6.0 m raised median. Curb & gutter with storm sewers |
| **Maximum Gradient:** | Approx. 4% east of Goreway Drive | 6.0% | 6.0% |
| **Minimum Gradient:** | - | 0.5% | 0.5% |
| **Crest/Sag(1) Minimum K Values** | - | UAU70:<br>Crest: SSD:32 PSD:350<br>Sag: SSD: 30<br><br>UAU90:<br>Crest: SSD: 16 PSD: 250<br>Sag: SSD: 20 | UAD70:<br>Crest: SSD:32 PSD:350<br>Sag: SSD: 30<br><br>UAD90:<br>Crest: SSD: 16 PSD: 250<br>Sag: SSD: 20 |
| **Minimum Stopping Sight Distance:** | - | UAU70: 94 m<br>UAU90: 131 m | UAD70: 94 m<br>UAD90: 131 m |
| **Equivalent Minimum "K" Factor:** | - | UAU70: 16<br>UAU90: 32 | UAD70: 16<br>UAD90: 32 |
| **Minimum Radius of Horizontal Curvature:** | Approx. 320m @ 60kmh posted (i.e. east of Airport Road) | UAU70: 200 m<br>UAU90: 375 m | UAD70: 200 m<br>UAD90: 375 m |
| **Super elevation:** | - | Maximum (eMax) = 4% | Maximum (eMax) = 4% |
| **Lane Widths(2)** | Generally 3.75m through lanes | Through Lanes: 3.75 m<br>Turn Lanes: 3.5 m | Through Lanes: 3.75 m<br>Turn Lanes: 3.5 m |
| **Sidewalk Width** | N/A | 1.5 m | 1.5 m |
| **Multi-use Trail Width** | N/A | 3.0 m | 3.0 m |

# 6.0 Recommended Design Concept

## 6.1 DESCRIPTION OF RECOMMENDED DESIGN CONCEPT

Following a comprehensive evaluation process, the study team has confirmed the Recommended Design Alternative is "Concept 4 – Modified Widening of Mayfield Road about the Centerline". The recommended Design Concept was developed based on the various discussions, comments, investigations, studies, etc. undertaken as part of the Class Environmental Assessment Study. Figures 6.1.1.1 and 6.1.1.2 illustrate the proposed road cross section with and without median.

***Following a comprehensive evaluation process, the study team has confirmed the Recommended Design Alternative is "Concept 4 – Modified Widening of Mayfield Road about the Centerline"***




**Figure 6.1.1 – Landscape Cross Section – Ultimate 6 Lanes Without Median**




**Figure 6.1.2 – Landscape Cross Section – Ultimate 6 Lanes With Median**

The Recommended Design Concept is illustrated in the foldout plans included accompanying this section and is described in more detail as follows:

### 6.1.1 Mayfield Road – Airport Road to Maisonneuve Boulevard

Details of this section include:

Current rural cross section of two lanes plus turn lanes is upgraded to four lanes plus turn lanes with a continuous 6.0 m wide two-way left turn lane (TWTL) in the interim phase (prior to 2017) and further upgraded in the ultimate phase (prior to 2032) to six (6) lanes with turning lanes, continuous two way left turn lane. This may also include the recommended replacement of the TWTL with raised median based on adjacent area development progression. Within this section is one culvert crossing TRCA ID No. 1 and a SWM facility on the north side at Sta. 11+600 and pedestrian facilities at both sides (1.5 m concrete sidewalk on north side and 3.0 m asphalt multi-use trail on the south side). The potential for a multi-use trail on the north side will also be investigated during the detailed design phase which is recommended in the Region's 2012 Active Transportation Plan.

External roadside drainage at crossing No. 1 is captured and conveyed within a closed storm sewer system connecting to the south side and outlet directly to the watercourse on the east side Maisonneuve Boulevard.

The preliminary design for this section of Mayfield Road is represented on drawings No. P1A through P2B and a typical cross section is provided as Figure CS1-1.

**Ultimate Intersection Configuration:**

**Airport Road:**

Eastbound – three through lanes

Westbound – three through lanes

Westbound Left Turn Lane - 125 m storage/parallel lane

Westbound Right Turn Lane - 60 m storage/parallel lane

**Maisonneuve Boulevard:**

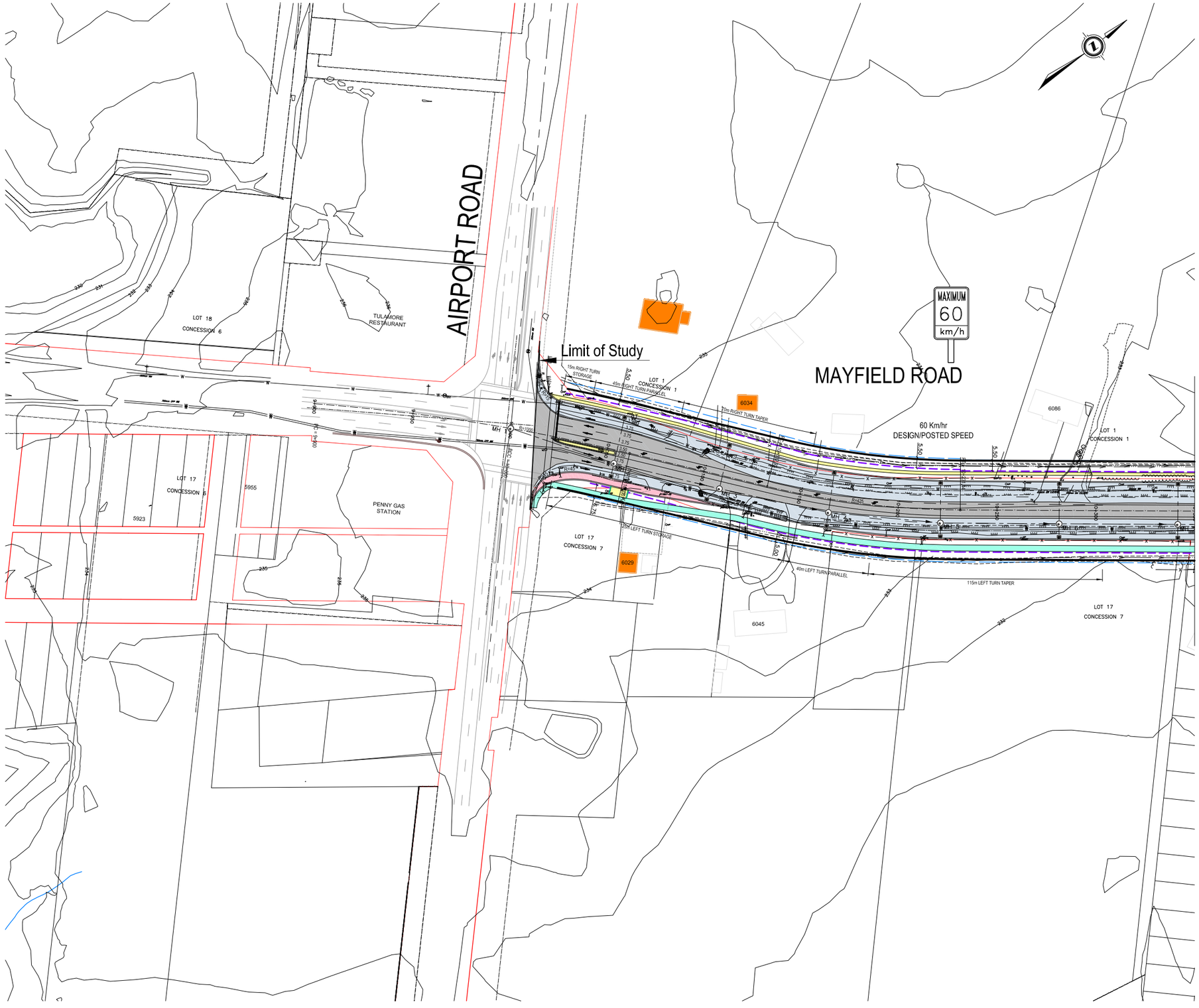
Eastbound – three through lanes

Westbound – three through lanes

Westbound Left Turn Lane – 50/40 m storage/parallel lane

Eastbound Right Turn Lane - 30/45 m storage/parallel lane

Initial construction of the four lane section will be skewed to the south with a full urban cross section on the south side and a semi-rural section retained on the north side. Deferral of the north side sidewalk may be considered subject to confirmation with the Town of Caledon.


AIRPORT ROAD
MAYFIELD ROAD
Limit of Study
MAXIMUM 60 km/h
60 Km/hr DESIGN/POSTED SPEED
LOT 18 CONCESSION 6
TULAMORE RESTAURANT
LOT 17 CONCESSION 6
PENNY GAS STATION
LOT 17 CONCESSION 7
LOT 1 CONCESSION 1
15m RIGHT TURN STORAGE
45m RIGHT TURN PARALLEL
70m RIGHT TURN TAPER
15m LEFT TURN STORAGE
40m LEFT TURN PARALLEL
115m LEFT TURN TAPER
6034
6029
6045
6086
5923
5955
MH 1
MH 2
MH 3
MH 4
MH 5
MH 6
MH 7
MH 8
MH 9
MH 10
MH 11
MH 12
MH 13
MH 14
MH 15
MH 16
MH 17
MH 18
MH 19
MH 20
MH

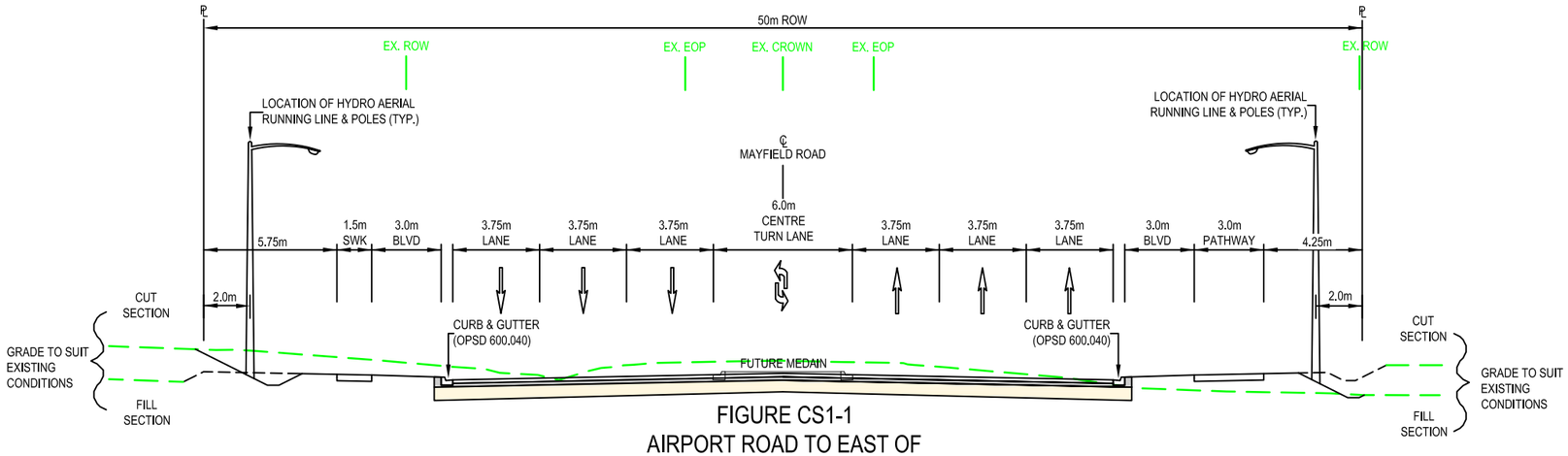



FIGURE CS1-1
AIRPORT ROAD TO EAST OF
GOREWAY DRIVE/INNIS LAKE ROAD

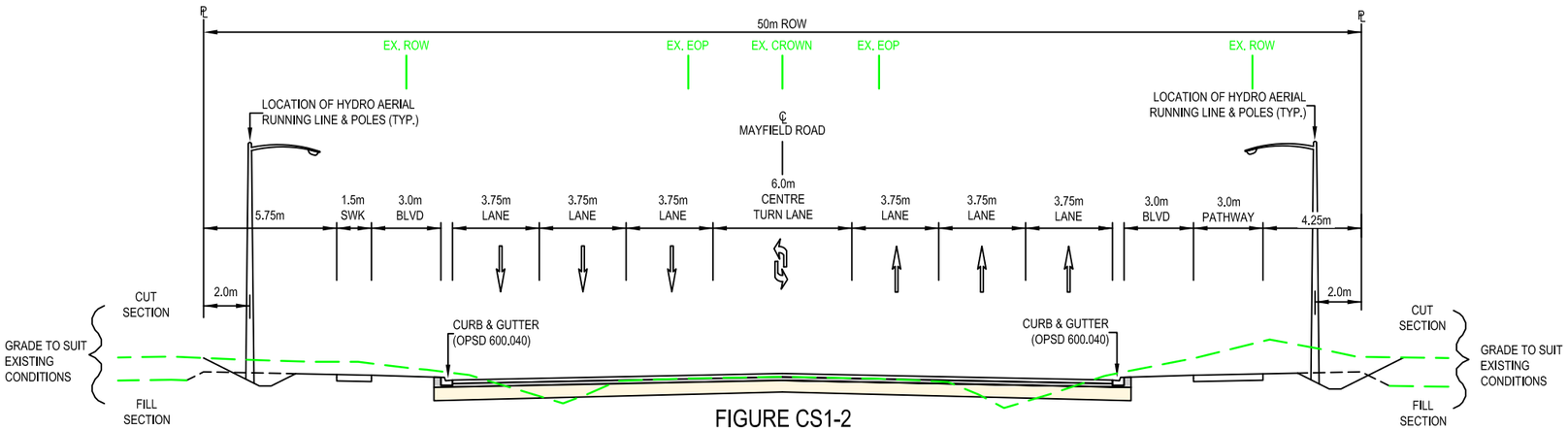



FIGURE CS1-2
EAST OF GOREWAY DRIVE/INNIS LAKE
ROAD TO EAST OF THE GORE ROAD

Stantec

Client

Region of Peel
Working for you

Drawing Title

MAYFIELD ROAD
AIRPORT ROAD TO COLERAINE DRIVE
CLASS EA STUDY REPORT
RECOMMENDED DESIGN ALTERNATIVE
"DESIGN CONCEPT 4 MODIFIED"
EQUAL WIDENING CONCEPT
TO MINIMIZE PROPERTY IMPACTS

| Drawn By | Checked By | Drawing Number |
|---|---|---|
| W.R.W. | J.C.B. | CS1 |
| Date | Project No. | |
| 2012-10-17 | 160210480 | |

V:\01602\Active\160210480\design\drawings\class_ea\report\esr_dwgs\typicals-OPT1-4
2012/10/17 10:52 AM by:white, bill (kitchener)

Region of Peel

# Mayfield Road

## Class Environmental Assessment

Heart Lake Road to Airport Road

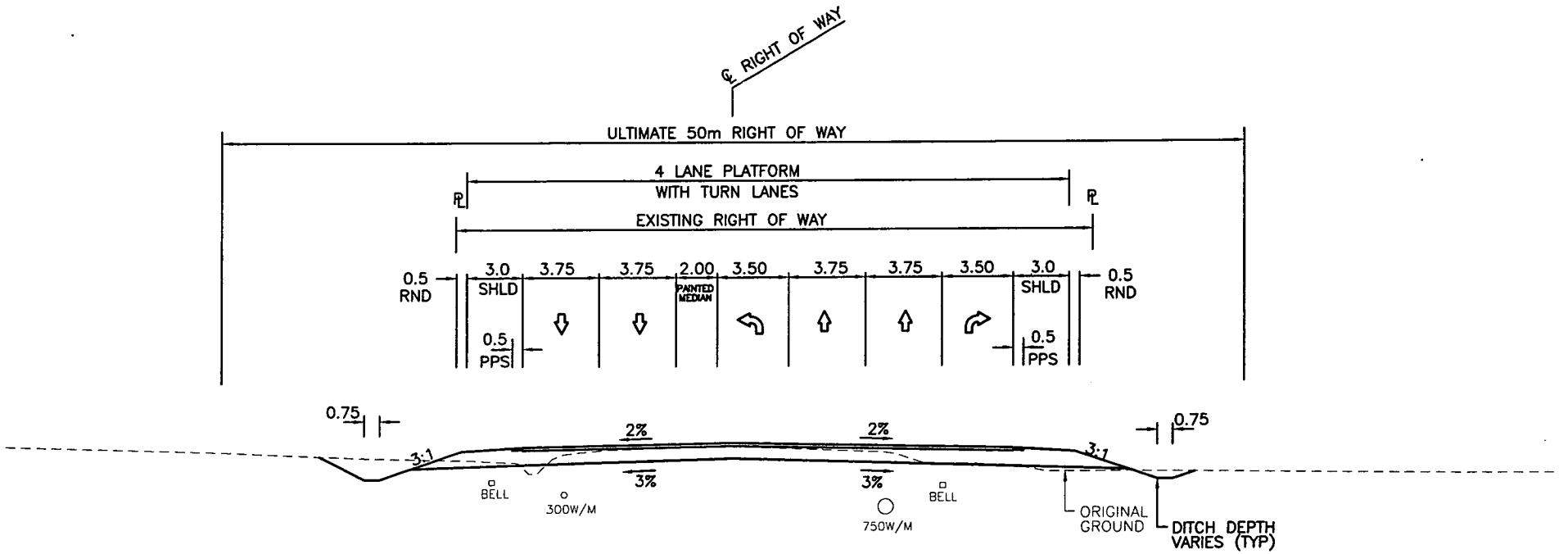
## Environmental Study Report




**STANTEC CONSULTING LTD.**
49 Frederick Street
Kitchener, Ontario N2H 6M7


May 2004

Stantec




W:\Active\60210370\design\drawing\class_ea\report\typl_60210370_mayfield.dwg
2004-04-07 08:08AM By: bwhite

Stantec

MAYFIELD ROAD CLASS EA
REGION OF PEEL
DIXIE ROAD TO AIRPORT ROAD

TYPICAL 4-LANE
RURAL ROAD SECTION

| Date: | Scale: | Project No. | Figure No. |
|---|---|---|---|
| 04/07/04 | N.T.S. | 60210370 | Figure 5.2 |

90 Km/h DESIGN SPEED

80 Km/h DESIGN SPEED

80 Km/h DESIGN SPEED

AIRPORT ROAD

AT THE DETAIL DESIGN STAGE THE TURN LANE REQUIREMENTS AT AIRPORT ROAD MUST BE REVIEWED BASED ON AN UPDATED TRAFFIC ANALYSIS.

ILLUSTRATED INTERSECTION IMPROVEMENT'S AS PER COMPLETED AIRPORT ROAD CLASS ENVIRONMENTAL ASSESSMENT.

REQUIRED CULVERT EXTENSIONS AND CHANNEL IMPROVEMENTS TO BE DETERMINED

REGION OF PEEL STRUCTURE #140810 3m WIDE CONCRETE BOX CULVERT (OPEN BOTTOM)

SEE STRUCTURE DRAWING

120m TAPER

30m PARALLEL LANE

150m LEFT TURN STORAGE

70m RIGHT TURN TAPER

70m PARALLEL LANE TO BE CONFIRM DURING FINAL DESIGN

50m RIGHT TURN STORAGE

COSIMO & IDA CRUPI

GRADING LIMIT MODIFICATIONS MAY BE REQUIRED DURING FINAL DESIGN UPON COMPLETION OF CULVERT HYDRAULIC MODELLING (TYP.)

ADDITIONAL CULVERT RELIEF REQUIRED. CULVERT DETAILS TO BE CONFIRMED DURING FINAL DESIGN.

FIELD ENTRANCE LOCATIONS TO BE REVIEWED DURING FINAL DESIGN (TYP.)

CURB & GUTTER LIMITS TO BE DETERMINED DURING FINAL DESIGN (TYP.)

1526400 Ontario Inc.

12050

TULLAMORE COUNTRY MARKET

12016

1509429 ONTARIO INC.

5981 ESSO 7/24 EXPRESS COFFEE TIME

FUTURE CITY OF BRAMPTON GATEWAY FEATURE

AMJER & DALJIT BOLA

JOT HOLDINGS INC.

LARISSA BARBASH

5923

5955

6034

6045 (AUDETTE)

6045

6086

11850

11903

11859

11796

TOWN OF CALEDON
FORMERLY TOWNSHIP OF ALBION
CON 1
LOT 1

LOT 17
CON 7 ND
FORMERLY TOWNSHIP OF TORONTO GORE
CITY OF BRAMPTON

6.000 WIDE BELL EASEMENT

℄ RIGHT OF WAY

ULTIMATE 50m RIGHT OF WAY

ULTIMATE BOULEVARD | 4 LANE PLATFORM WITH TURN LANES | ULTIMATE BOULEVARD

EXISTING RIGHT OF WAY

0.5 | 3.75 | 3.75 | 2.0 | 3.50 | 3.75 | 3.75 | 3.50 | 0.5 | VARIES

1.0m KILL STRIP | RAISED MEDIAN | 1.0m KILL STRIP

BELL | GAS

SEMI-MOUNTABLE CURB & GUTTER | 300W/M | 750W/M | SEMI-MOUNTABLE CURB & GUTTER | ORIGINAL GROUND

Legend

- EXISTING RIGHT-OF-WAY
- ULTIMATE RIGHT-OF-WAY
- PROPOSED IMPROVEMENTS (BY OTHERS)
- EXISTING PAVEMENT
- PROPOSED PAVEMENT WIDENING
- PROPOSED IMPROVEMENTS (BY OTHERS)
- PRELIMINARY PROPERTY ACQUISITION REQUIREMENTS

Stantec

1:2000 0 20 60 100m

MAYFIELD ROAD CLASS ENVIRONMENTAL ASSESSMENT & PRELIMINARY DESIGN STUDY
PEEL REGION

RECOMMENDED DESIGN CONCEPT
MAYFIELD ROAD
HEART LAKE ROAD TO AIRPORT ROAD

| Date: | Scale: | Project No. | Figure No. |
|---|---|---|---|
| APRIL 2004 | 1:2000 | 60210370 | **Figure J8** |

# Environmental Study Report

# Airport Road

from 1.0 km north of Mayfield Rd to 0.6 km north of King St

***Schedule C Class Environmental Assessment Study***












Region of Peel
Working for you

## 5.0 DESCRIPTION OF RECOMMENDED DESIGN

The proposed design criteria for the widening of Airport Road are based on a design speed of 90 km/hour in rural sections and 70 km/hour within Sandhill as presented in **Table 1** below.

| DESIGN PARAMETERS | PRESENT CONDITIONS | DESIGN STANDARDS / MINIMUMS | | PROPOSED STANDARDS |
|---|---|---|---|---|
| | | TAC | MTO | |
| Row Width | 36m | 20 - 45 | N/A | 45 m (1) |
| Posted Speed | 80 & 60km/hr. (2) | 80 km/hr. | 80 km/hr. | 80 & 60km/hr. (2) |
| Design Speed (D.S.) | 90 & 70km/hr (3) | 90 km/hr. | 90 km/hr. | 90 & 70km/hr. (3) |
| Minimum Stopping Sight Distance | 95 m | 130-170 m | 160 m | 160 m |
| Equivalent Minimum 'K' Factor for 90km/hr. D.S. | n/a | 30 – 40 Sag<br>32 – 53 Crest | 40 Sag<br>50 Crest | 30 Sag<br>32 Crest |
| Equivalent Minimum 'K' Factor for 70km/hr. D.S. | n/a | 20 – 25 Sag<br>16 – 23 Crest | 25 Sag<br>25 Crest | 25 Sag<br>25 Crest |
| Minimum Radius for 70km/hr. D.S. | | 190 m | 190 m | 190 m |
| Minimum Radius for 90km/hr D.S | | 340 m | 340 m | 340 m |
| Number of Lanes | 2 Lanes Rural | 4 | 4 | 5 Lane Rural (4) |
| Lane Width for 90km/hr. D.S. | 2 x 3.6 m | 3.5 – 3.7 m | 3.5 m | 3.75m Curb Lanes<br>3.65m Inside Lanes<br>3.5m Turn lanes<br>5.5m Median |
| Lane Width for 70km/hr. D.S. | 2 x 3.6 m | 3.5 – 3.7 m | 3.5 m | 3.75m Curb Lanes<br>3.5m Inside Lanes<br>3.35 -3.5m Turn lanes<br>5.5m Median |
| Boulevard Width | N/A | 3.0 m | 3.0m | 5.5m Min. |

**Table 1 – Design Criteria for Airport Rd from 1.0 km north of Mayfield Rd to 0.6 km north of King St**

### 5.1.4 Cross Sections

Airport Road will be widened to provide a 4-lane cross section and a centre left turn lane within the designated 45.0m right-of-way. The project comprises both rural and urban sections of roadway. The urbanized section is planned within Sandhill. A 5.5m two-way centre left turn lane is provided throughout the corridor to enable safe turning into existing property accesses. A 3.75m curb lane (outer lane) is also provided to assist goods movement as identified in the Peel Strategic Goods Movement Network Study. Details of the typical sections are illustrated in **Exhibit 6** and **Exhibit 7** (pages 37 and 38):
It should be noted that Norris Bridge, Deans Culvert, and Salt Creek Culvert crossing are designed with 1.8m wide shoulder and 2.0m wide sidewalk at the culvert crossing.

### 5.1.5 Cross Slope and Superelevation

A standard 2.0% cross fall is proposed along the corridor.

At roundabout approaches the following will be provided:

- adequate signage to alert drivers about the speed reduction prior to entering the roundabout
- a reverse crown (-2.0%) to reduce lateral force

There are no areas of superelevation within the corridor.

## 5.2 ROUNDABOUT DESIGN

The existing intersections of Old School Road-Healey Road and King Street at Airport Road are proposed as two lane urban roundabouts with a 55.0m Inscribed Circle Diameter (ICD) and 5.0m wide circulatory roadway. The entry and exit width of approaches varies based on the number of entering and receiving lanes. However a minimum width of ± 4.2m per lane is provided for an entry and exit lane.
Both roundabouts will be wide enough to accommodate tractor trailers or any large vehicle turning pattern in all directions. The roundabout approaches are designed with large enough entry and exit radii so that tractor trailers will be able to make a right turn without encroaching onto another lane or travelling over roadside curbs.

**Rural and Urban Sections**

**Rural section** refers to those portions of road that utilize ditches for storm water drainage and infiltration and typically have a paved shoulder that may be used for safe stopping or for bicyclists.

**Urban section** refers to those portions of road (within Sandhill) that utilize curbs and gutters to direct storm water from the road surface and typically have sidewalks and/or multi-use trails for pedestrians.

**Cross Slope and Superelevation**: On straight sections of normal two-lane roads, the pavement cross section is usually highest in the center and drains to both sides. Cross slope is used to provide drainage so that the water will run off the surface to a gutter or ditch.

On horizontal curves, the cross slope is banked (**superelevated**) to reduce steering effort and lateral force required to go around the curve.

## *Roundabout Terms*

**Inscribed Circle Diameter** is the basic limit used to define the size of a roundabout. It is measured between the outer edges of the circulatory roadway.

The **Centre Island** is the raised area in the centre of a roundabout around which traffic circulates**.**

The **Apron** is the crossable area (with mountable curb) at the edge of the centre island which may be used by long vehicles as extra space for turning as they move through the roundabout.

Raised Splitter Islands are designed at all approaches to provide smooth transitioning of traffic into the roundabout. It also serves as a refuge area for pedestrians and cyclists crossing the road. Consideration to existing and proposed accesses to abutting properties was given while designing the lengths of these islands, which varies between 50m to 165m. No turn restrictions are intended for existing properties or future developments unless the access is located close to the intersection. In this case access would be restricted to right-in/right-out only.

3.0m wide crosswalks are provided for pedestrians at a distance of 15m from the roundabout entries and exits. It is required that all crosswalk ramps be complaint with the Accessibility for Ontarians with Disabilities Act (AODA) and may include accessible curb ramps and tactile surfaces. The proposed roundabout design will provide surface indicators at crosswalk ramps to accommodate users who have accessibility needs.

A 5.0m truck apron with mountable curb is designed with the central island to provide adequate space for larger vehicles making a left turn. The inner island will be landscaped.

The Federal Highway Administration (FHWA) recommends successive curves at roundabout approaches to slow traffic down before entering the roundabout. The suggested treatment is to create a broad radius as vehicles start to slow down, followed by a moderate radius in the middle of the approach, and finally a sharp radius prior to entering the roundabout. Flatter exiting curves are provided at each approach for acceleration and to avoid unnecessary traffic delay within the roundabouts.

The paved shoulders (in the rural section) and bike lanes (in the urban section) will be ramped into a curbed and raised multi-use path for cyclists to cross the roundabout without entering main travel lanes. This is primarily done for safety reason to provide cyclists with an off-street path for road crossing. Cyclists may also choose to enter the roundabout in the same manner as other vehicles, however not recommended. Details of the proposed roundabout geometrics are as follows:

### 5.2.1 Healey Road / Old School Road Intersection

- Horizontal alignments of Airport Road at the side streets is skewed at 85°
- Northbound and Southbound Approach: Two lane approaches along Airport Road in each direction.
- East approach: Two entry (westbound) and a single receiving lane (eastbound)
- West approach: Single out (eastbound) and two receiving lanes (westbound) tapered off to a single lane to match existing configuration

### 5.2.2 King Street Intersection

- An 8 degree deflection is provided between the existing and proposed horizontal alignment at the King Street roundabout. The deflection amount was determined by adjusting the impact to property without compromising safety and design standards.

- Northbound and Southbound Approach: Two lane approaches along Airport Road in each direction.
- West and East Approach: Flared from an existing single lane to two entry lanes at both approaches. The two receiving lanes will merge into a single lane to match existing configuration.

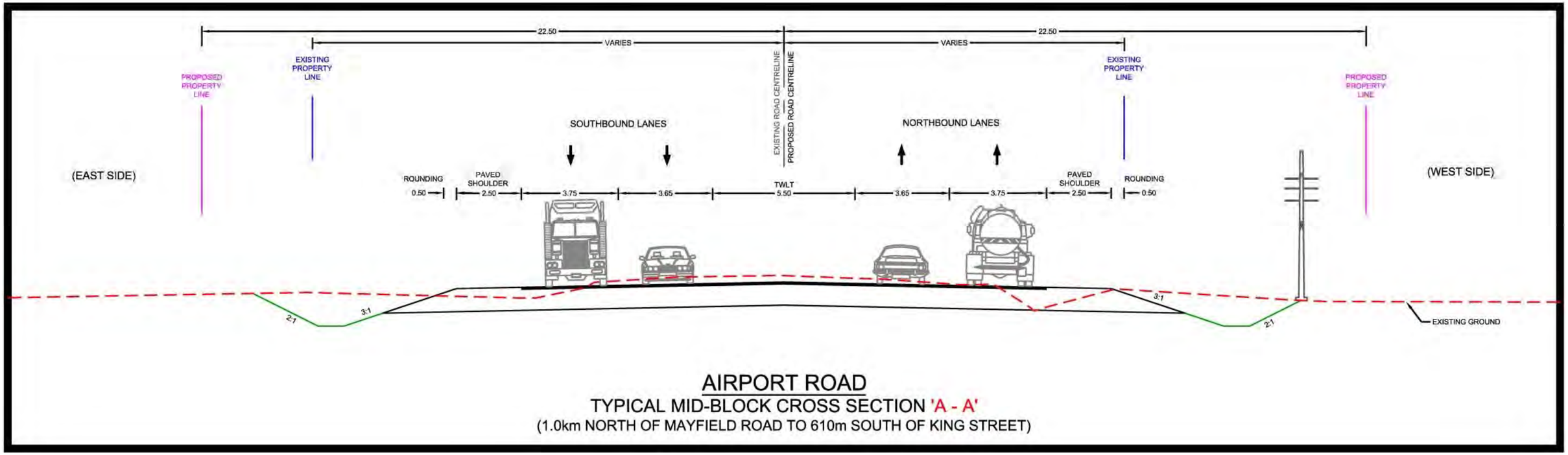
## 5.3 TYPICAL CROSS SECTIONS and RECOMMENDED DESIGN

The following exhibits illustrate the proposed rural and urban cross sections and the recommended design alternative as discussed

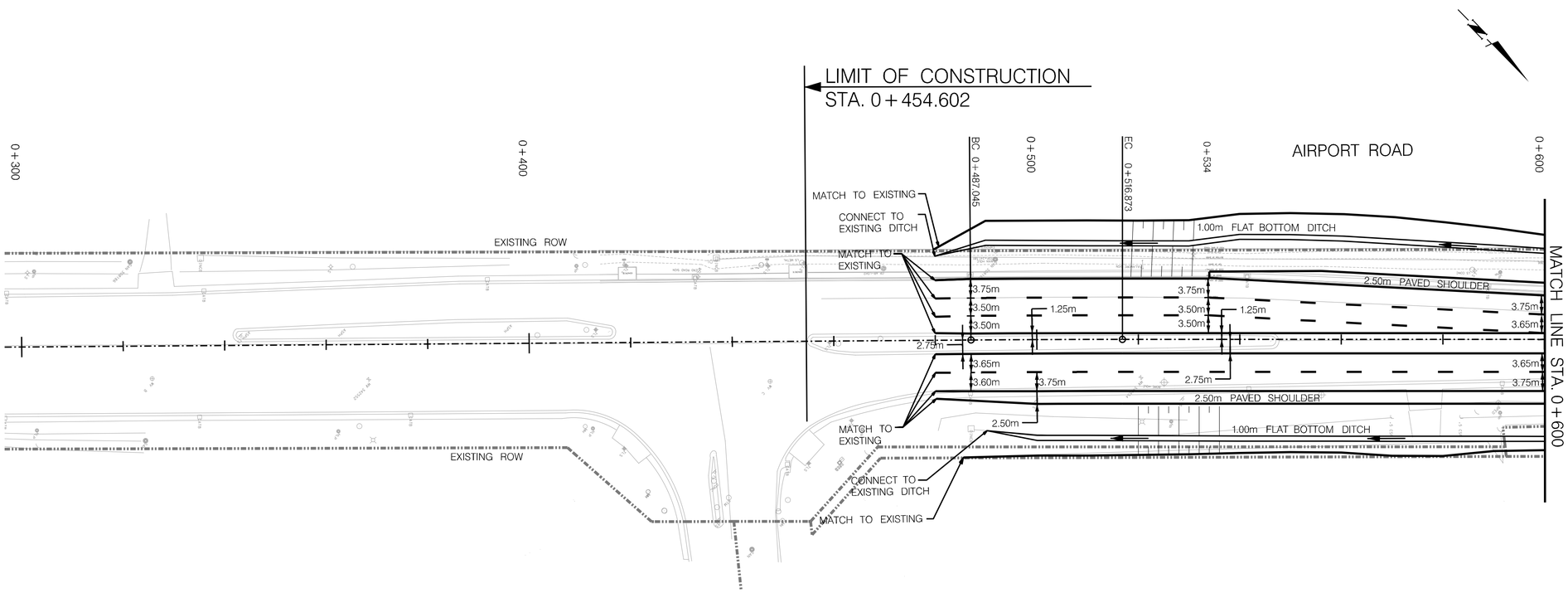
## Exhibit 6 - Rural Section – Airport Road 1.0 km north of Mayfield Road to 610m south of King Street (south of Sandhill)

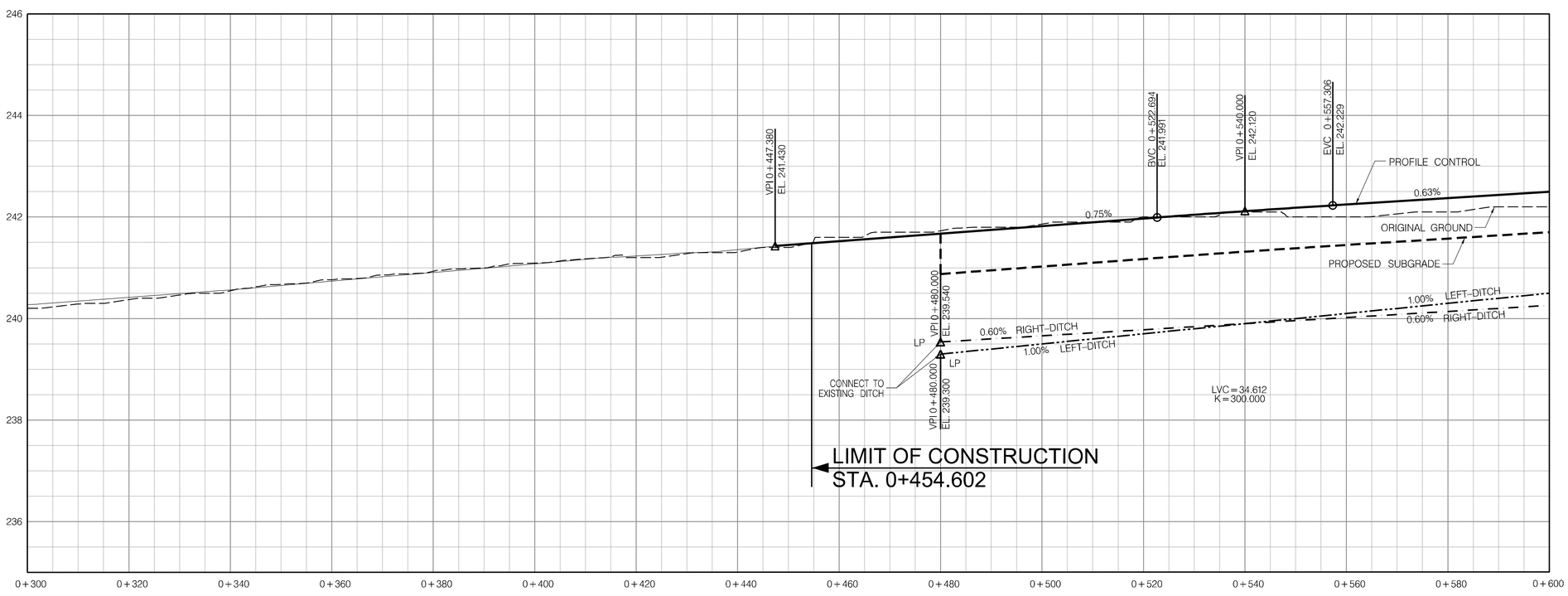
***The rural mid-block cross section at the above locations features 2 north bound and 2 southbound through lanes and a centre turning lane.***

- Begins at Station 0+640 and Ends at Station 4+900
- 3.65m Through Lane (inner lane)
- 3.75m Curb Lane (outer lane)
- 2.5m Paved Shoulder
- 0.5m Rounding to ditch
- 1m Flat Bottom Ditch with typical 3:1 foreslope, 2:1 backslope




AIRPORT ROAD
TYPICAL MID-BLOCK CROSS SECTION 'A - A'
(1.0km NORTH OF MAYFIELD ROAD TO 610m SOUTH OF KING STREET)



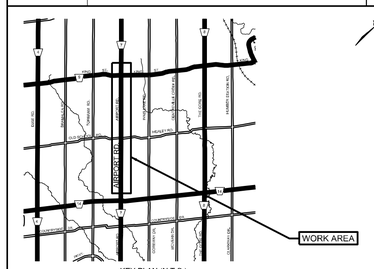

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | | | | | | | | 241.524 | 241.673 | 241.822 | 241.971 | 242.115 | 242.245 | 242.371 | 242.497 |
| EXISTING | 240.200 | 240.374 | 240.548 | 240.764 | 240.930 | 241.093 | 241.200 | 241.312 | 241.600 | 241.728 | 241.862 | 242.000 | 242.100 | 242.000 | 242.100 | 242.200 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |




KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

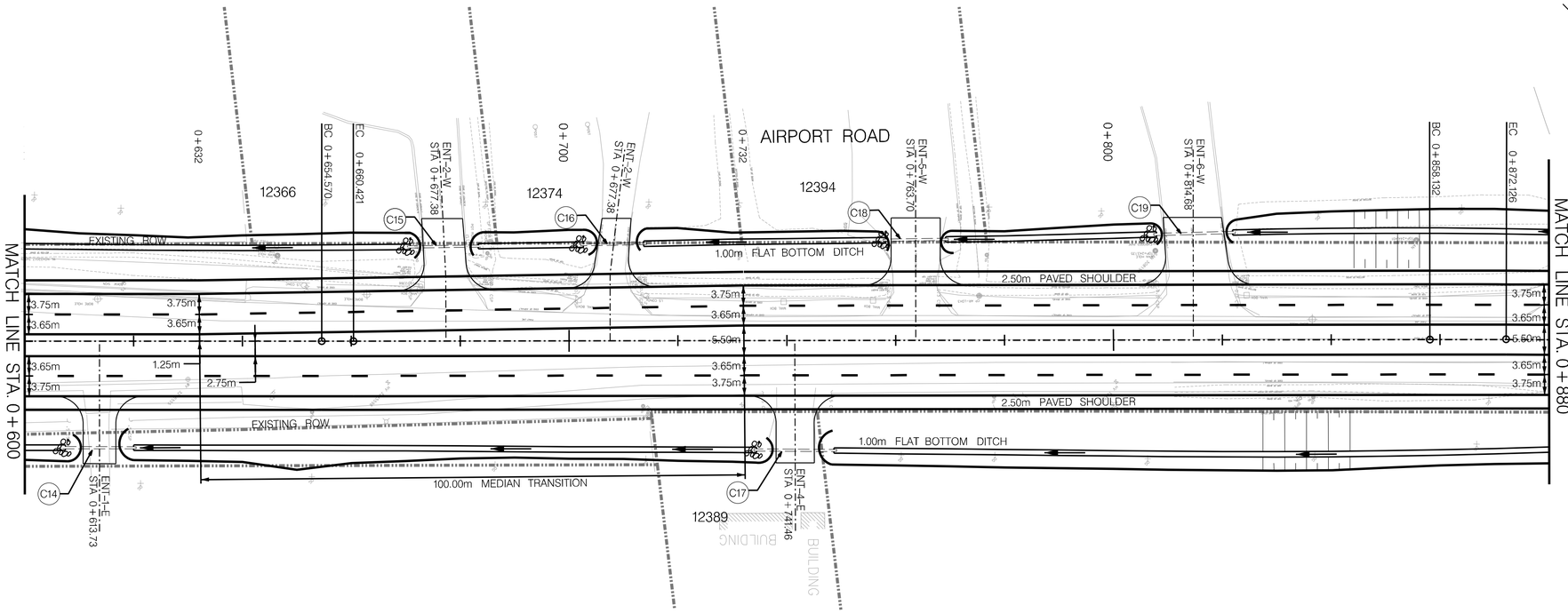
1m 0 1 2 3m — VERTICAL SCALE

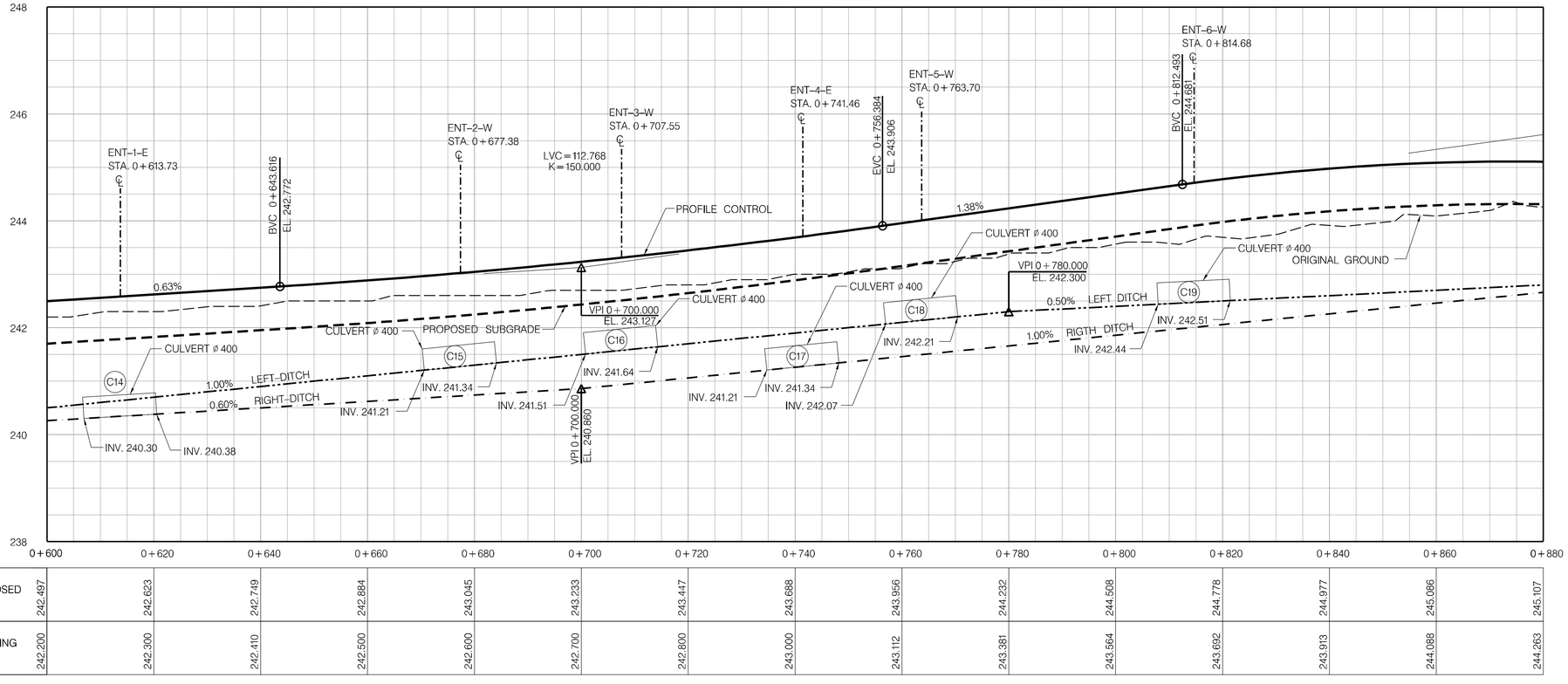
Region of Peel
Working for you

# AIRPORT ROAD
## PLAN AND PROFILE

( FROM STA. 0+300 TO STA. 0+600)

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-001 |



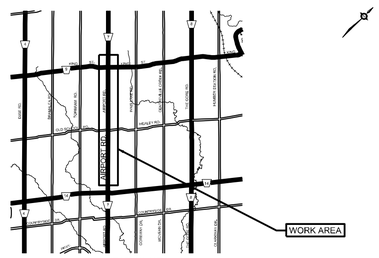

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 242.497 | 242.623 | 242.749 | 242.884 | 243.045 | 243.233 | 243.447 | 243.688 | 243.956 | 244.232 | 244.508 | 244.778 | 244.977 | 245.086 | 245.107 |
| EXISTING | 242.200 | 242.300 | 242.410 | 242.500 | 242.600 | 242.700 | 242.800 | 243.000 | 243.112 | 243.381 | 243.564 | 243.692 | 243.913 | 244.088 | 244.263 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |




KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Description Location — Elev.

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Vertified In Field By Contractor.

Designed by

Approved by

Chkd.

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

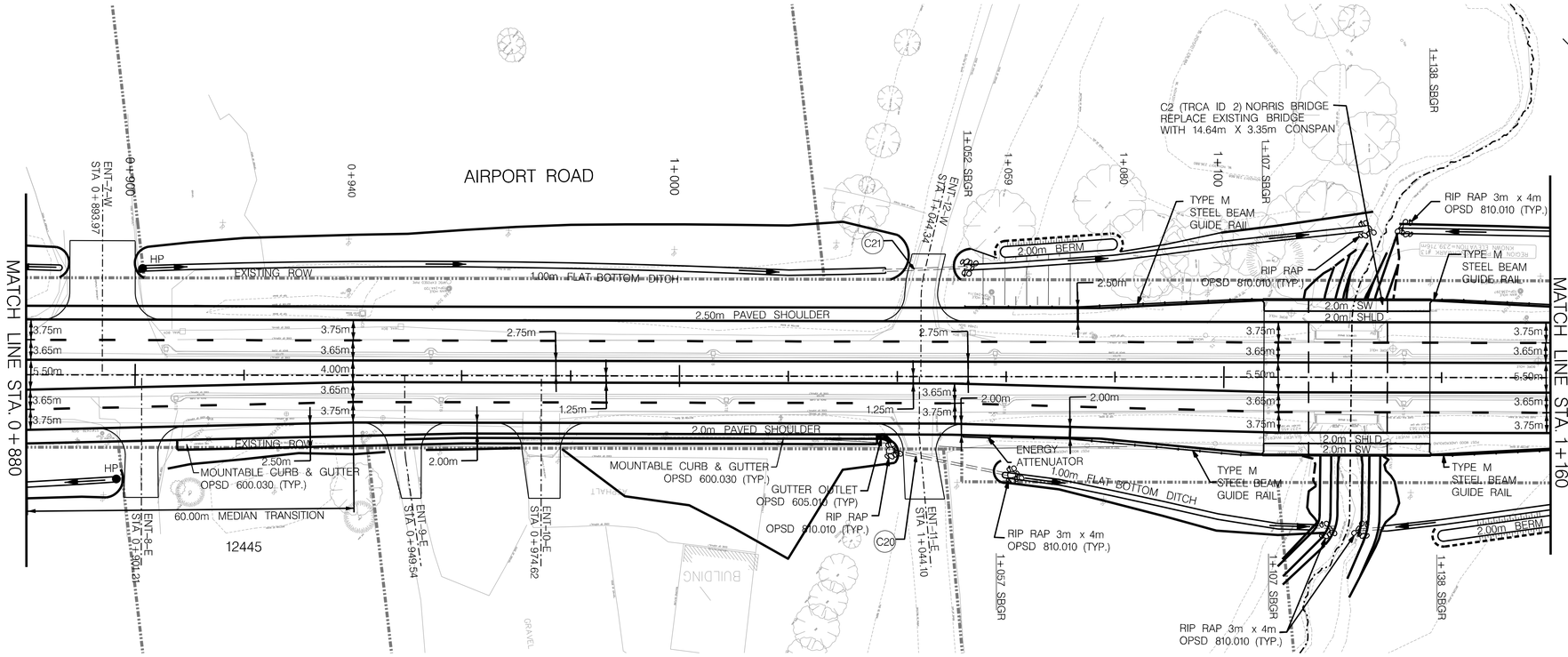
1m 0 1 2 3m — VERTICAL SCALE

Region of Peel
Working for you

# AIRPORT ROAD
## PLAN AND PROFILE

(FROM STA. 0+600 TO STA. 0+880)

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-002 |



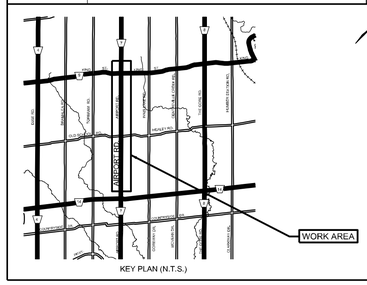

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 245.107 | 245.039 | 244.882 | 244.636 | 244.301 | 243.877 | 243.364 | 242.775 | 242.241 | 241.841 | 241.575 | 241.441 | 241.441 | 241.575 | 241.841 |
| EXISTING | 244.263 | 244.296 | 244.178 | 243.950 | 243.628 | 243.240 | 242.723 | 242.120 | 241.502 | 240.877 | 240.510 | 240.355 | 240.339 | 240.357 | 240.645 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |



KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Description Location — Elev.

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

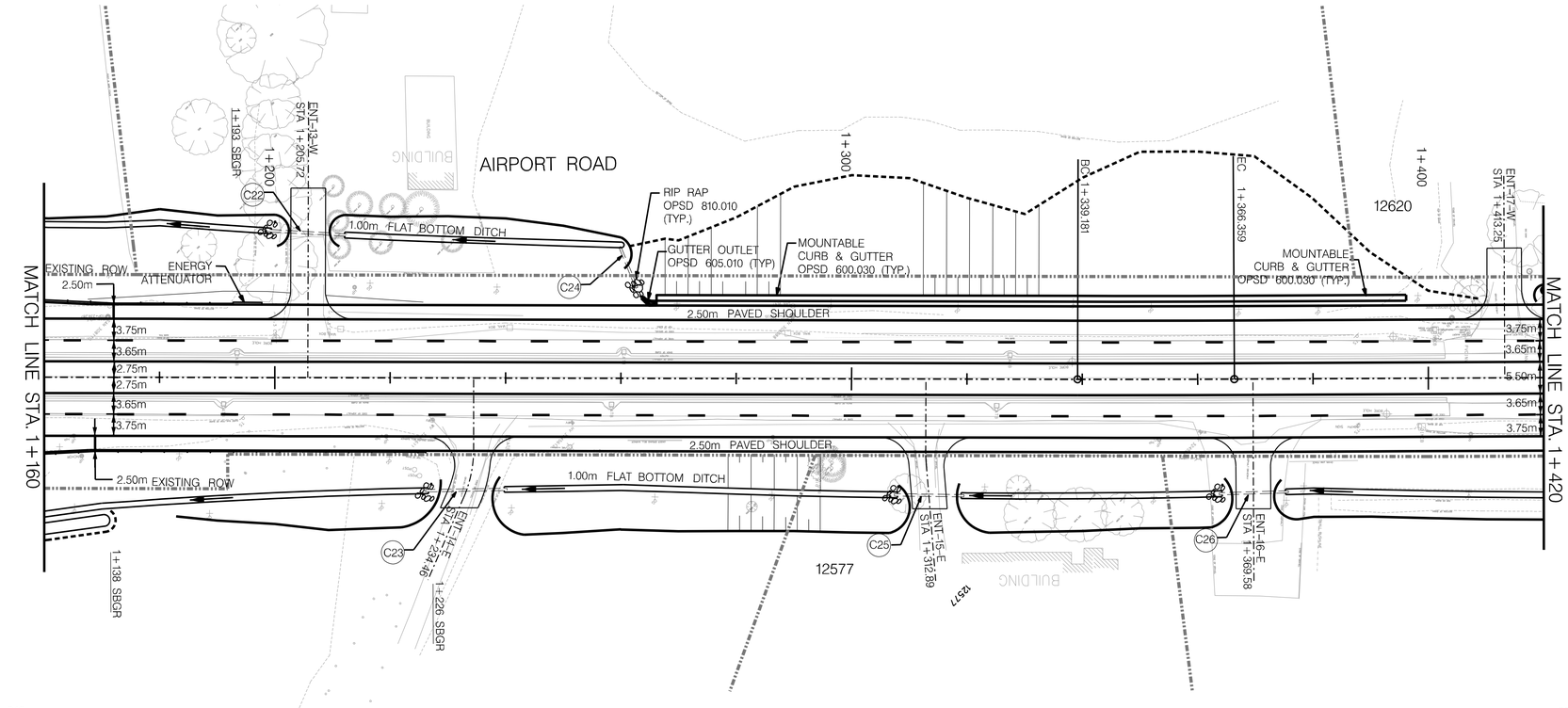
1m 0 1 2 3m — VERTICAL SCALE

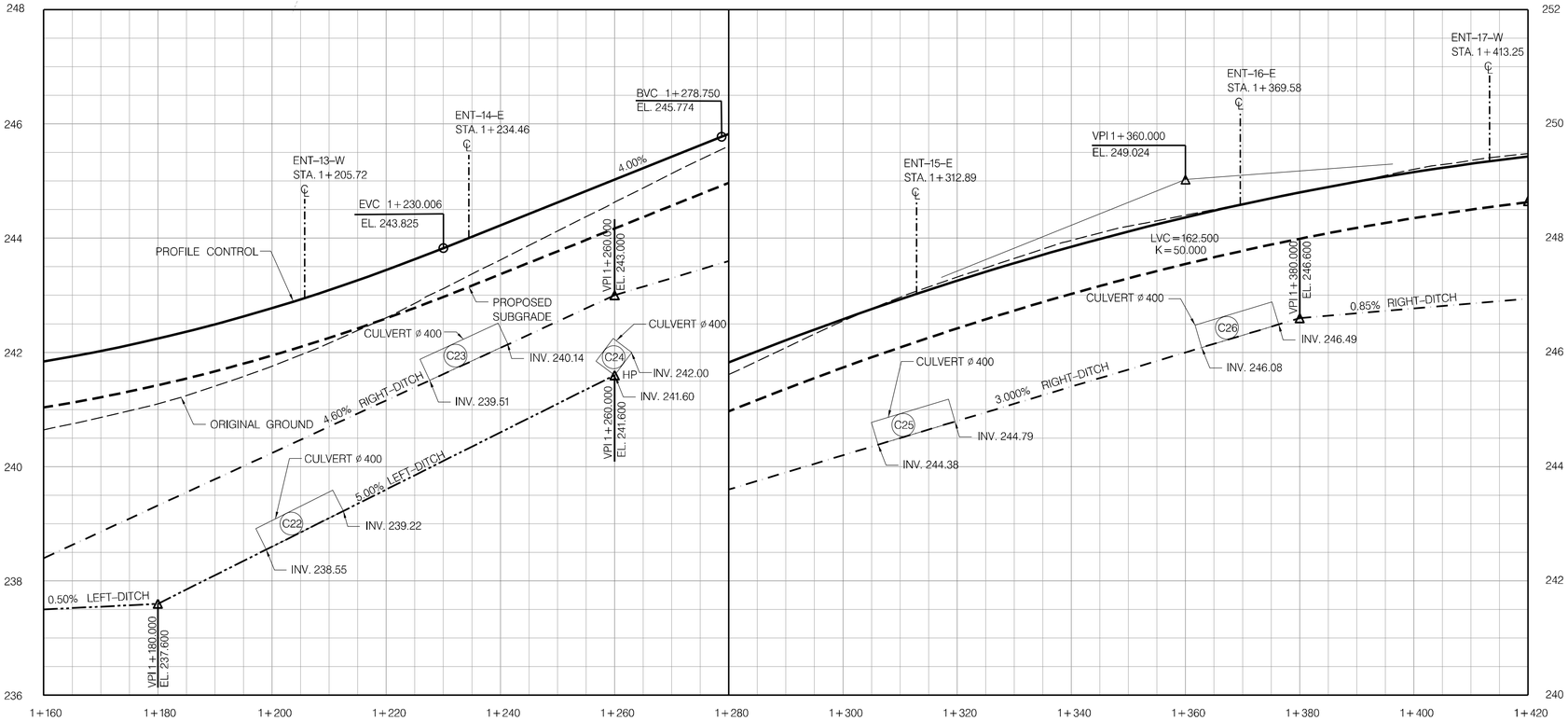
Region of Peel
Working for you

# AIRPORT ROAD
## PLAN AND PROFILE

(FROM STA. 0+880 TO STA. 1+160)

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | X-XX | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-003 |



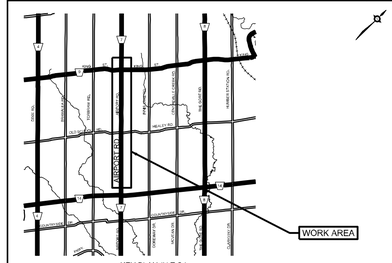

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 241.841 | 242.241 | 242.774 | 243.441 | 244.224 | 245.024 | 245.824 | 246.579 | 247.254 | 247.849 | 248.364 | 248.799 | 249.154 | 249.429 |
| EXISTING | 240.645 | 241.101 | 241.759 | 242.608 | 243.618 | 244.630 | 245.612 | 246.547 | 247.317 | 247.961 | 248.402 | 248.788 | 249.203 | 249.478 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |




KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No, Description Location — Elev.

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

1m 0 1 2 3m — VERTICAL SCALE

Region of Peel
Working for you

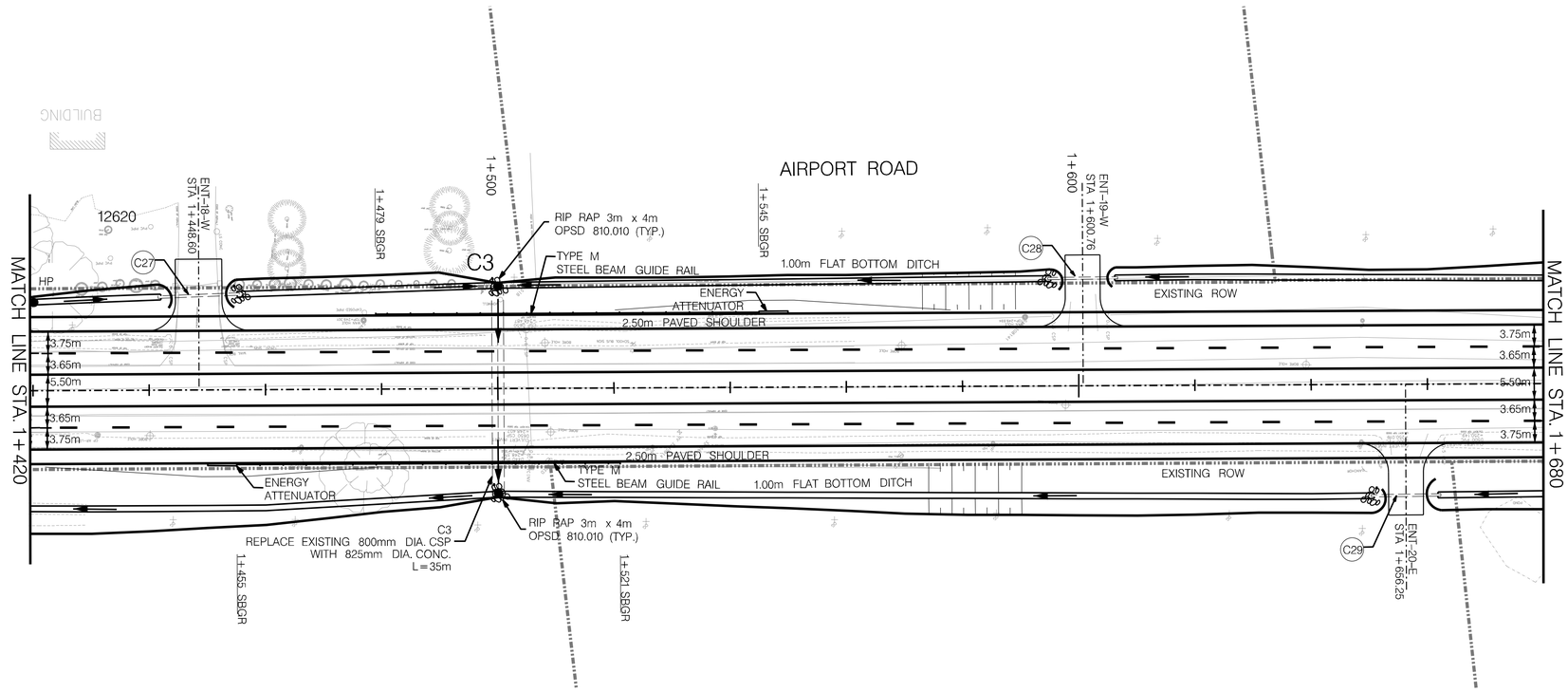
# AIRPORT ROAD
## PLAN AND PROFILE

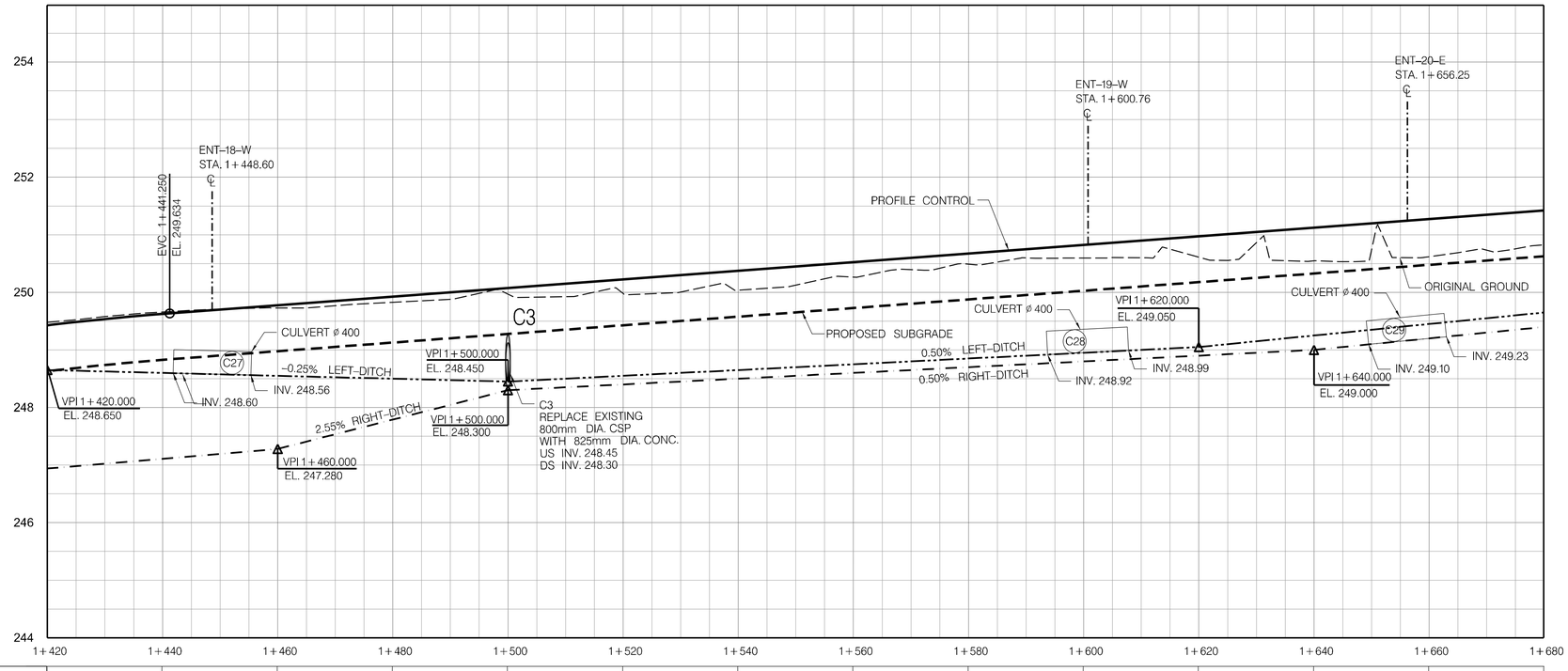
(FROM STA. 1+160 TO STA. 1+420)

| | | | |
|---|---|---|---|
| CAD Area | X-XX | Area | X-XX |
| Checked by | | Drawn by | G.P. |
| Date | JULY 2018 | Sheet | X of X |

Project No. 14-4030

Plan No. **NC-004**



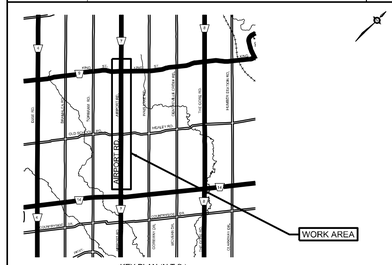

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 249.429 | 249.624 | 249.774 | 249.924 | 250.074 | 250.224 | 250.374 | 250.524 | 250.674 | 250.824 | 250.974 | 251.124 | 251.274 | 251.424 |
| EXISTING | 249.478 | 249.656 | 249.726 | 249.826 | 249.969 | 249.981 | 250.038 | 250.264 | 250.491 | 250.595 | 250.611 | 250.546 | 250.618 | 250.824 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |




KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**2OC** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON
CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

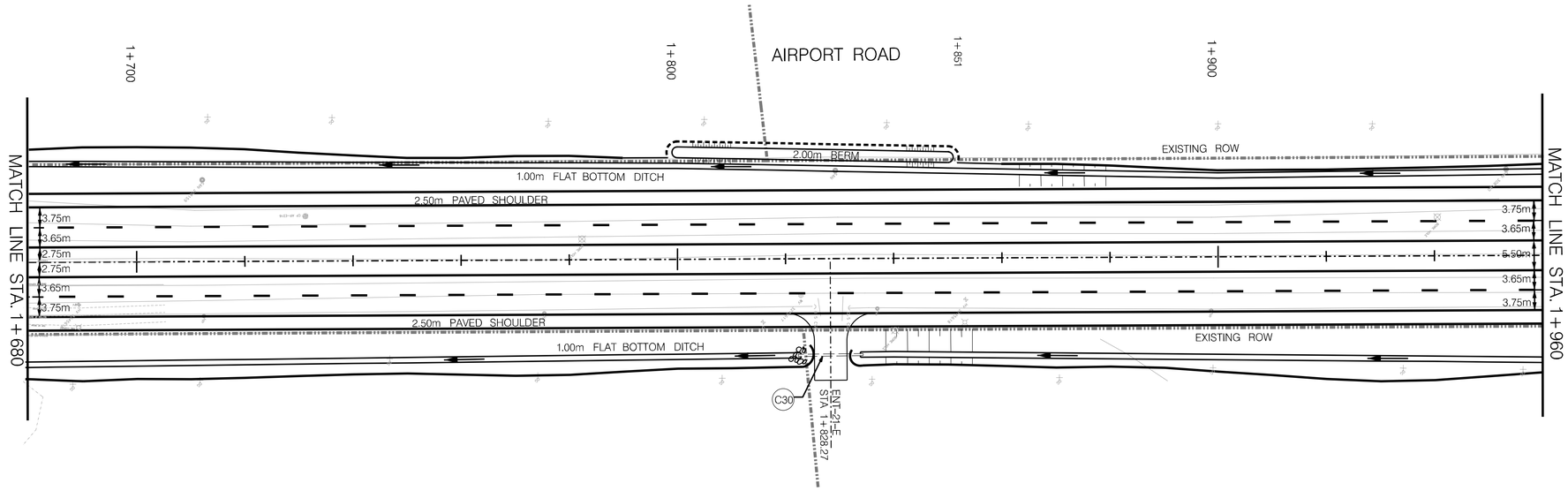
1m 0 1 2 3m — VERTICAL SCALE

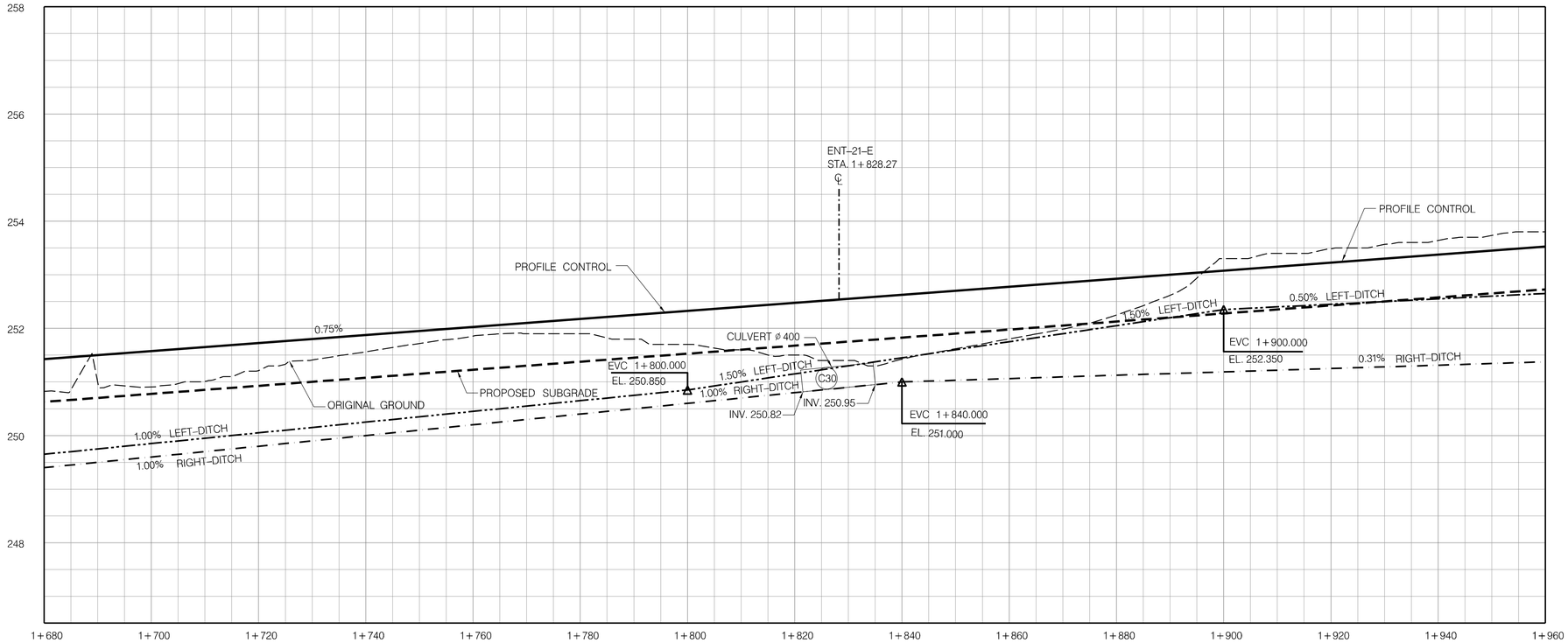
Region of Peel
Working for you

# AIRPORT ROAD
## PLAN AND PROFILE

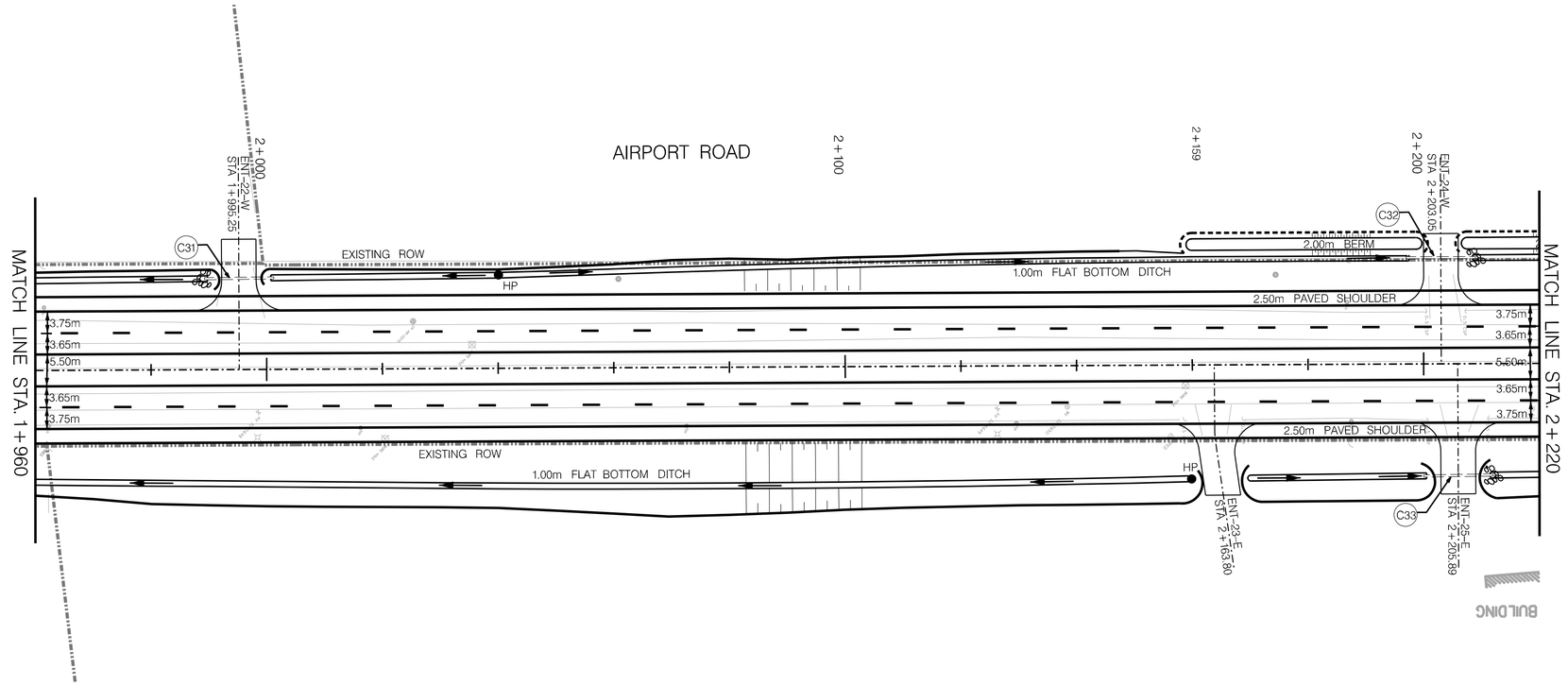
(FROM STA. 1+420 TO STA. 1+680)

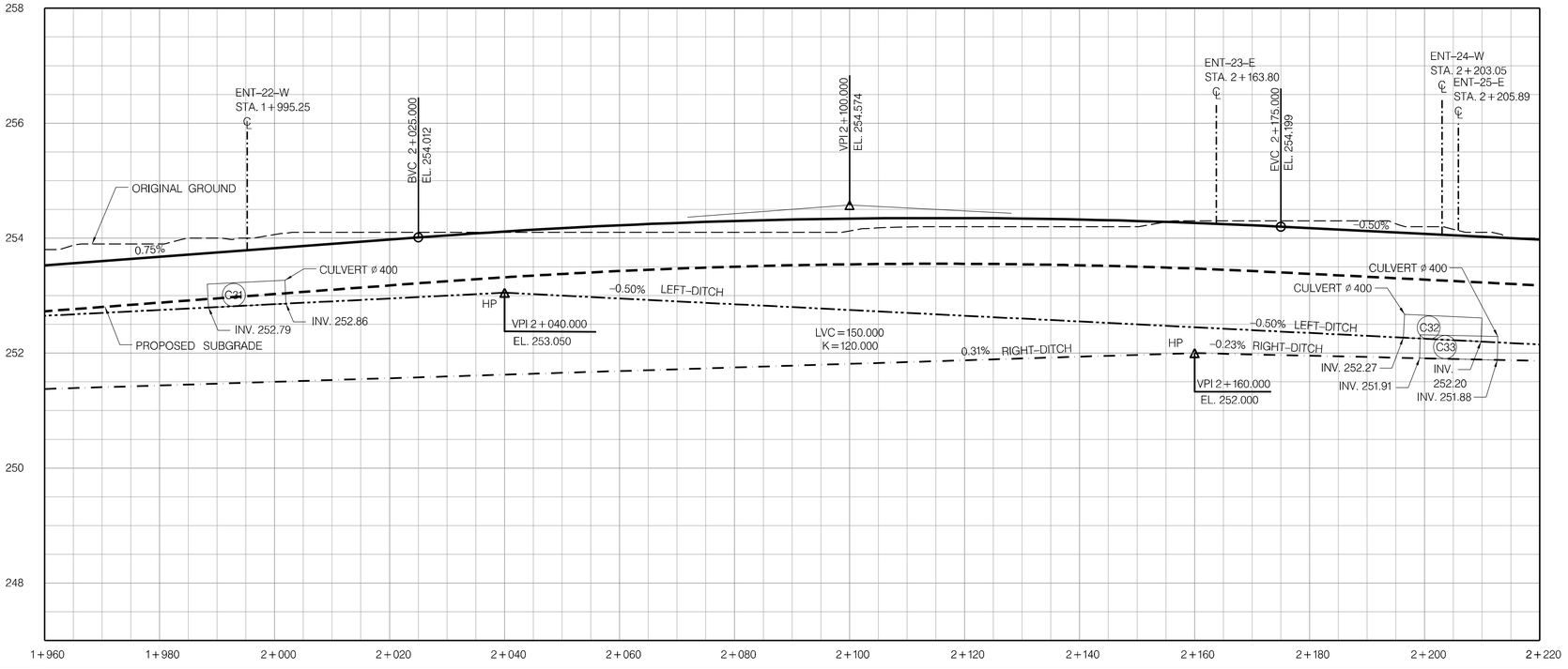
| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-005 |


1+700
1+800
AIRPORT ROAD
1+851
1+900
MATCH LINE STA. 1+680
MATCH LINE STA. 1+960
EXISTING ROW
2.00m BERM
1.00m FLAT BOTTOM DITCH
2.50m PAVED SHOULDER
3.75m
3.65m
2.75m
2.75m
3.65m
3.75m
5.50m
2.50m PAVED SHOULDER
1.00m FLAT BOTTOM DITCH
EXISTING ROW
C30
ENT-21-E
STA 1+828.27


258
256
254
252
250
248
ENT-21-E
STA. 1+828.27
℄
PROFILE CONTROL
PROFILE CONTROL
0.75%
CULVERT ø 400
EVC 1+800.000
EL. 250.850
1.50% LEFT-DITCH
1.00% RIGHT-DITCH
(C30)
INV. 250.82
INV. 250.95
ORIGINAL GROUND
PROPOSED SUBGRADE
1.00% LEFT-DITCH
1.00% RIGHT-DITCH
EVC 1+840.000
EL. 251.000
1.50% LEFT-DITCH
0.50% LEFT-DITCH
EVC 1+900.000
EL. 252.350
0.31% RIGHT-DITCH
1+680
1+700
1+720
1+740
1+760
1+780
1+800
1+820
1+840
1+860
1+880
1+900
1+920
1+940
1+960

| | | |



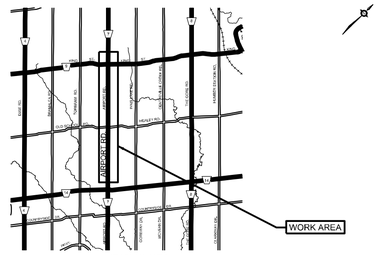

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 253.524 | 253.674 | 253.824 | 253.974 | 254.115 | 254.223 | 254.298 | 254.340 | 254.348 | 254.323 | 254.265 | 254.174 | 254.074 | 253.974 |
| EXISTING | 253.800 | 253.900 | 254.063 | 254.100 | 254.100 | 254.100 | 254.100 | 254.123 | 254.200 | 254.200 | 254.300 | 254.300 | 254.200 | 254.000 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |



KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

### General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**2OC** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

### NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10Om 0 10 20 30m HORIZONTAL SCALE

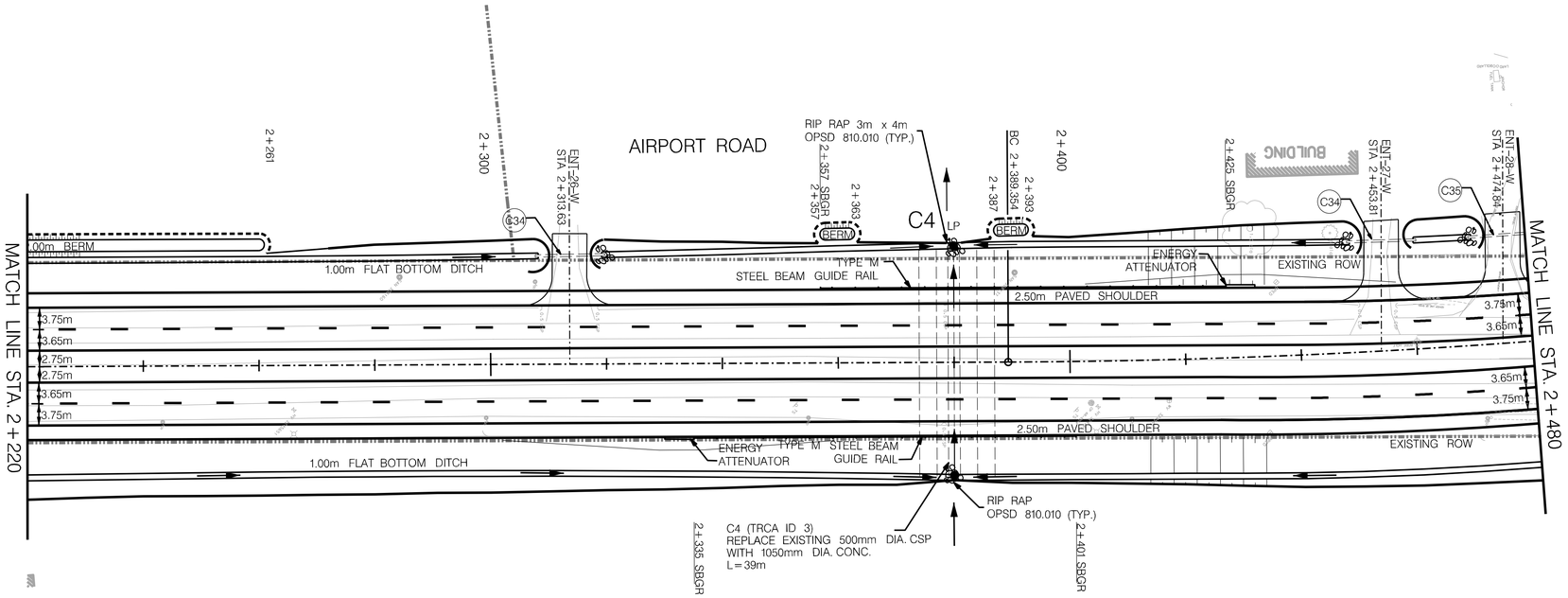
1m 0 1 2 3m VERTICAL SCALE

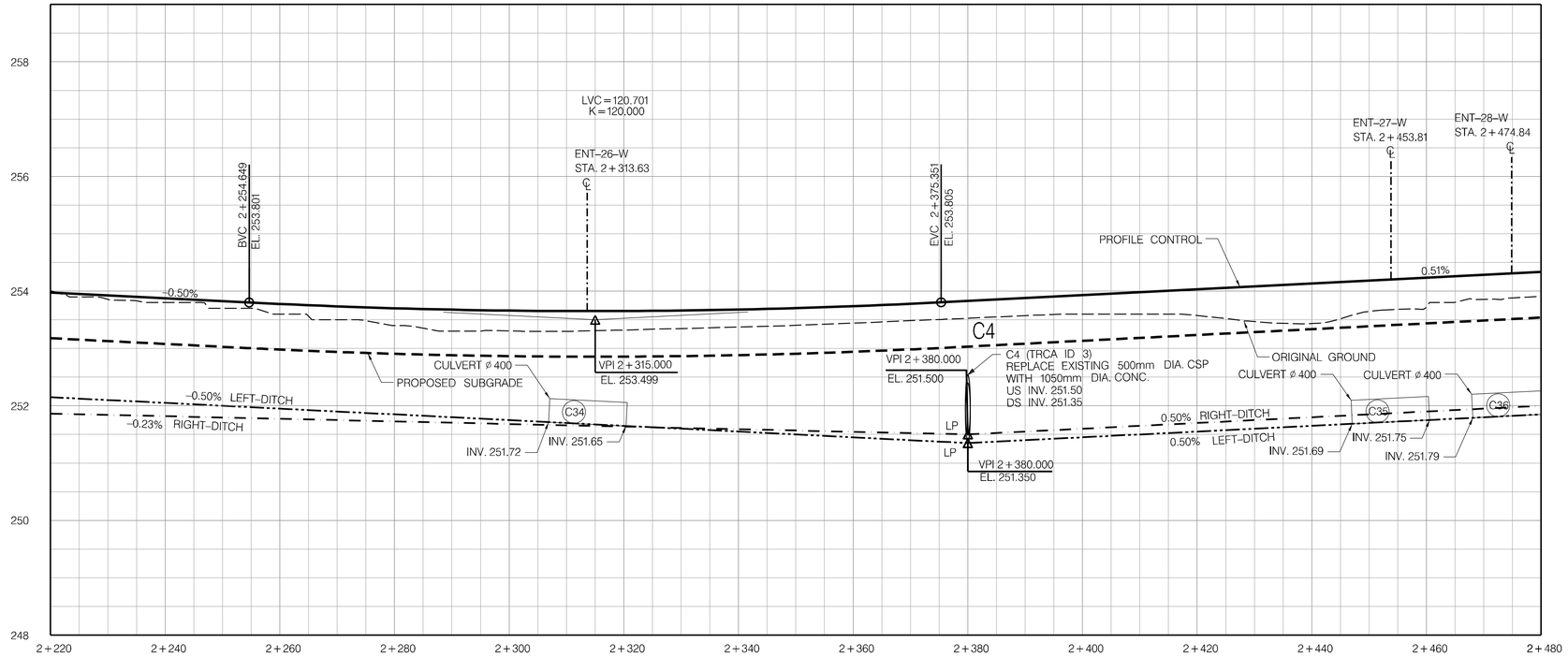
Region of Peel
*Working for you*

# AIRPORT ROAD
## PLAN AND PROFILE

(FROM STA. 1+960 TO STA. 2+220)

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | **NC-007** |



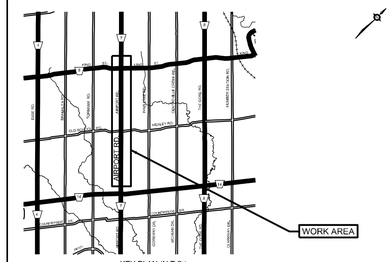

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 253.974 | 253.874 | 253.776 | 253.701 | 253.660 | 253.652 | 253.678 | 253.737 | 253.828 | 253.929 | 254.031 | 254.132 | 254.233 | 254.334 |
| EXISTING | 254.000 | 253.800 | 253.600 | 253.400 | 253.305 | 253.320 | 253.373 | 253.441 | 253.526 | 253.600 | 253.576 | 253.434 | 253.726 | 253.907 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |




KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

### General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

### NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m HORIZONTAL SCALE

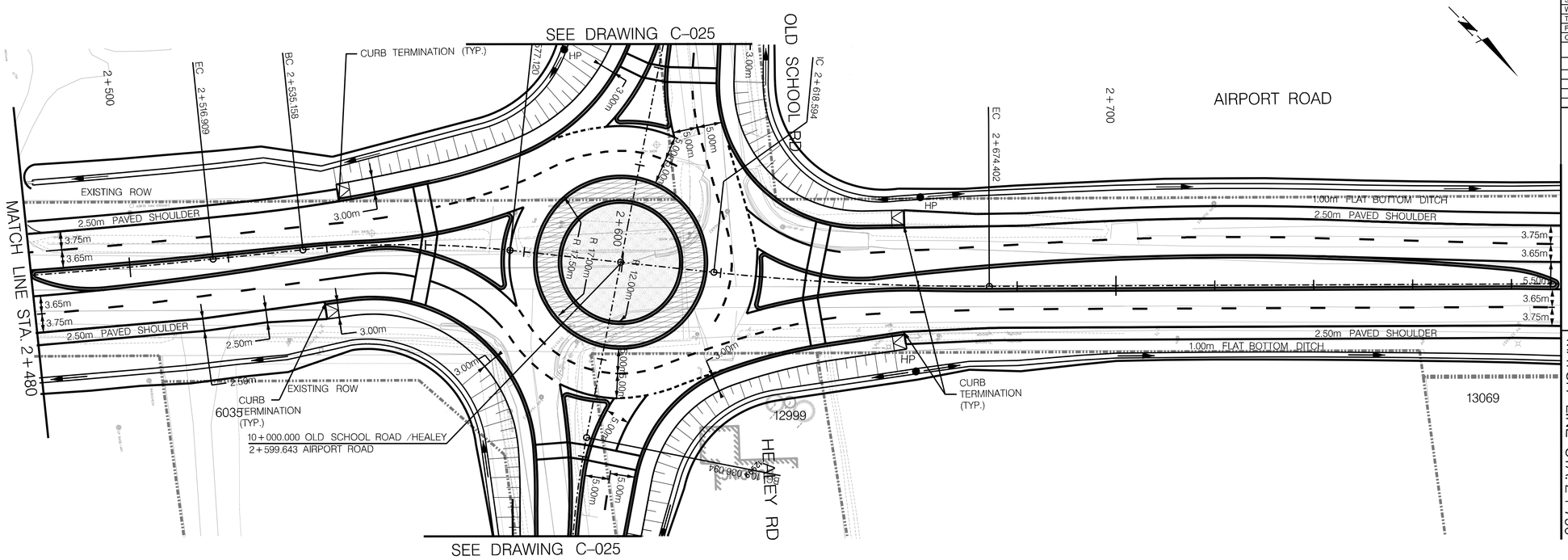
1m 0 1 2 3m VERTICAL SCALE

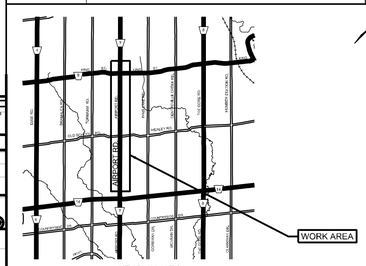
Region of Peel
Working for you

# AIRPORT ROAD
## PLAN AND PROFILE

( FROM STA. 2+220 TO STA. 2+480)

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-008 |




KEY PLAN (N.T.S.)

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

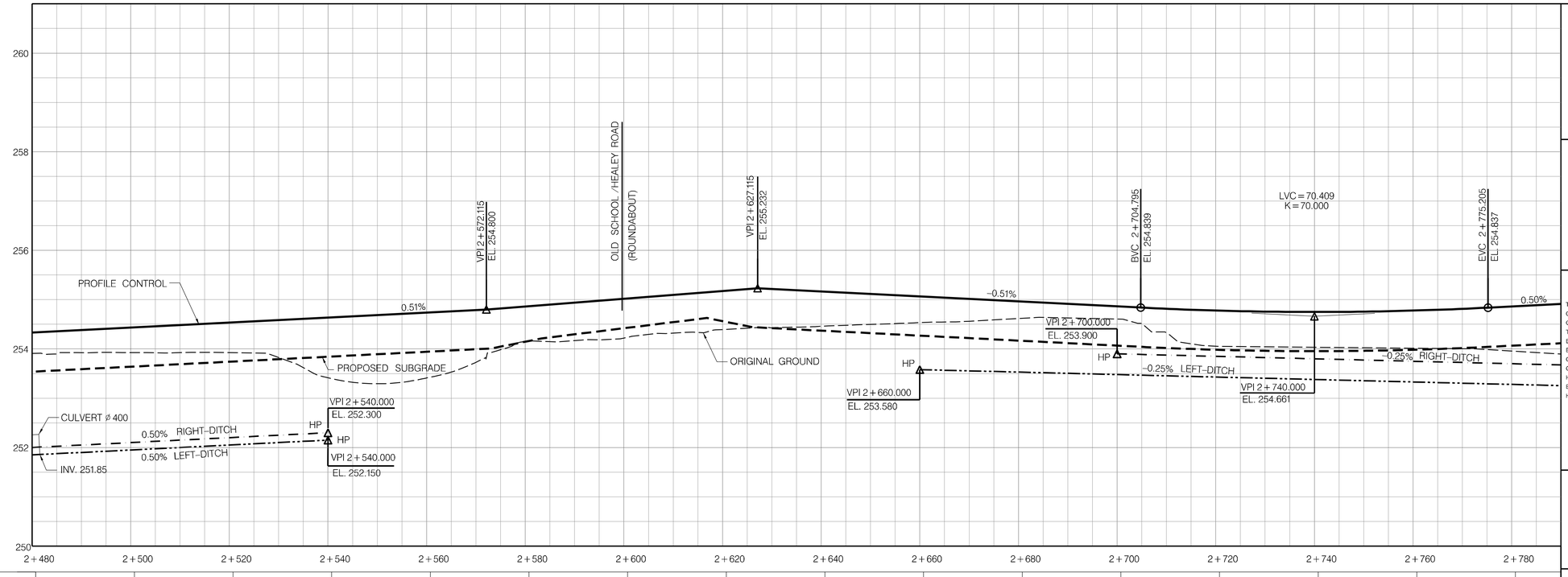
## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |

LEGEND:

LEFT DITCH

RIGHT DITCH




| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 254.334 | 254.435 | 254.536 | 254.638 | 254.739 | 254.862 | 255.019 | 255.176 | 255.167 | 255.066 | 254.964 | 254.863 | 254.779 | 254.750 | 254.777 | 254.861 |
| EXISTING | 253.907 | 253.927 | 253.925 | 253.414 | 253.412 | 254.150 | 254.222 | 254.393 | 254.460 | 254.534 | 254.617 | 254.607 | 254.055 | 254.033 | 254.013 | 253.955 |

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

1m 0 1 2 3m — VERTICAL SCALE

Region of Peel
Working for you

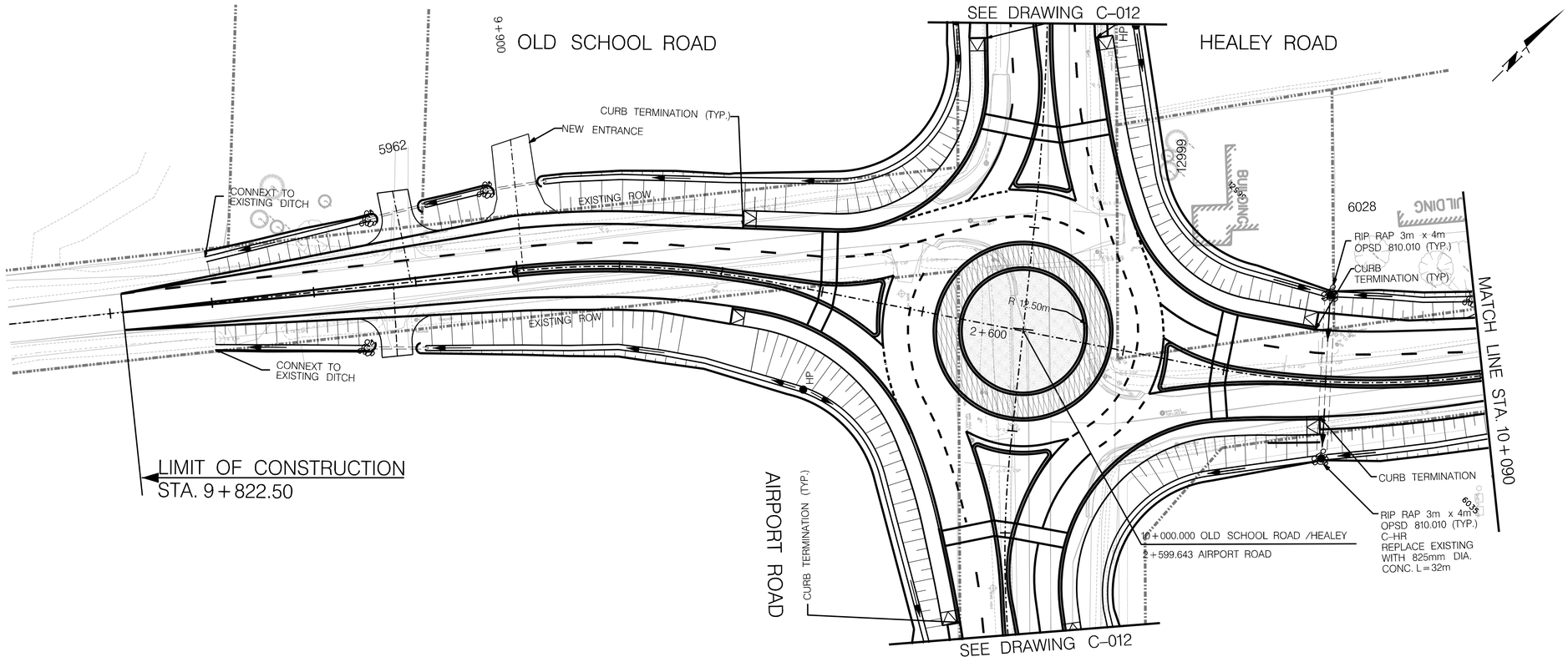
# AIRPORT ROAD
## PLAN AND PROFILE

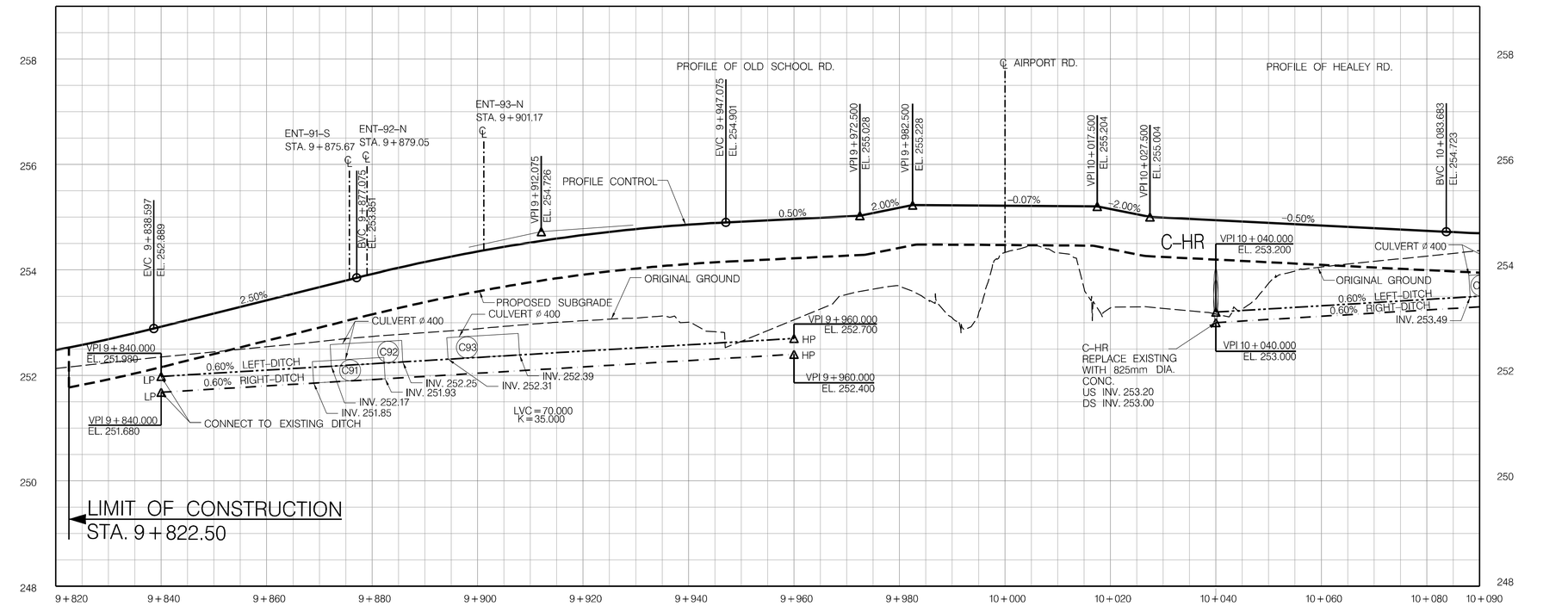
(FROM STA. 2+480 TO STA. 2+790)

| | | | |
|---|---|---|---|
| CAD Area | X-XX | Area | X-XX |
| Checked by | | Drawn by | G.P. |
| Date | JULY 2018 | Sheet | X of X |

Project No. 14-4030

Plan No. **NC-009**



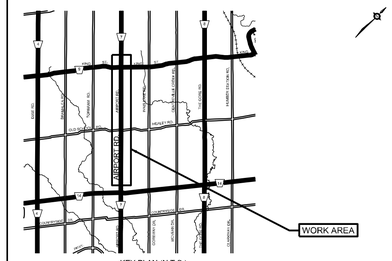

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 252.482 | 252.924 | 253.424 | 253.923 | 254.349 | 254.661 | 254.858 | 254.966 | 255.178 | 255.216 | 255.154 | 254.942 | 254.842 | 254.742 |
| EXISTING | 252.129 | 252.351 | 252.545 | 252.737 | 252.883 | 253.035 | 253.009 | 253.055 | 253.691 | 254.332 | 253.277 | 253.163 | 254.055 | 254.262 |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| | | |
| | | |
| | | |
| | | |



KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON
CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

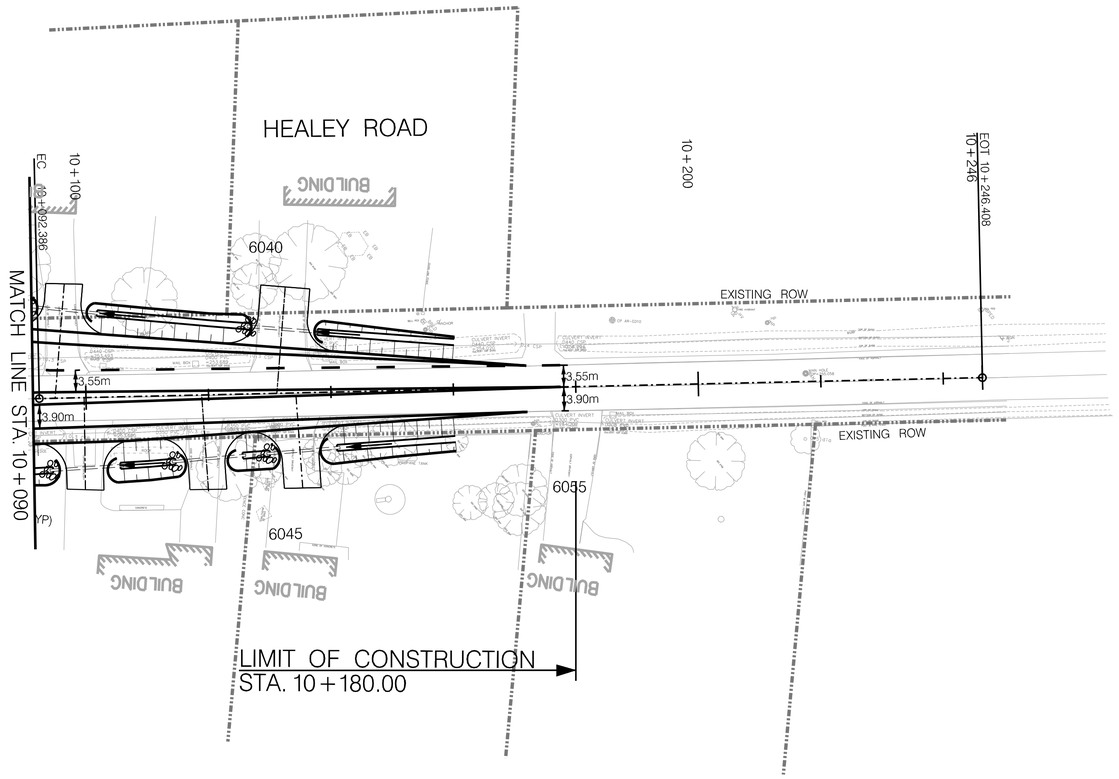
1m 0 1 2 3m — VERTICAL SCALE

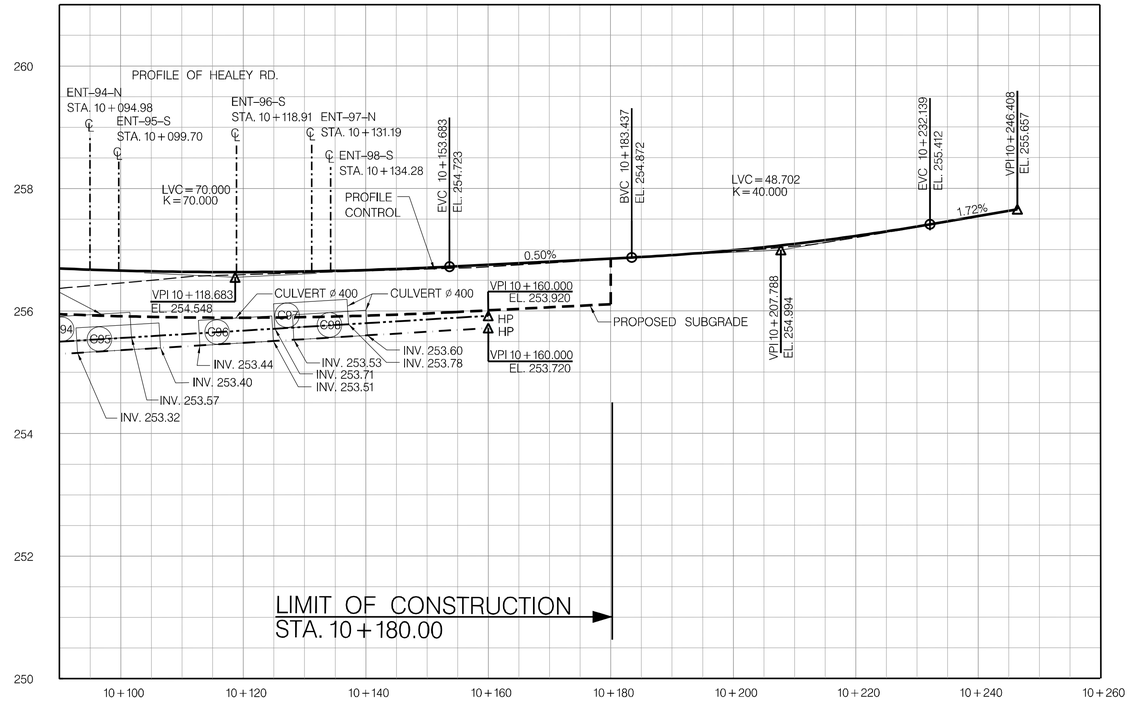
Region of Peel
Working for you

# AIRPORT ROAD

## PLAN AND PROFILE
## OLD SCHOOL ROAD/HEALEY ROAD
(FROM STA. 9+820 TO STA. 10+090)

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-022 |



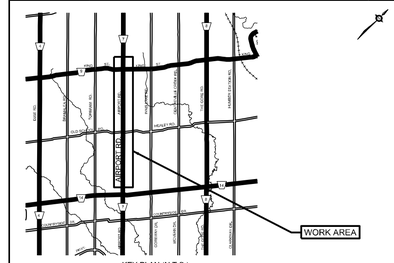

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 254.661 | 254.636 | 254.668 | 254.755 | 254.855 | 254.989 | 255.222 | 255.547 | |
| EXISTING | 254.457 | 254.595 | 254.655 | 254.722 | 254.845 | 254.971 | 255.193 | 255.535 | |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| | | |
| | | |
| | | |
| | | |




KEY PLAN (N.T.S.)

LEGEND:

LEFT DITCH

RIGHT DITCH

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Description Location — Elev.

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)

10m 0 10 20 30m — HORIZONTAL SCALE

1m 0 1 2 3m — VERTICAL SCALE

Region of Peel
Working for you

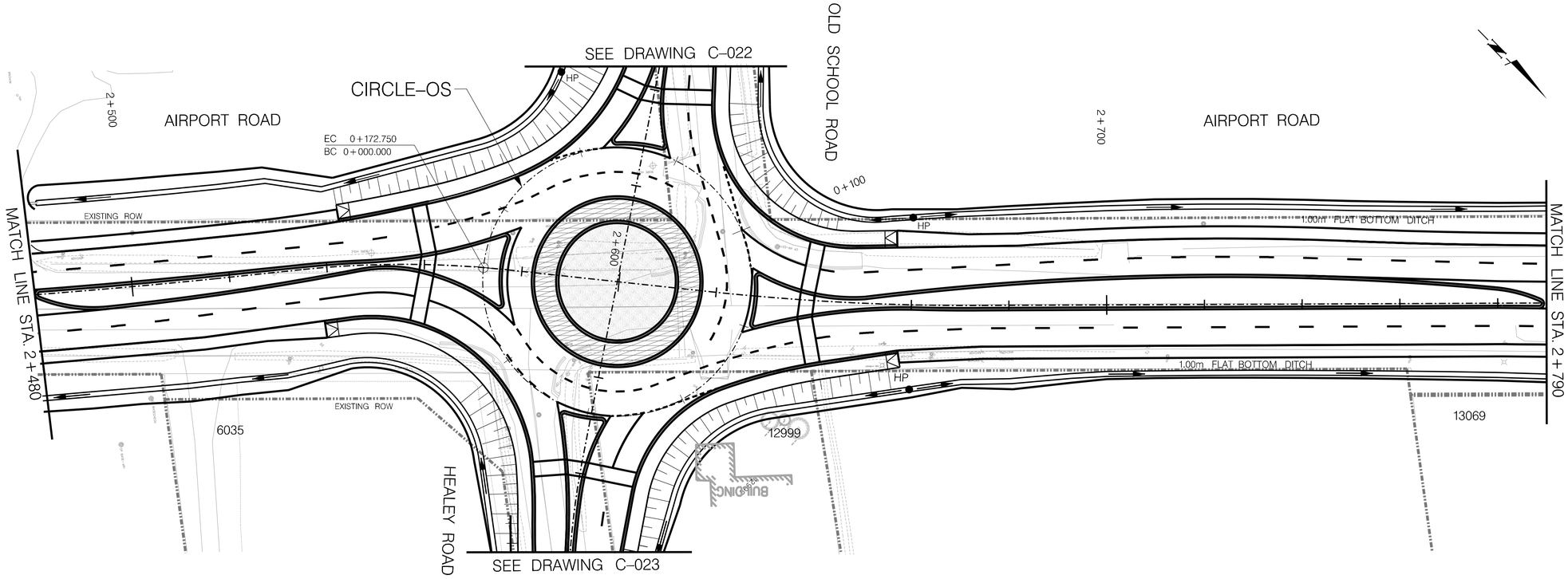
# AIRPORT ROAD

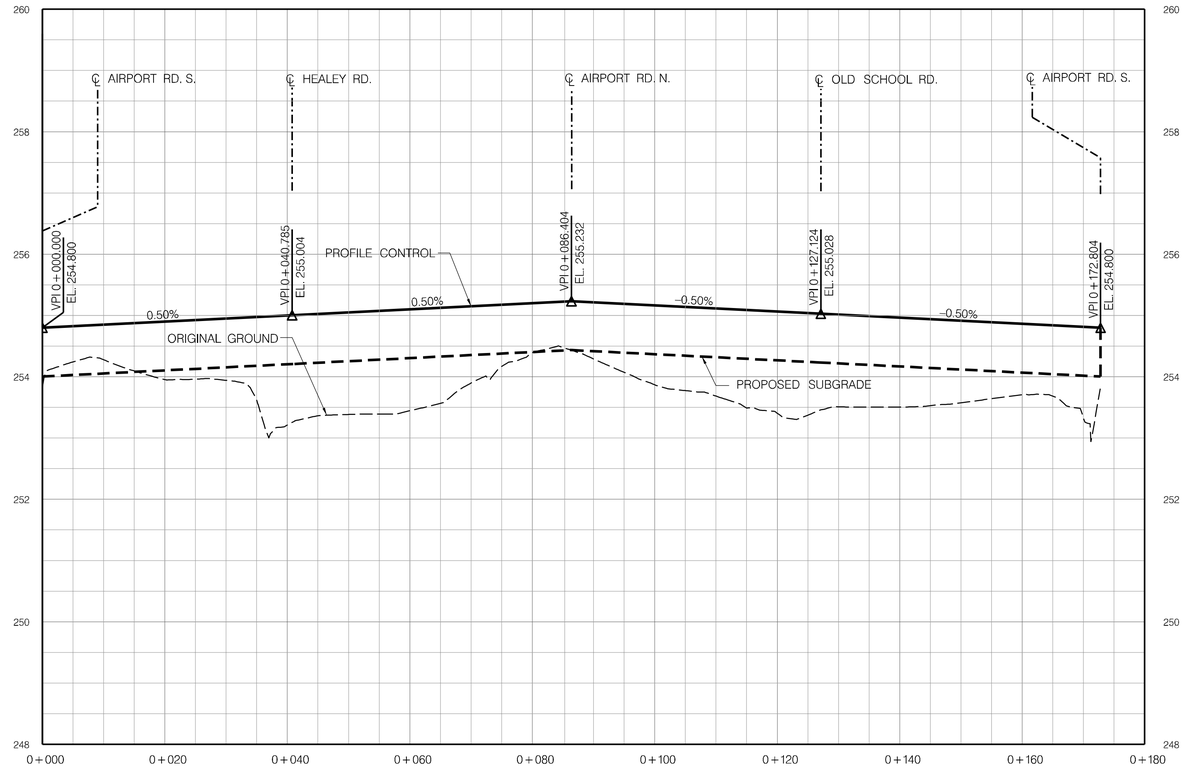
## PLAN AND PROFILE
## OLD SCHOOL ROAD/HEALEY ROAD
(FROM STA. 10+090 TO STA. 10+246.408)

| | | | |
|---|---|---|---|
| CAD Area | X-XX | Area | X-XX |
| Checked by | | Drawn by | G.P. |
| Date | JULY 2018 | Sheet | X of X |

Project No. 14-4030

Plan No. **NC-023**



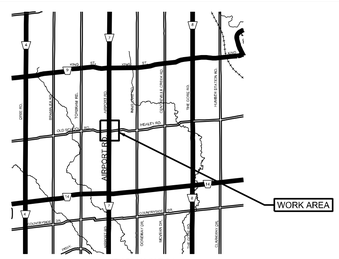

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PROPOSED | 254.800 | 254.900 | 255.000 | 255.100 | 255.200 | 255.164 | 255.064 | 254.964 | 254.864 | 254.801 |
| EXISTING | 253.827 | 253.954 | 253.211 | 253.445 | 254.395 | 253.868 | 253.404 | 253.505 | 253.708 | |

## SERVICE DATA

| SERVICE | DATE | INIT. | SERVICE | DATE | INIT. |
|---|---|---|---|---|---|
| SAN SEWERS | MAY 00, 2014 | X.X. | GAS MAINS | MAY 00, 2014 | X.X. |
| STORM SEWERS | MAY 00, 2014 | X.X. | BELL U/G CABLE | MAY 00, 2014 | X.X. |
| WATERMAINS | MAY 00, 2014 | X.X. | HYDRO U/G CABLE | MAY 00, 2014 | X.X. |
| TRANSIT | MAY 00, 2014 | X.X. | HYDRO ONE | MAY 00, 2014 | X.X. |
| PARKS & REC. | MAY 00, 2014 | X.X. | CTV | MAY 00, 2014 | X.X. |
| ONT. CLEAN WATER | MAY 00, 2014 | X.X. | COMMUNIC. CABLES | MAY 00, 2014 | X.X. |

## REVISIONS

| DATE | DETAILS | INIT. |
|---|---|---|
| JULY 2018 | ISSUED FOR 30% DESIGN REVIEW | T.P. |
| JAN 2019 | ISSUED FOR 60% DESIGN REVIEW | T.P. |
| | | |
| | | |
| | | |




KEY PLAN (N.T.S.)

## General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

**20C** Existing Water Service, Size In mm

**WS20** Proposed Water Service, Size In mm

B.M. No. Elev.
Description
Location

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by

Chkd.

Approved by

## NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
CITY OF MISSISSAUGA WORKS DEPT.
CITY OF BRAMPTON WORKS DEPT.
TOWN OF CALEDON WORKS DEPT.
BELL CANADA
ENBRIDGE INCORPORATED-GAS DISTRIBUTION
ONTARIO MINISTRY OF TRANSPORTATION
ONTARIO CLEAN WATER AGENCY
HYDRO ONE NETWORKS
ENERSOURCE, HYDRO MISSISSAUGA
HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBREOPTIC PROVIDERS:
BELL CANADA
ENERSOURCE TELECOM
HYDRO ONE TELECOM
ROGERS CABLE
ALLSTREAM
PSN (PUBLIC SECTOR NETWORK)
FUTUREWAY (FCI BROADBAND)




Region of Peel
Working for you

# AIRPORT ROAD
## PLAN AND PROFILE
ROUNDABOUT CIRCLE
AT AIRPORT ROAD AND OLD SCHOOL ROAD / HEALEY ROAD

| | | | | | |
|---|---|---|---|---|---|
| CAD Area | X-XX | Area | X-XX | Project No. | 14-4030 |
| Checked by | | Drawn by | G.P. | | |
| Date | JULY 2018 | Sheet | X of X | Plan No. | NC-026 |

# Highway 413 is a proposed highway and transit corridor running through York, Peel and Halton Regions.




The Project includes the 52-kilometre (km) Highway 413 corridor, a 4 km extension to Highway 410, and a 3 km extension to Highway 427 (both facilitating connection to the Highway 413 corridor), for a total of 59 km of new infrastructure.

The highway will have 11 interchanges at municipal roads. Features such as service centres, carpool lots, truck inspection stations, and the potential for electric vehicle charging stations, have been explored as part of Preliminary Design.

The transitway will be a separate corridor running alongside the highway, dedicated for public transit, which will be subject to a separate Environmental Assessment (EA).

## The Preferred Alignment

Highway 413 would extend from Highway 400, between King Road and Kirby Road, to the 401/407 ETR interchange near Mississauga, Milton and Halton Hills.

# APPENDIX I:

## Background Development Excerpts

# TRANSPORTATION IMPACT STUDY

## TULLAMORE INDUSTRIAL GP LIMITED
## TULLAMORE LANDS,
## 0 & 12245 TORBRAM ROAD

## TOWN OF CALEDON
## REGION OF PEEL

**PREPARED FOR:**

**TULLAMORE INDUSTRIAL GP LIMITED**

**PREPARED BY:**

**C.F. CROZIER & ASSOCIATES INC.**
**211 YONGE STREET, SUITE 600**
**TORONTO, ON M5B 1M4**

**April 2024**

**CFCA FILE NO. 2022-5842**

The material in this report reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

CELEBRATING 20 YEARS • SINCE 2004 • CROZIER

# 1.0 Introduction

## 1.1 Background

C.F. Crozier & Associates Inc. (Crozier) was retained by Tullamore Industrial GP Limited to undertake a Transportation Impact Study (TIS) in support of the planning applications for the industrial development located in the Tullamore Lands, 0 & 12245 Torbram Road in the Town of Caledon.

A Transportation Impact Study (TIS) was previously prepared and submitted in June 2021 based on an older Site Plan, the TIS was updated an issued for resubmission in December 2021, April 2023, and October 2023. This Transportation Impact Study Update has been prepared address the Town and Region's comments dated March 20, 2024, regarding the Official Plan Amendment (OPA) and Draft Plan of Subdivision (DPS) submissions associated with the Tullamore Lands.

The Town and Region's comments with associated responses, and the established Terms of References are included in **Appendix A**.

## 1.2 Development Proposal

The development proposes an industrial park consisting of 137 ha. **Table 1** summarizes the proposed development statistics. The most recent Draft Plan prepared by Weston Consulting dated April 16, 2024, has been provided as **Figure 1.** The Site Plan prepared by Turner Fleisher Architects Inc. dated March 28, 2024, showing the building statistics has been provided in **Appendix B**.

**Table 1: Development Proposal**

| Block | Building | Land Use | GFA ($ft^2$) | Parking Supply | | |
|---|---|---|---|---|---|---|
| | | | | Loading Bays | Car Parking | Trailer Parking |
| **1** | Building A | Industrial Warehouse | 1,124,218 | 270 | 535 | 600 |
| **3** | Building C[1] | | 784,700 | 81 | 319 | 179 |
| **4** | Building D | | 978,800 | 168 | 546 | 173 |
| **7** | Building E | | 963,300 | 100 | 480 | 291 |
| **8** | Building F | | 797,500 | 170 | 389 | 135 |
| **5** | Building H | | 938,973 | 95 | 543 | 61 |
| **2** | Building I | | 290,400 | 74 | 326 | 47 |
| **2** | Building J | | 99,000 | 26 | 138 | 11 |
| **Total** | | | 5,976,891 | **984** | **3,276** | **1,497** |

Note: The site statistics shown differ from the statistics used in the analysis found in **Section 4.0** and **5.0**. The overall trip generation for the site has reduced by 18 trips in the a.m. and p.m. peak hours for the latest Site Plan in comparison to the trip generation used at the time of this analysis and is therefore considered conservative The Site Plan statistics shown are from the latest Site Plan (dated, March 28, 2024), provided in **Appendix B**.

**Table 2** outlines the proposed development's gross floor area (GFA) in comparison that outlined in the previously submitted TIS Update (Crozier, October 2023). The table also illustrates that the current proposal has slightly smaller GFA when compared with the previous proposal; therefore, it should be noted that from a trip generation perspective, a decrease in trips would result. **Section 4.0** reviews the trip generation based on the previous site statistics; this analysis is therefore considered conservative.

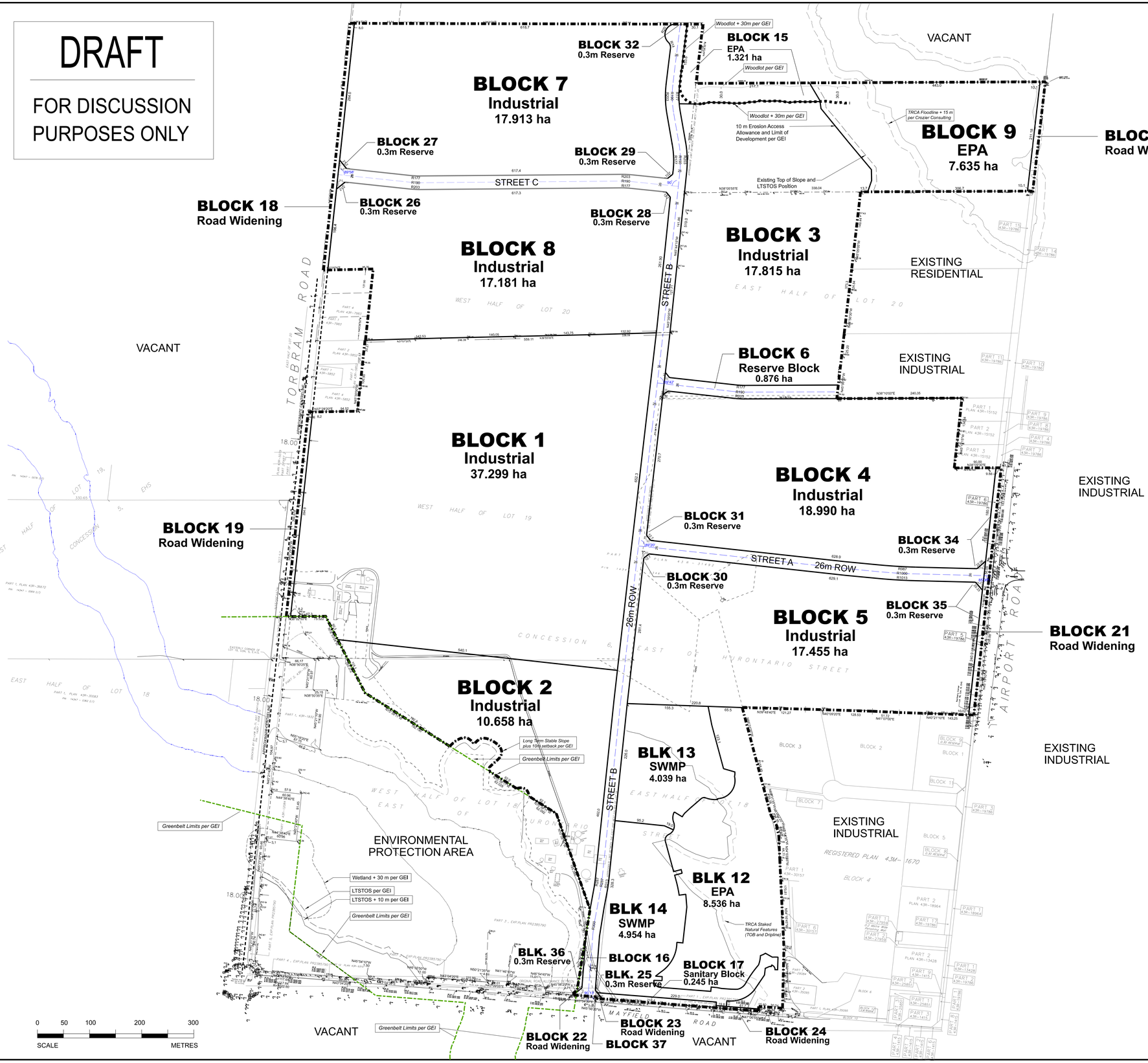
**Table 2: Development Proposal (Comparison)**

| Block | Building | GFA (sq. ft) | |
|---|---|---|---|
| | | **Previous Submission October 2023** | **Current Proposal April 2024** |
| **1** | Building A | 1,083,946 | 1,083,946 (+40,272) |
| **3** | Building C[1] | 784,700 | 784,700 |
| **4** | Building D | 1,009,216 | 1,009,216 (-30,416) |
| **7** | Building E | 1,008,900 | 1,008,900 (-45,600) |
| **8** | Building F | 797,500 | 797,500 |
| **5** | Building H | 975,874 | 938,973 (-36,901) |
| **2** | Building I | 360,760 | 290,400 (-70,360) |
| **2** | Building J | 99,000 | 99,000 |
| **Total** | | **6,119,896** | **5,976,891** (-143,005) |

A multiuse trail (MUT) is also now proposed through the Greenbelt block, south of Block 2, which will provide an active transportation connection between Torbram Road and Street B. This proposed MUT was not considered in the previous October 2023 Submission, more details outlining the proposed MUT can be found in **Section 9.1.**

DRAFT

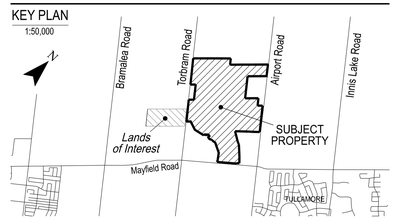
FOR DISCUSSION PURPOSES ONLY




# DRAFT PLAN OF SUBDIVISION

PART OF LOTS 18, 19 AND 20, CONCESSION 6
EAST OF HURONTARIO STREET
PART OF LOTS THE ROAD ALLOWANCE
BETWEEN LOTS 17 AND 18, CONCESSION 6
EAST OF HURONTARIO STREET
TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

KEY PLAN
1:50,000




OWNER'S CERTIFICATE:

I authorize Weston Consulting Group Inc. to prepare and submit this plan for draft approval.

Date: _____

Tullamore Industrial GP Limited
John McGovern, Senior Vice President, Policy and Planning
75 Tiverton Court, Markham, Ontario L3R 4M8
TEL: 905.888.1277 x 228
e: john.mcgovern@rlcgroup.ca

SURVEYOR'S CERTIFICATE:

I hereby certify that the boundaries of the lands being subdivided and their correct relationship to the adjacent lands are accurately and correctly shown on this plan.

Date: _____

Name of Surveyor, OLIP
Ontario Land Surveyor

YOUNG & YOUNG SURVEYING INC.
2 HOLLAND DRIVE, UNIT 5, BOLTON,
ONTARIO L7E 1E1
PHONE: 905.951.6000,FAX: 905.857.4811
www.youngsurveying.ca, info@youngsurveying.ca

ADDITIONAL INFORMATION:

[Section 51(17) of the Planning Act, R.S.O. 1990, c. P.13], as amended to March 24, 2024.
a), b), e), f), g), & j) - on plan.
c) - on key plan
d) - see statistics
h) - piped water to be installed by developer
i) - clay loam / loam
k) - all services to be made available by developer
l) - nil

DEVELOPMENT STATISTICS:

| BLOCKS | AREA(HA) |
|---|---|
| Industrial [Block 1-5,7-8]: | 137.311 ha |
| Reserve Block [Block 6]: | 0.876 ha |
| Environmental Protection Area [Block 9,12,15]: | 17.492 ha |
| SWMP [Blocks 13,14]: | 8.993 ha |
| Block 16: | 0.043 ha |
| Block 17 Sanitary Block: | 0.245 ha |
| Road Widening [Block 18-24]: | 1.432 ha |
| 0.3m Reserve [Block 25-36]: | 0.033 ha |
| Block 37: | 0.005 ha |
| Roads: | 8.373 ha |
| Total: | 174.803 ha |

WESTON CONSULTING

Vaughan: 201 Millway Ave, Suite 19
Vaughan, Ontario L4K 5K8
T. 905.738.8080 F. 905.738.6637

Toronto: 268 Berkeley St.
Toronto, Ontario M5A 2X1
T. 416.640.9917 F. 905.738.6637

1-800.363.3558 westonconsulting.com

REVISIONS LIST

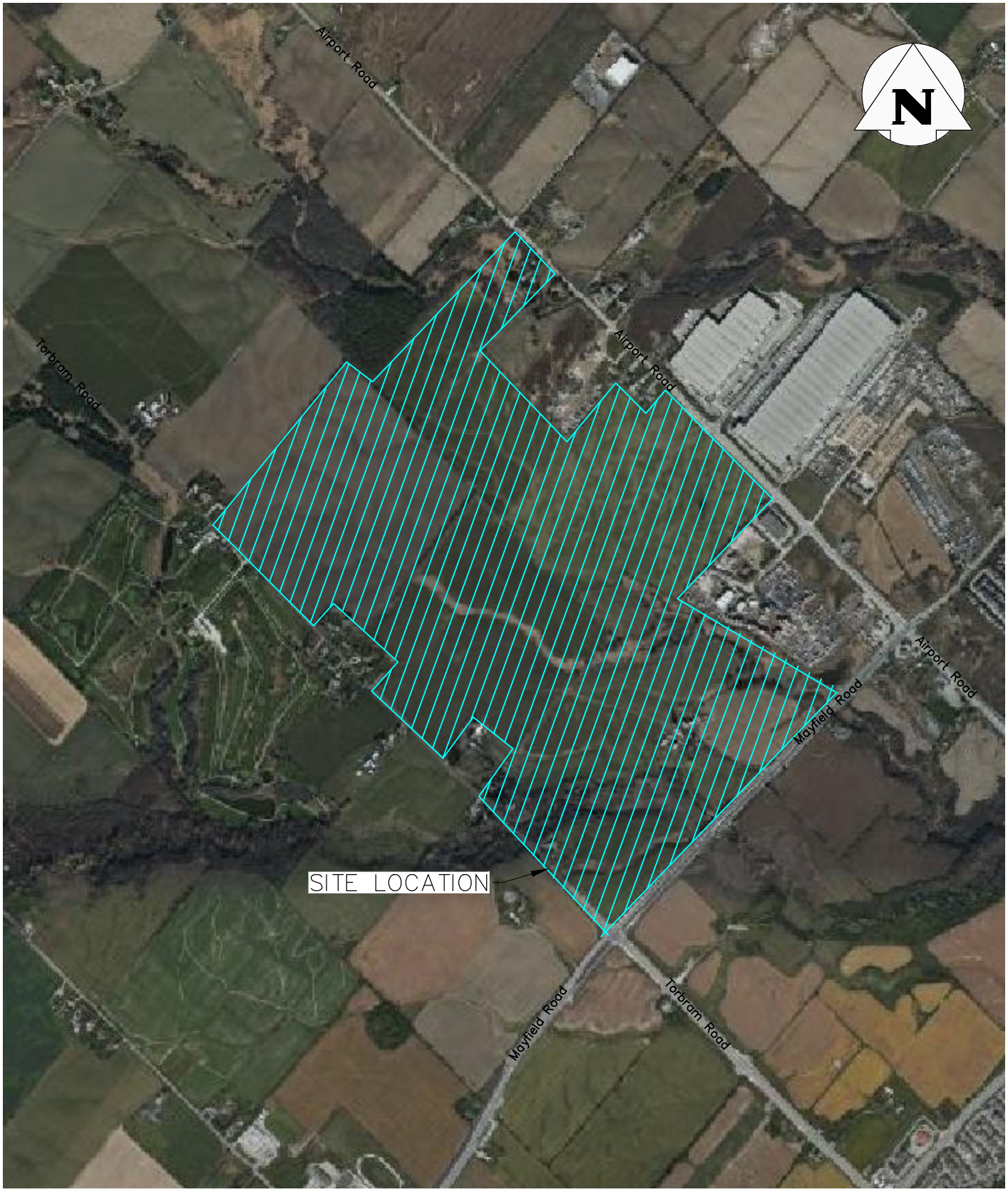
| | |
|---|---|
| 16 APR 2024 | Remove Greenbelt lands & Future Community Block. Add Blk 36 reserve. |
| 12 APR 2024 | Add blocks 36-39 per GEI. Remove original Wetlands. Overlay updated GEI linework. |
| 12-22 FEB 2024 | Revise Blks 3/9 limits & Greenbelt per GEI & EPA Blk 12 & SWMP Blks 13&14 per Crozier |
| 07-09 FEB 2024 | Revise Blks 1,2, 2-14 per Crozier 2024-02-07 site plan. Digitize revised road widening |
| 11-16 JAN 2024 | Revise EPA Blk 12 & SWMP Blks 13 & 14 per Crozier. Add/remove 9m Blk 2 easement |
| 24 OCT 2023 | Revise Crest of Slope & Woodlot+setbacks per GEI Mapping & SWM-EPA-Buffer per Crozier |
| 28 MAR 2023 | Revise block limits per Site Plan. Modify Park blk to include parking area & ilnk. |
| 18 JAN 2023 | Revise block limits per 2023-01-12 Site Plan & TRCA limits |
| 16 DEC 2022 | Exclude NHS Constraints. Modify Blk 4 & per Turner Fleischer 2022-12-13 Site Plan |
| 13 DEC 2022 | Revise per Crozier Street A modfications & Crest of Slope - NHS Constraints per GEI |
| 23 NOV 2022 | Adjusted Blocks per Crozier site plan & R-Plan boundaries |
| 18 FEB 2022 | Adjusted Blocks and updated TRCA survey with natural features |
| 13-20 OCT 2021 | Combine blocks 1 and 2. Adjust plan with ground topo survey |
| 23-24 AUG 2021 | Increased SWMP Revise Street A & B sight triangles |

Drawing Number:

| | |
|---|---|
| File Number: | 10208 |
| Drawn By: | SM |
| Planner: | DC |
| Scale: | 1:3500 |
| CAD: | 10208/Draft plans/D13_V2_2024-04-16.dgn |

D13

FIGURE 1




# TULLAMORE LANDS, 0 & 12245 TORBRAM ROAD, TOWN OF CALEDON

## SITE LOCATION

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

| Drawn | Design | Project No. | |
|---|---|---|---|
| I.A. | T.D.S. | 2022-5842 | |
| Date | Check | Scale | Dwg. |
| 2023/01/30 | M.L. | N.T.S | FIG. 02 |

## 4.2 Trip Generation

The trip generation at the proposed development was forecasted using the rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Land Use Code (LUC) 150 "Warehousing" was used to generate the estimated site trips generated by the proposed industrial development. A fitted curve equation is provided for LUC 150 "Warehousing", and the number of data plots exceeds 20 points. As such, the fitted curve equation was used to forecast trip generation for the proposed development during the a.m. and p.m. peak periods.

2016 Transportation Tomorrow Survey (TTS) data was used to determine the existing modal split. Based on the available data for the zone of the development (2006 GTA Zone 3014) and a nearby industrial development zone (2006 GTA Zone 3015), a modal split of 0% was determined. As such, there was no modal split adjustment for trips generated at the proposed site. However, we understand that future transit considerations may contribute to peak hour automobile mode split reductions.

Per the ITE Trip Generation Handbook 3rd Edition Table I.1, approximately 20% of site generated traffic with LUC 150 "Warehousing" during weekdays consists of heavy truck traffic. Site traffic generated by similar land use LUC 130 "Industrial Park" consists of between 1-31% of heavy truck traffic during the weekday peak hours with an average of 13%, and site traffic generated by similar land use LUC 152 "High-Cube Warehouse/Distribution Centre" consists of between 9-29% of heavy truck traffic during the weekday peak hours. Therefore, an estimate of 20% for heavy truck traffic is considered reasonable.

The trip generation characteristics for each zone has been broken down in terms of the total vehicle trip generation, passenger car trip generation and heavy truck traffic trip generation in **Table 16, Table 17,** and **Table 18** respectively. **Figure 12, Figure 13,** and **Figure 14** illustrate the trip assignment for cars, trucks, and the overall total for the proposed development, respectively.

**Table 16: Total Vehicle Trip Generation**

| Zone | Building(s) | Size (SF GFA) | A.M. Peak Trip Generation | | | P.M. Peak Trip Generation | | |
|---|---|---|---|---|---|---|---|---|
| | | | T = 0.12 X + 23.62 | | | T = 0.12 X + 26.48 | | |
| | | | In | Out | Total | In | Out | Total |
| **1** | Building A | 1,083,946 | 118 | 35 | 154 | 44 | 113 | 157 |
| **Zone 1 Total** | | | **118** | **35** | **154** | **44** | **113** | **157** |
| **2** | Building D | 1,009,216 | 111 | 33 | 145 | 41 | 106 | 148 |
| | Building H | 975,874 | 73 | 68 | 141 | 40 | 103 | 144 |
| **Zone 2 Total** | | | **185** | **101** | **285** | **82** | **210** | **291** |
| **3** | Building C | 784,700 | 91 | 27 | 118 | 34 | 87 | 121 |
| **Zone 3 Total** | | | **91** | **27** | **118** | **34** | **87** | **121** |
| **4** | Building I | 360,760 | 52 | 15 | 67 | 20 | 50 | 70 |
| | Building J | 99,000 | 27 | 8 | 35 | 11 | 28 | 39 |
| **Zone 4 Total** | | | **79** | **23** | **102** | **31** | **78** | **109** |
| **5** | Building E | 1,008,900 | 111 | 33 | 145 | 41 | 106 | 148 |
| | Building F | 797,500 | 62 | 57 | 119 | 34 | 88 | 122 |
| **Zone 5 Total** | | | **173** | **91** | **264** | **76** | **194** | **270** |
| **Total** | | **6,119,896** | **646** | **277** | **923** | **266** | **681** | **947** |

**Table 17: Passenger Car Trip Generation**

| Zone | Building(s) | Size (SF GFA) | A.M. Peak Trip Generation | | | P.M. Peak Trip Generation | | |
|---|---|---|---|---|---|---|---|---|
| | | | 80% Total Vehicle Traffic | | | | | |
| | | | In | Out | Total | In | Out | Total |
| **1** | Building A | 1,083,946 | 95 | 28 | 123 | 35 | 90 | 125 |
| **Zone 1 Total** | | | **95** | **28** | **123** | **35** | **90** | **125** |
| **2** | Building D | 1,009,216 | 89 | 27 | 116 | 33 | 85 | 118 |
| | Building H | 975,874 | 59 | 54 | 113 | 32 | 83 | 115 |
| **Zone 2 Total** | | | **148** | **81** | **228** | **65** | **168** | **233** |
| **3** | Building C | 784,700 | 73 | 22 | 94 | 27 | 69 | 97 |
| **Zone 3 Total** | | | **73** | **22** | **94** | **27** | **69** | **97** |
| **4** | Building I | 360,760 | 42 | 12 | 54 | 16 | 40 | 56 |
| | Building J | 99,000 | 22 | 6 | 28 | 9 | 22 | 31 |
| **Zone 4 Total** | | | **63** | **18** | **82** | **25** | **62** | **87** |
| **5** | Building E | 1,008,900 | 89 | 27 | 116 | 33 | 85 | 118 |
| | Building F | 797,500 | 50 | 46 | 95 | 27 | 70 | 98 |
| **Zone 5 Total** | | | **139** | **72** | **211** | **60** | **155** | **216** |
| **Total** | | **6,119,896** | **518** | **221** | **738** | **212** | **544** | **758** |

**Table 18: Truck Trip Generation**

| Zone | Building(s) | Size (SF GFA) | A.M. Peak Trip Generation | | | P.M. Peak Trip Generation | | |
|---|---|---|---|---|---|---|---|---|
| | | | 20% Total Vehicle Traffic | | | | | |
| | | | In | Out | Total | In | Out | Total |
| 1 | Building A | 1,083,946 | 23 | 7 | 31 | 9 | 23 | 32 |
| **Zone 1 Total** | | | **23** | **7** | **31** | **9** | **23** | **32** |
| 2 | Building D | 1,009,216 | 22 | 6 | 29 | 8 | 21 | 30 |
| | Building H | 975,874 | 14 | 14 | 28 | 8 | 20 | 29 |
| **Zone 2 Total** | | | **37** | **20** | **57** | **17** | **42** | **58** |
| 3 | Building C | 784,700 | 18 | 5 | 24 | 7 | 18 | 24 |
| **Zone 3 Total** | | | **18** | **5** | **24** | **7** | **18** | **24** |
| 4 | Building I | 360,760 | 10 | 3 | 13 | 4 | 10 | 14 |
| | Building J | 99,000 | 5 | 2 | 7 | 2 | 6 | 8 |
| **Zone 4 Total** | | | **16** | **5** | **20** | **6** | **16** | **22** |
| 5 | Building E | 1,008,900 | 22 | 6 | 29 | 8 | 21 | 30 |
| | Building F | 797,500 | 12 | 11 | 24 | 7 | 18 | 24 |
| **Zone 5 Total** | | | **34** | **19** | **53** | **16** | **39** | **54** |
| **Total** | | **6,119,896** | **128** | **56** | **185** | **55** | **138** | **190** |

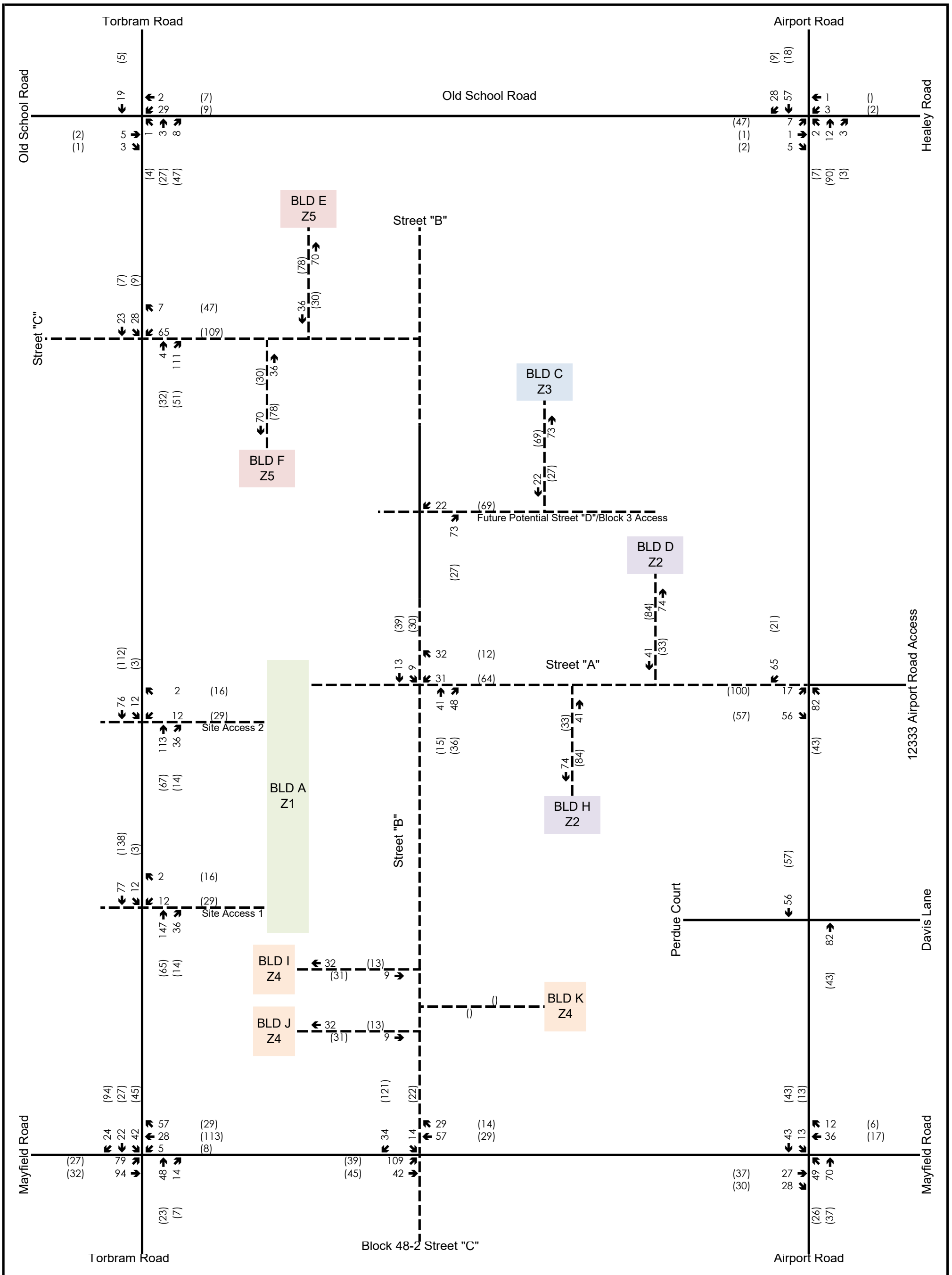
The proposed industrial warehouse development is expected to generate approximately 923 and 947 two-way trips, inclusive of passenger cars and trucks. A total of 738 and 758 two-way passenger car trips are expected during the weekday a.m. and p.m. peak hours, respectively; and approximately 185 and 190 total two-way truck trips are expected during the weekday a.m. and p.m. peak hours, respectively.

It is noted that due to the Site Plan being in development at the time this analysis was being conducted the site statistics shown in **Table 16, Table 17,** and **Table 18** slightly differ from the statistics found in the latest Site Plan. The overall trip generation for the site has reduced by 18 trips in the a.m. and p.m. peak hours for the latest Site Plan in comparison to the trip generation used at the time of this analysis and is therefore considered conservative. The Site Plan statistics shown are from the latest Site Plan (dated, March 28, 2024), provided in **Appendix B**.

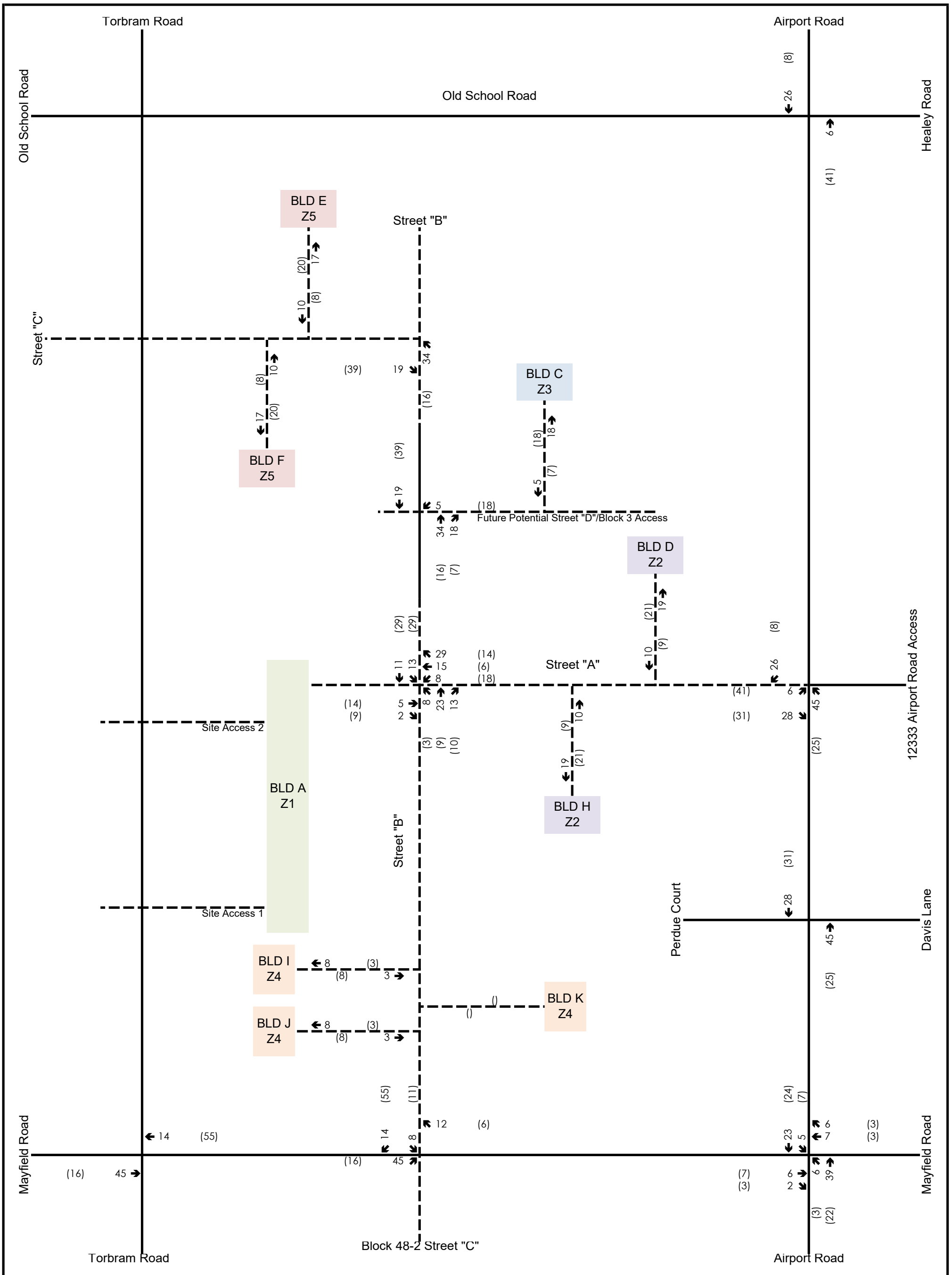
## 4.3 Trip Distribution and Assignment

### 4.3.1 Passenger Cars

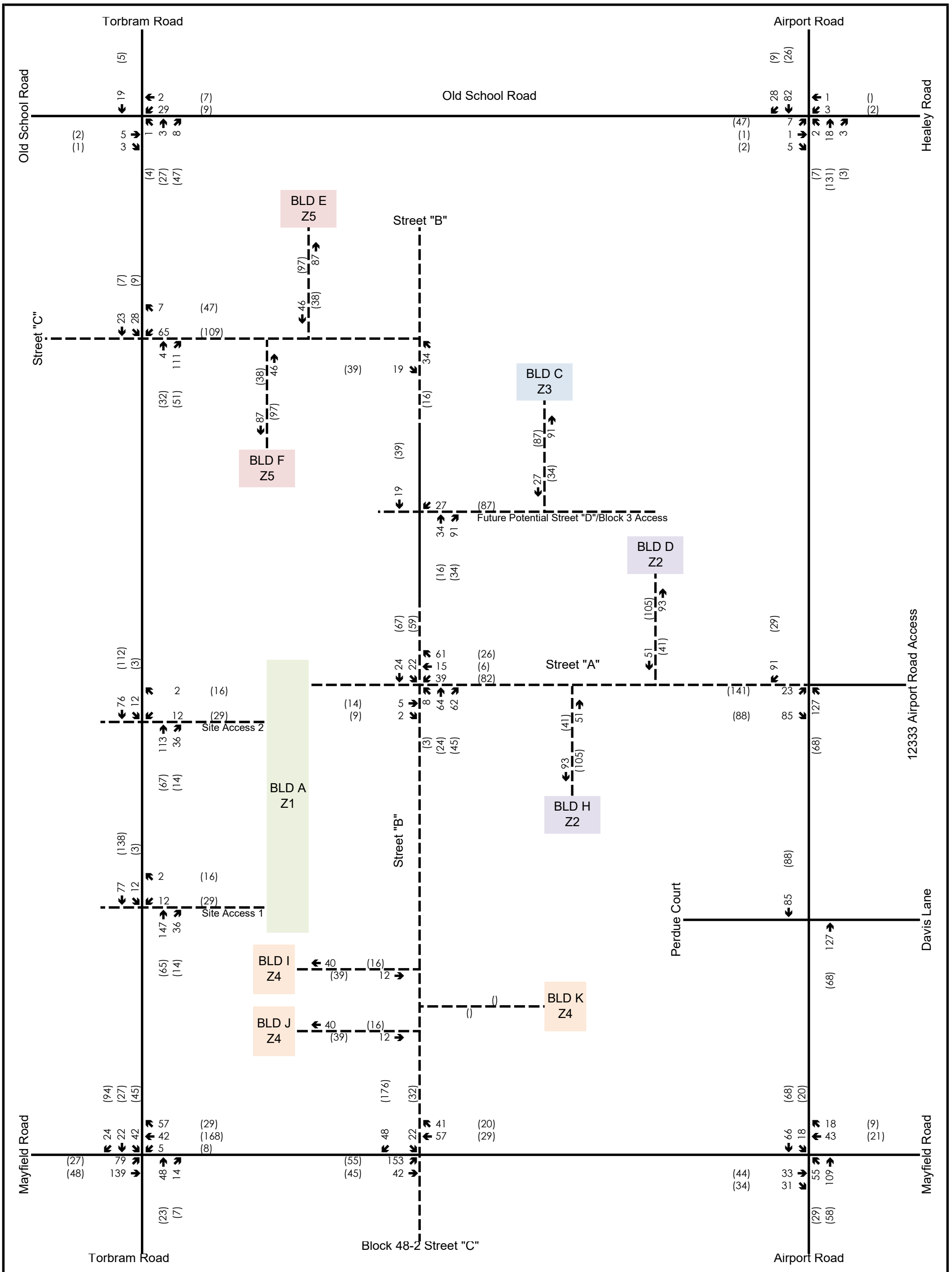
The passenger car trips generated at the proposed industrial development were distributed to the surrounding road network based on 2016 Transportation Tomorrow Survey (TTS) data. The TTS is a comprehensive survey consisting of transportation patterns for households in the Greater Toronto and Hamilton Area (GTHA) and surrounding area.




| Legend | Tullamore Industrial | CROZIER CONSULTING ENGINEERS | Figure 12 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes | Trip Assignment (Car) | | Project No. 2022-5842<br>Date. 2023.10.20<br>Analyst. TDS |




| Legend | Tullamore Industrial | CROZIER CONSULTING ENGINEERS | Figure 13 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes | Trip Assignment (Trucks) | | Project No. 2022-5842<br>Date. 2023.10.20<br>Analyst. TDS |




| Legend | Tullamore Industrial | CROZIER CONSULTING ENGINEERS | Figure 14 |
|---|---|---|---|
| xx A.M. Peak Hour Traffic Volumes<br>(xx) P.M. Peak Hour Traffic Volumes | Trip Assignment (Total) | | Project No. 2022-5842<br>Date. 2023.10.20<br>Analyst. TDS |

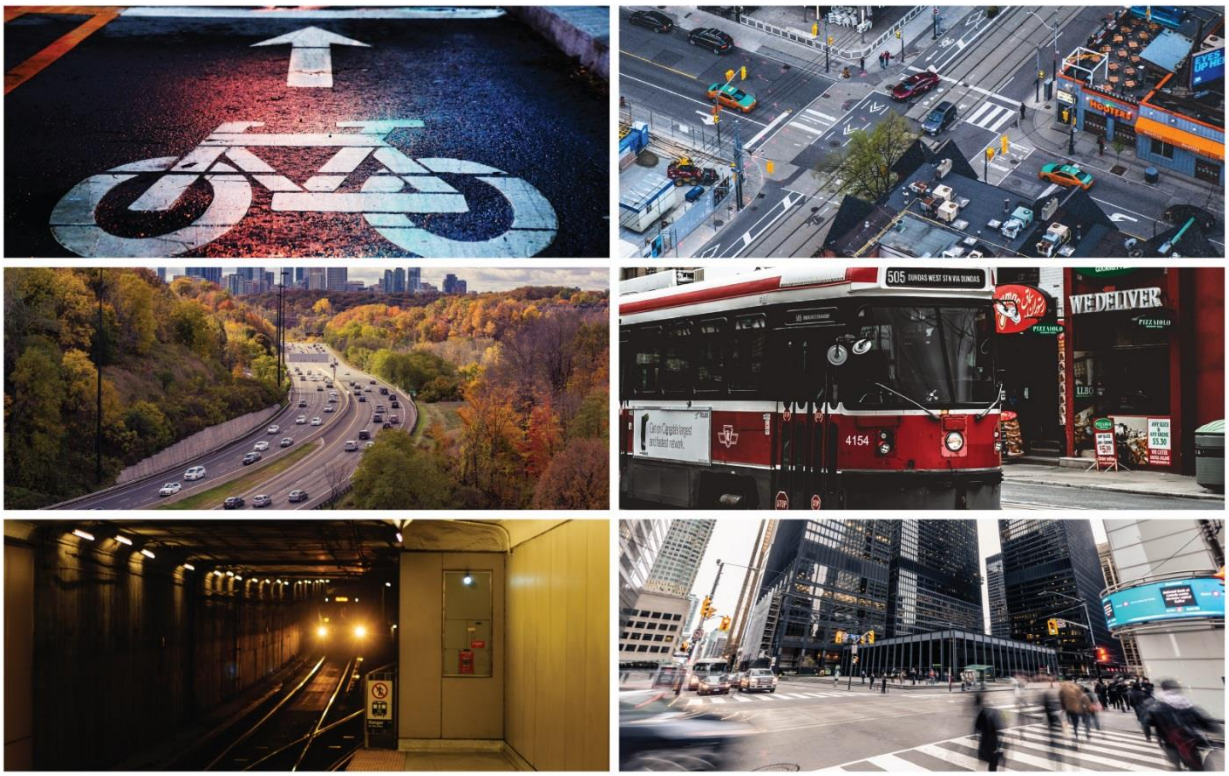
TOWN OF CALEDON
PLANNING
RECEIVED
July 30, 2021

AIRFIELD DEVELOPMENTS INC. & AIRFIELD II DEVELOPMENTS INC.

# 6034 MAYFIELD ROAD

## TRANSPORTATION IMPACT STUDY AND DEMAND MANAGEMENT PLAN

JULY 29, 2021




wsp

# 1 INTRODUCTION

WSP was retained by Airfield Developments Inc. and Airfield II Developments Inc. to undertake a Transportation Impact Study (TIS) for the proposed development located at the northeast quadrant of the intersection of Airport Road & Mayfield Road in the Town of Caledon. **Figure 1.1** illustrates the site location and context.

The development proposal will consist of two industrial buildings with a combined gross floor area (GFA) of 44,535 $m^2$.

The development will have three vehicular driveways onto Airport Road and Mayfield Road, one of which will be a full-moves access.

**Figure 1.2** illustrates the proposed site plan.




wsp

Figure 1.1

Site Location and Context

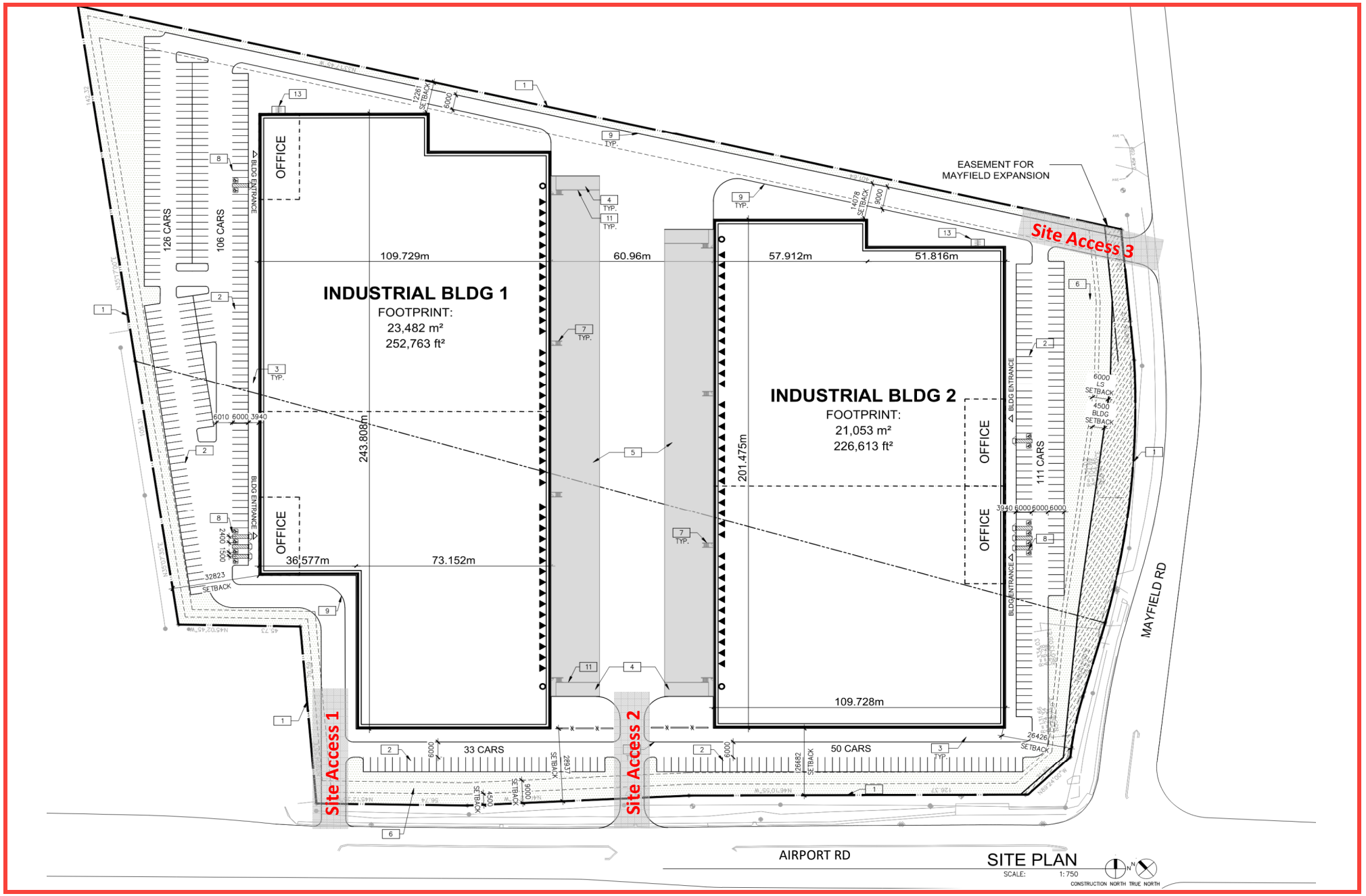



Figure 1.2

Proposed
Site Plan

## 4.2 TRIP GENERATION

The trips generated by the proposed development during the weekday a.m. and p.m. peak hours were estimated using the trip generation equations outlined in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*. As both warehouse and general industrial uses are currently being contemplated for the development, trip generation estimates using the ITE Land Use Codes 150 (Warehousing) and 110 (General Light Industrial) are compared in **Table 4.1**. Since, as shown in the table, general industrial uses are expected to generate a greater number of peak hour trips, the trip generation estimate for this use was conservatively adopted for this study.

It should be noted that these equations include both vehicle and truck trips to the development; truck trips were assumed to account for 13% of total peak hour trips based on truck trip generation information available from the ITE.

Based on Transportation Tomorrow Survey (TTS) 2016 data for employment trips to/from zones 3014, 3015, 3441, and 3442, it was determined that there was very minimal use of non-auto modes of travel. As such, no mode share adjustments were applied to the ITE-derived trips.

**Table 4.1: Site Generated Trips**

| ITE Land Use (Code) | | Weekday A.M. Peak Hour | | | Weekday P.M. Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| Warehousing (150) | Equation (X=1000 ft²) | T = 0.12 X + 25.32 | | | T = 0.12 X + 27.82 | | |
| | Directional Splits | 77% | 23% | 100% | 27% | 73% | 100% |
| | Trips (479,375 ft²) | **64** | **19** | **83** | **23** | **62** | **85** |
| General Light Industrial (110) | Equation (X=1000 ft²) | Ln(T) = 0.74 Ln(X) + 0.39 | | | Ln(T) = 0.69 Ln(X) + 0.43 | | |
| | Directional Splits | 88% | 12% | 100% | 13% | 87% | 100% |
| | Trips (479,375 ft²) | **125** | **17** | **142** | **14** | **95** | **109** |
| | Vehicle Trips (87%) | 109 | 15 | 124 | 12 | 83 | 95 |
| | Truck Trips (13%) | 16 | 2 | 18 | 2 | 12 | 14 |

As presented above, the proposed development is forecasted to generate **142 and 109 total trips** during the a.m. and p.m. peak hours, respectively.

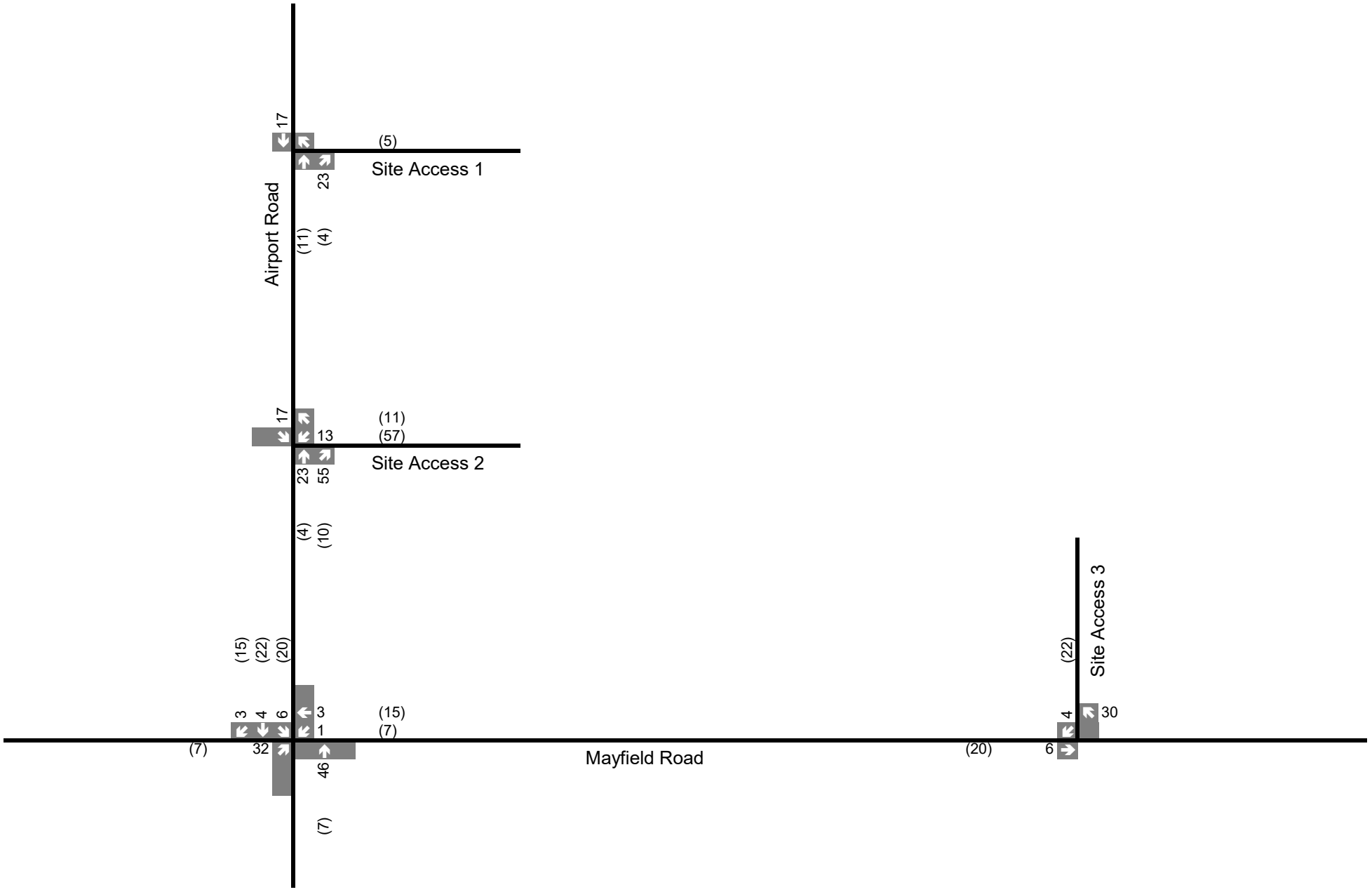
## 4.3 TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment of the site-generated trips was derived from the TTS data and assigned to the gateways based on local road network and land use considerations. The overall trip distribution is shown in **Table 4.2.**

**Table 4.2: Trip Distribution**

| Gateway Direction | AM Inbound | AM Outbound | PM Inbound | PM Outbound |
|---|---|---|---|---|
| **North** | 14% | 0% | 0% | 17% |
| **West** | 26% | 34% | 50% | 31% |
| **South** | 37% | 34% | 50% | 31% |
| **East** | 24% | 32% | 0% | 20% |

**Figure 4.2** illustrates the resulting site traffic volumes for future horizon years.




Legend

xx A.M. Peak Hour Traffic Volumes

(xx) P.M. Peak Hour Traffic Volumes

Figure 4.2

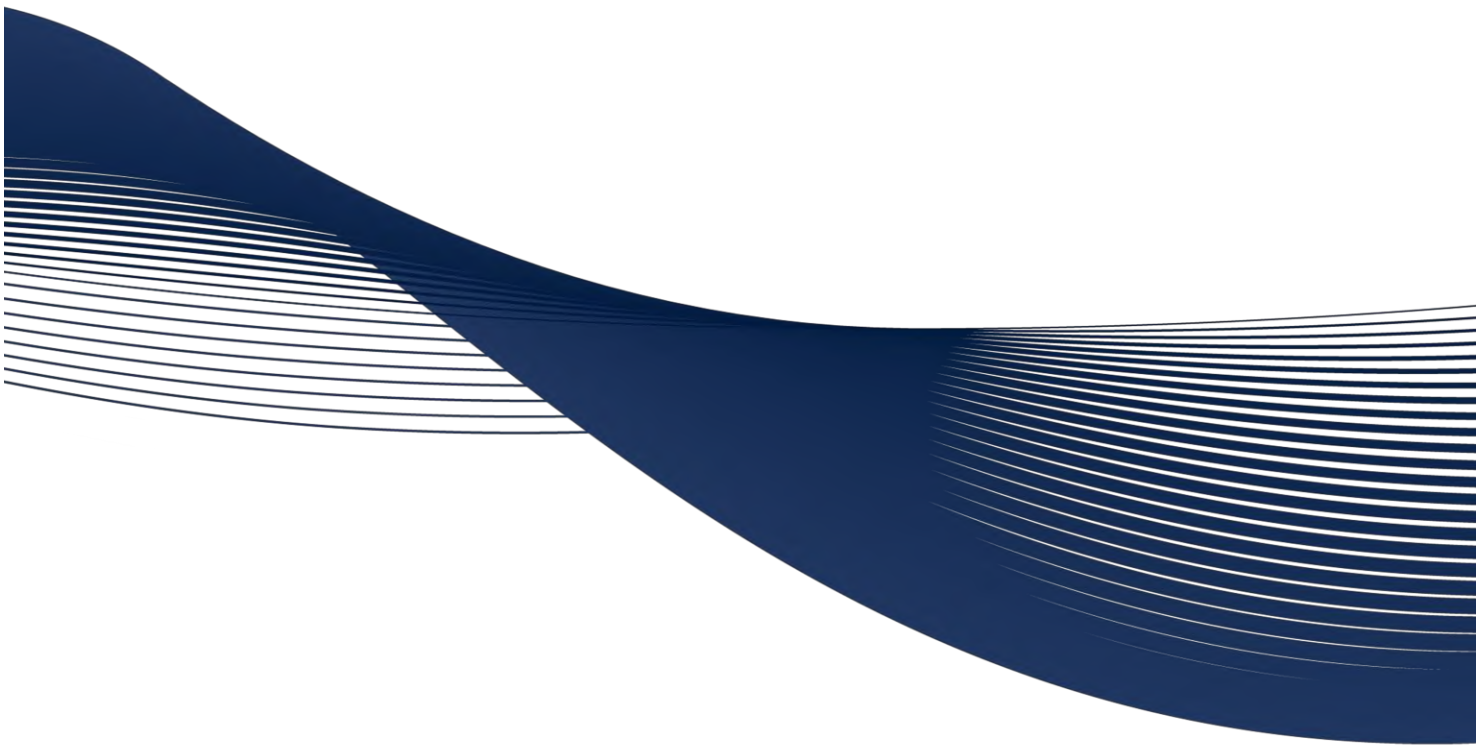
Site Generated Traffic Volumes

# BRAMPTON AREA LANDOWERS GROUP INC.

**REVISED TRAFFIC IMPACT STUDY**

## Block 48-2 Proposed Mixed-Use Development, City of Brampton

Project No.: T11-646



MAY 2017


**COLE ENGINEERING GROUP LTD.**

HEAD OFFICE
70 Valleywood Drive
Markham, ON CANADA L3R 4T5
**T.** 905.940.6161 | 416.987.6161
**F.** 905.940.2064 | www.ColeEngineering.ca

GTA WEST OFFICE
151 Superior Boulevard, Units 1 & 2
Mississauga, ON CANADA L5T 2L1
**T.** 905.364.6161
**F.** 905.364.6162

# 1 Introduction

Cole Engineering Group Ltd. (Cole Engineering) was retained by Brampton Area 48 Landowners Group Inc. (the "Owner") to undertake a revised Traffic Impact Study for the proposed Block 48-2 development: a 315 hectare area bounded by Bramalea Road to the west, Countryside Drive to the south, Mayfield Road to the north, and Airport Road to the east, in the City of Brampton (the "City"). The site location is shown in **Figure 1-1**, following the Report.

The Block 48-2 Council Approved Block Plan is shown in **Figure 1-2**, following the Report. The proposed block plan will include 3,391 low to medium density residential developments, 22.59 ha of institutional lands including three (3) elementary schools, two (2) secondary schools and two (2) worship places, and 14.43 ha of commercial / retail lands including district retail, mixed use and convienience commercial lands. The breakdown pertaining to the proposed land uses is summarized in **Table 1.1** below.

**Table 1.1 Site Statistics**

| Land Use | Components | Completion Date |
|---|---|---|
| Single Detached Residential | 1,723 Units | 2021 |
| Semi-detached Residential | 240 Units | 2021 |
| Townhouse | 1,208 Units | 2021 |
| Apartment | 220 Units | 2021 |
| District Retail | 9.34 ha | 2021 |
| Mixed Use | 4.09 ha | 2021 |
| Conv. Commercial | 1.00 ha | 2021 |
| Institutional | 3 Elementary Schools, 2 Secondary Schools and 2 Places of Worship (22.59 ha) | 2021 |

Note: The full build-out horizon was provided by the Brampton Area 48 Landowners Group.

## 1.1 Background

Block 48-2 is part of the larger Countryside Villages Secondary Plan Area 48 (Secondary Plan), which is bounded by Heart Lake Road, Mayfield Road, Airport Road and Countryside Drive. Transportation policies regarding the Secondary Plan are in the City's *Office Consolidation Secondary Plan Area 48 – Countryside Villages Secondary Plan*. The Secondary Plan policy includes intended road facilities and functions, which according to the policy is to be further refined at the Block Plan stage of approval and further refined at the subdivision stage of approval. The purpose of the Traffic Impact Study is to confirm, identify and recommend road improvements to accommodate traffic needs related to the proposed development for Block 48-2. This includes the following activities:

- Review and assess the existing traffic condition;
- Estimate and project future traffic volumes related to growth and developments within the Study Area for the 2021 and 2031 time horizons; and,
- Review and assess future traffic operations given the traffic forecast, with and without the proposed development.

- Multi-use trails or similar walking / cycling paths to / from the four (4) elementary schools and one (1) secondary school from every adjacent residential neighbourhood.

**Figure 3-7** illustrates the pathway and trails proposed by the City Transportation Master Plan – Technical Report 5 (Active Transportation report). It also illustrates the additional inter-block pathways and trails recommended in this Study.

## 3.5 Transit Network

As confirmed by Brampton Transit, the ultimate transit service strategy for Block 48-2 has been determined and illustrated in **Figure 3-8**, following the Report. In this transit service strategy, the primary corridor routes will be extended aligned to the arterial roads to extend the "base grid" philosophy of the transit network to this area. The proposed transit routes will provide transit availability to the future proposed residential areas and the proposed school locations. The proposed ultimate transit routes are as follows:

- Route 15 Bramalea extension;
- Route 14 Tobram extension;
- Route 30 Airport Road extension;
- Future Mountainash / Inspire Boulevard Local Route;
- Future Route 12 Grenoble extension; and,
- Future Countryside Drive route.

**Figure 3-8** also illustrates the proposed bus stop locations. The potential stop locations were determined after consultation with Brampton Transit based on balancing maximizing route coverage and minimizing walk distance to attract people to use public transit. As shown on Figure 3-8, the proposed bus stop locations are within a 400m walking distance of most uses in the community.

Interim transit service will be provided at the discretion of Brampton Transit as the area is gradually developed and occupied. The implementation time of the transit services will depend on the development pace and the provision of necessary infrastructure required to support regular transit operations. The associated transit stop locations will be established through subdivision applications submitted to Brampton Transit.

## 3.6 Trip Generation (Block 48-2 Traffic Volumes)

Block 48-2 will include 3,391 low to medium density residential developments, 22.59 ha of institutional lands including three (3) elementary schools, two (2) secondary schools and two (2) worship places, and 14.43 ha of commercial / retail lands including district retail, mixed use and convienience commercial lands. The district retail and worship uses have been assessed as part of separate traffic impact studies and thus are included in this study as background developments. The trip generation for the remaining area was undertaken using information contained in the *Trip Generation, 9th Edition* published by the Institute of Transportation Engineers (ITE) and is summarized in **Table 3.4** on the following page.

A 6% transit / active transportation mode reduction was applied based on the Countryside Villages Secondary Plan Study and is consistent with the transit / active transportation mode reductions in the Block 48-1 Traffic Impact Study. The 6% transit / active transportation mode reduction accounts for trips that will be taken through active transportation modes such as walking / cycling or through transit use. For further details on active transportation, refer to **Section 3.4**.

**Table 3.4 Site Trip Generation (New Site Statistics)**

| Land Use | ITE Land Use Code | Parameter | WEEKDAY AM Peak Hour | | | WEEKDAY PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Low Density Residential 1,723 Units | Single Family Detached Housing (ITE Land Use Code 210) | Gross Rate (Trips / Unit) | 0.19 | 0.56 | 0.75 | 0.63 | 0.37 | 1.00 |
| | | Gross Trips | 323 | 969 | 1292 | 1085 | 638 | 1723 |
| | | Non-auto Reduction (6%) | 19 | 59 | 78 | 65 | 38 | 103 |
| | | New Auto Trips | 304 | 910 | 1214 | 1020 | 600 | 1620 |
| Medium Density Residential 1,668 Units | Residential Condominium/ Townhouse (ITE Land Use Code 230) | Gross Rate (Trips / 1000 $ft^2$)(1) | 0.07 | 0.37 | 0.44 | 0.35 | 0.17 | 0.52 |
| | | Gross Trips | 125 | 609 | 734 | 581 | 286 | 867 |
| | | Transit / Active Transportation Reduction (6%) | 8 | 36 | 44 | 35 | 17 | 52 |
| | | New Auto Trips | 117 | 573 | 690 | 546 | 269 | 815 |
| Elementary Schools 3 @ 800 each 2400 Students | Elementary School (ITE Land Use Code 520) | Gross Rate (Trips / Unit) | 0.25 | 0.20 | 0.45 | 0.07 | 0.08 | 0.15 |
| | | Gross Trips | 594 | 486 | 1080 | 176 | 184 | 360 |
| | | Non-auto Reduction (0%) | - | - | - | - | - | - |
| | | New Trips | 594 | 486 | 1080 | 176 | 184 | 360 |
| Secondary School 2 @ 1500 each 3000 Students | High School (ITE Land Use Code 530) | Gross Rate (Trips / Unit) | 0.29 | 0.14 | 0.43 | 0.06 | 0.07 | 0.13 |
| | | Gross Trips | 877 | 413 | 1290 | 183 | 207 | 390 |
| | | Non-auto Reduction (0%) | - | - | - | - | - | - |
| | | New Trips | 877 | 413 | 1290 | 183 | 207 | 390 |
| Mixed Use and Conv. Commercial (12,715 sqm GFA) | Shopping Center (ITE Land Use Code 820) | Gross Rate (Trips / 1000 $ft^2$) | 0.85 | 0.53 | 1.38 | 2.59 | 2.81 | 5.40 |
| | | Gross Trips | 117 | 72 | 189 | 355 | 384 | 739 |
| | | Non-auto Reduction (6%) | 7 | 4 | 11 | 21 | 23 | 44 |
| | | New Trips | 110 | 68 | 178 | 334 | 361 | 695 |
| **Total New Trips** | | | **2002** | **2450** | **4452** | **2259** | **1621** | **3880** |

Based on the approved Block Plan, the proposed development is expected to generate **4,452** two-way trips (2,002 inbound trips and 2,450 outbound trips) during the weekday morning peak hour and **3,880** two-way trips (2,259 inbound trips and 1,621 outbound trips) during the weekday p.m. peak hour.

Based on the former site statistics, Block 48-2 was to contain 3,593 low to medium density residential developments, four (4) elementary schools, one (1) secondary school, two (2) worship places, and 14.43 ha of commercial / retail lands. The district retail and worship uses were assessed as part of separate traffic impact studies and thus were included in this study as background developments. For the remaining Block 48-2 development trip generation, based on the former site statistics, was undertaken using information contained in the Trip Generation, 8th Edition published by the Institute of Transportation Engineers (ITE). Trip generation based on the former site statistics is summarized in **Table 3.5**.

Based on the land areas for the low density and medium density residential zones as shown in **Figure 1-2**, following the Report, it was assumed that 80% of the residential units will be low density with remaining 20% as medium density.

**Table 3.5 Site Trip Generation (Former Site Statistics)**

| Land Use | ITE Land Use Code | Parameter | WEEKDAY AM Peak Hour | | | WEEKDAY PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Low Density Residential 2,843 Units | Single Family Detached Housing (ITE Land Use Code 210) | Gross Rate (Trips / Unit) | 0.20 | 0.57 | 0.77 | 0.64 | 0.36 | 1.00 |
| | | Gross Trips | 568 | 1621 | 2189 | 1872 | 1053 | 2925 |
| | | Non-auto Reduction (6%) | 33 | 98 | 131 | 113 | 62 | 175 |
| | | New Auto Trips | 535 | 1523 | 2058 | 1759 | 991 | 2750 |
| Medium Density Residential 750 Units | Residential Condominium/ Townhouse (ITE Land Use Code 230) | Gross Rate (Trips / 1000 ft$^2$) | 0.09 | 0.42 | 0.51 | 0.33 | 0.19 | 0.52 |
| | | Gross Trips | 68 | 291 | 359 | 250 | 140 | 390 |
| | | Transit / Active Transportation Reduction (6%) | 4 | 19 | 23 | 15 | 9 | 24 |
| | | New Auto Trips | 64 | 272 | 336 | 235 | 131 | 366 |
| Elementary Schools 4 @ 800 each 3200 Students | Elementary School (ITE Land Use Code 520) | Gross Rate (Trips / Unit) | 0.25 | 0.20 | 0.45 | 0.07 | 0.08 | 0.15 |
| | | Gross Trips | 792 | 648 | 1440 | 236 | 244 | 480 |
| | | Non-auto Reduction (0%) | 0 | 0 | 0 | 0 | 0 | 0 |
| | | New Trips | 792 | 648 | 1440 | 236 | 244 | 480 |
| Secondary School 1500 Students | High School (ITE Land Use Code 530) | Gross Rate (Trips / 1000 ft$^2$) | 0.26 | 0.16 | 0.42 | 0.06 | 0.07 | 0.13 |
| | | Gross Trips | 391 | 239 | 630 | 92 | 103 | 195 |
| | | Non-auto Reduction (6%) | 0 | 0 | 0 | 0 | 0 | 0 |
| | | New Trips | 391 | 239 | 630 | 92 | 103 | 195 |
| **Total New Trips** | | | **1782** | **2682** | **4464** | **2322** | **1469** | **3791** |

Based on the former site statistics, the proposed development is expected to generate **4,464** two-way trips (1,782 inbound trips and 2,682 outbound trips) during the weekday morning peak hour and **3,791** two-way trips (2,322 inbound trips and 1,469 outbound trips) during the weekday p.m. peak hour. As the generated trips using the former site statistics are very similar to the trips generated using the new site statistics, the analysis that was based on the former site statistics were maintained for this study.

## 3.7 Trip Distribution and Assignment

Trip distribution for the residential component was established based on the 2006 Transportation Tomorrow Survey (TTS). This assumption was further reviewed to generate trip distributions on roads within the study area based on routes that drivers would likely take to access the Study Area and move around. **Table 3.6** below summarizes the directional distribution of the residential uses. Additional trip distribution analysis was conducted based on the 2006 TTS for a similar area south of Block 48-2 bounded by Countryside Drive to the north, Sandalwood Parkway to the south, Airport Road to the east, and Bramalea Road to the west as per Region's comments.

School distribution data was received from the Peel District School Board in 2012. As confirmed by the Peel District School Board, the proposed elementary schools will serve the immediate neighbourhood, as such most of the trips are expected to be generated within the study area. Therefore, it is assumed that 90% of elementary school trips will be generated within the study area and 10% will be generated externally. One of the proposed secondary schools will operate under the Region's separate school board and the other one will operate under the public board. Based on the existing school catchment area (illustrated in **Figure 3-9**) and the location of the proposed secondary schools, it is assumed that 20% of secondary schools trips will be generated internaly and 80% will be generated externally.

As the study area is geographically located along the northern boundary of the existing school catchment areas, it is expected that all external school trips will be designated to / from the west, south and east, as summarized in **Table 3.7** on the following page.

**Table 3.6 Residential Trip Distribution**

| Direction | Via | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Inbound | | Outbound | | Inbound | | Outbound | |
| | | Percentage | Traffic Data | Percentage | Traffic Data | Percentage | Traffic Data | Percentage | Traffic Data |
| North | Bramalea Road | 5% | 608 | 1% | 198 | 1% | 198 | 5% | 608 |
| | Torbram Road | 0% | 0 | 0% | 0 | 0% | 0 | 0% | 0 |
| | Airport Road | 10% | 2078 | 1% | 496 | 1% | 496 | 10% | 2078 |
| South | Bramalea Road | 10% | 2270 | 15% | 6067 | 15% | 6067 | 10% | 2270 |
| | Torbram Road | 10% | 2064 | 15% | 5801 | 15% | 5801 | 10% | 2064 |
| | Airport Road | 20% | 3765 | 25% | 8482 | 25% | 8482 | 20% | 3765 |
| East | Mayfield Road | 5% | 946 | 3% | 704 | 3% | 704 | 5% | 946 |
| | Countryside Drive | 5% | 706 | 10% | 1525 | 10% | 1525 | 5% | 706 |
| West | Mayfield Road | 25% | 4495 | 25% | 8592 | 25% | 8592 | 25% | 4495 |
| | Countryside Drive | 10% | 1976 | 5% | 1696 | 5% | 1696 | 10% | 1976 |
| **Total** | | **100%** | **18907** | **100%** | **3356** | **100%** | **3356** | **100%** | **18907** |

**Table 3.7 External School Trip Distribution**

| Direction | Via | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|---|
| | | Inbound | Outbound | Inbound | Outbound |
| South | Bramalea Road | 10% | 10% | 10% | 10% |
| | Torbram Road | 20% | 20% | 20% | 20% |
| | Airport Road | 10% | 10% | 10% | 10% |
| West | Mayfield Road | 5% | 5% | 5% | 5% |
| | Countryside Drive | 5% | 5% | 5% | 5% |
| East | Mayfield Road | 25% | 25% | 25% | 25% |
| | Countryside Drive | 25% | 25% | 25% | 25% |
| **Total** | | **100%** | **100%** | **100%** | **100%** |

Within the Study Area, equal distribution of internal trips for school trips from all residential blocks were assumed.

Built upon the general trip distributions, site traffic was assigned to the Study Area intersections and access points. The Block 48-2 total site traffic volumes are shown in **Figure 3-10**, following the report.

# 4 Background Traffic Assumptions

This Study reviews the traffic conditions for the 2021 horizon year. The future background conditions for 2021 represents the baseline scenario without the Block 48-2 development.

## 4.1 Planned Transportation Improvements

**Table 4.1** below summarizes the planned transportation improvements based on the ***10-year Roads Capital Program*** from the City and the ***2011-2031 Road Program*** from the Region. Accordingly, the planned road improvements and associated timeline for the improvements are illustrated in **Figure 4-1**, following the Report.

**Table 4.1 Scheduled Road Improvements**

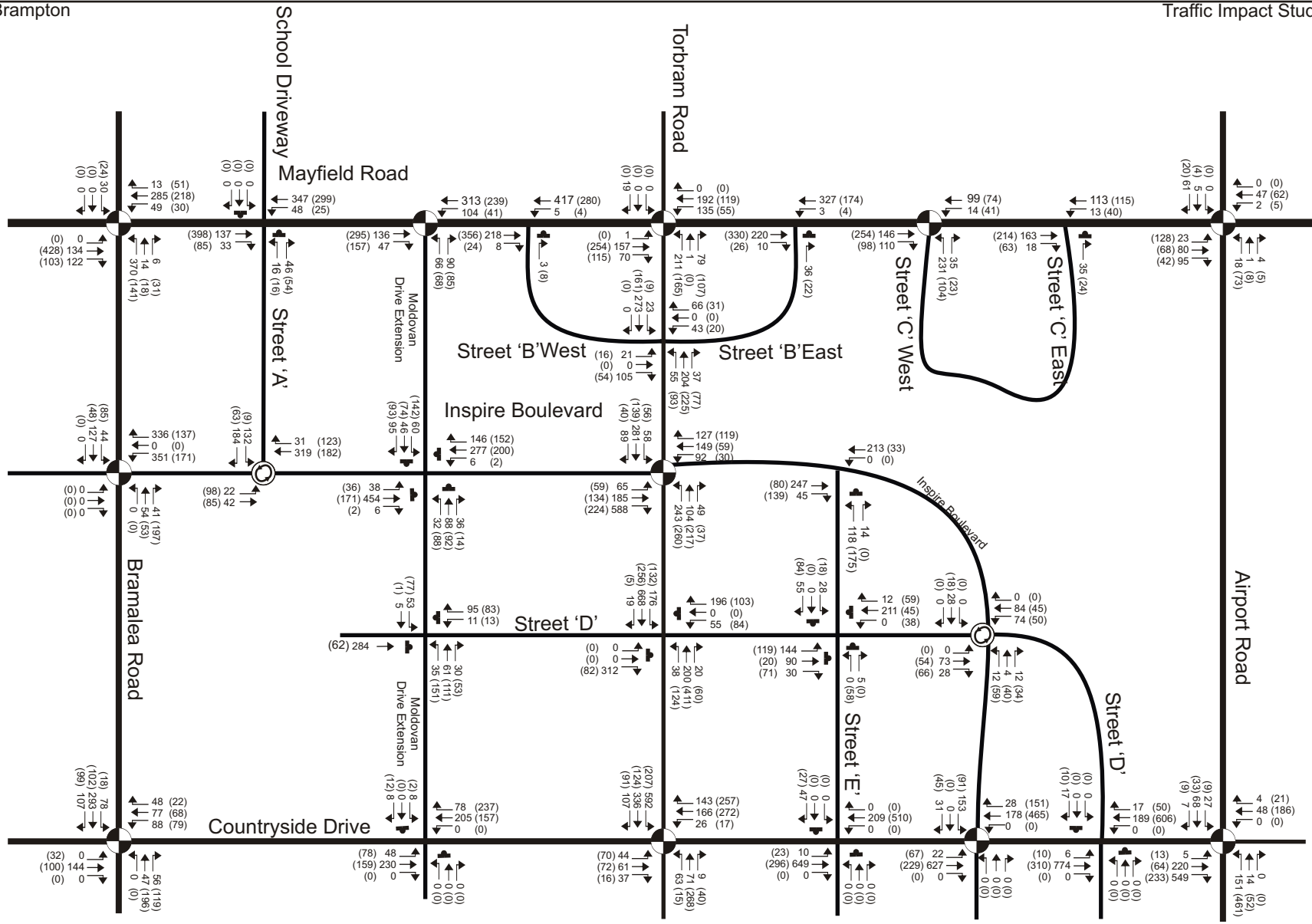
| Road | Section | Road Improvement | EA Status |
|---|---|---|---|
| Countryside Drive | Airport Road to Torbram Road | Widening to a four-lane cross section plus centre turn lane | Completed December 2005 |
| Countryside Drive | Torbram Road to Bramalea Road | Widening to a four-lane cross section plus centre turn lane | Completed June 2012 |
| Mayfield Road | Airport Road to Bramalea Road | Widening to a five-lane cross section with turning lanes | Completed May 2004 |
| Bramalea Road | Mayfield Road to Countryside Drive | Widening to a four-lane cross section plus centre turn lane | Completed November 2005 |
| Torbram Road | Mayfield Road to Countryside Drive | Widening to a four-lane cross section plus centre turn lane | Completed November 2010 |

Given the schedule of road improvements, the Study assumes that within the Study Area:

- Mayfield Road will be widened to five-lanes by 2021; and,
- Bramalea Road will be widened to four-lanes by 2021.




Figure 3-3
Block 48-2 Road Network




**Legend**

- Right Turn Movement
- Through Movement
- Left Turn Movement
- 99 (99) Weekday AM (Weekday PM) Peak Hour Traffic Volumes

N.T.S

Figure 3-10
Total Site Traffic Volumes



COLE ENGINEERING

# TRAFFIC IMPACT STUDY

**Proposed Commercial Development**
**13846 & 13940 Airport Road**
**Caledon, ON**

January 2022

**Prepared for**
RG Consulting Inc.

TOWN OF CALEDON
PLANNING
RECEIVED
March 18, 2022



TRANS-PLAN
Transportation Engineering

785 Dundas St W
Toronto, ON, M6J 1V2

1 (647) 931 7383
1 (877) 668 8784

trans-plan.com
admin@trans-plan.com

## 1. INTRODUCTION

Trans-Plan has been retained by RG Consulting Inc. to provide a Traffic Impact Study (TIS) for a proposed commercial development in the community of Sandhill, in the Town of Caledon, Regional Municipality of Peel.

Our Traffic Impact Study will consist of:

- A review of the proposed development
- A review and assessment of the existing road network
- An analysis of existing and future traffic conditions in the study area, based on recent traffic counts at the study area intersections
- Site trip generation estimates for commercial uses, based on development plans
- An assessment of the impact of site-generated traffic on the study area intersections under future background and total traffic conditions at full build-out (2 years), and a 5-year horizon
- Determination of any roadway improvements, if necessary, to accommodate the proposed development

York Region transportation staff were provided a study terms of reference prior to the completion of the study.

### SITE LOCATION

The site, shown in Figure 1, is located at 13846 and 13940 Airport Road, on the southwest quadrant of Airport Road and King Street. Currently the site is vacant, with the surrounding area consisting of mostly residential uses, and includes an Auto Market, a Trucking Company, and a Community Church.

## 2. PROPOSED DEVELOPMENT

The proposed site plan, provided in Figure 2, includes three blocks consisting of 8 buildings designated for commercial uses, and shows the following changes to the lot:

Block 1

- Building 'A' – one-storey building with a total GFA of 4,036 ft² (375m²)
- Building 'B' – two-storey building with a total GFA of 42,334 ft² (3,933m²)
- Building 'C' – two-storey building with a total GFA of 13,024 ft² (1,210m²)
- Building 'H' – one-storey building with a total GFA of 695 ft² (64.6m²)

Block 3

- Building 'D' – two-storey building with a total GFA of 11,786 ft² (1,097 m²)
- Building 'E' – two-storey building with a total GFA of 45,187 ft² (4,198 m²)
- Building 'F' and Building 'G' – two-storey buildings each with a total GFA of 47,318 ft² (4,396m²), and a combined GFA of 94,636 ft² (8,792m²)

Access to the site is proposed via three (3) driveways along Airport Road: one full moves access approximately 300m south of the Airport Road and King Street intersection and is proposed to be signalized. The other two accesses are configured as right-in/right-out (RIRO) and are located approximately 165m and 300m north and south of the full moves access, respectively.

There will be internal laneway connections between Block 1 and Block 2 stemming from the private road allowance to allow connectivity for motorists to each access point.

The development also proposes the implementation of traffic signals at the full moves access to maintain operational efficiency along the corridor, however the Region of Peel has recently approved road improvements for the segment of Airport Road included in the study area, which will be discussed further in this report.

## 3. EXISTING CONDITIONS

### 3.1 Road Network

The study area roadway characteristics are shown in Figure 3. The boundary roadways located in the study area are described as follows:

**Airport Road (Regional Road 7)** is a two-lane arterial road running in a north-south direction, under the jurisdiction of the Region of Peel. Airport Road consists of two travel lanes; one in each direction, with the posted speed limit set at 80 km/h, and a reduction to 60 km/h on the north and south approaches to its intersection with King Street.

**King Street (Regional Road 9)** is a two-lane arterial road running east-west under the jurisdiction of the Region of Peel, located north of the site. King Street consists of two travel lanes; one in each direction, with the posted speed limit set at 70 km/h. King Street and Airport Road form a signalized intersection, which acts as the northern limit of the study area.

**Old School Road** is two-lane local road running in an east-west direction under the jurisdiction of the Region of Peel, with the posted speed limit set at 70 km/h. Old School Road intersects with Airport Road approximately 2.5 kilometers south of the site as the west approach, forming an offset unsignalized intersection with Healey Road.

**Healey Road** is a two-lane local road running in an east-west direction, under the jurisdiction of the Region of Peel, with the posted speed limit set at 70 km/h. Healey Road is located approximately 40m south of the Old School Road and Airport Road intersection, acting as the east approach.

### 3.2 Traffic Counts

Detailed TMC data for intersections within the study area was either obtained from Spectrum or conducted by Trans-Plan, and current signal timing plans for the Airport Road and King Street intersection provided by the Region of Peel. Source data is provided in Appendix A, and a summary of the count hours and peak hours obtained for each intersection provided in Table 1.

- Implementation of two-lane roundabout intersections at:
  - Airport Road & King Street
  - Airport Road and Old School Road / Healey Road
- Road widening from 2 to 4 lanes
- Two-way center left-turn lane

The above-mentioned road improvements are expected to start construction by 2024, with anticipated completion by 2025, and therefor will be included in the analysis of future background and total traffic conditions for the 2028 horizon year. Appendix C provides some design drawings we received, depicting the roundabout designs.

The site plan also proposes traffic signals to be implemented at the main full-movement access due to the anticipated high left-turning volumes and will be analyzed as a signalized intersection in the capacity analysis provided further in this report. The future study area roadway characteristics are illustrated in Figure 5.

It should be noted that for the analysis of background traffic conditions for the horizon year 2028, TMC data used for the offset intersection at Airport Road and Old School Road / Healey Road was adjusted to depict intersection movements more accurately for the new roundabout configuration anticipated in 2025. Based on the review of future background conditions, future background traffic volumes for the 2023 and 2028 horizon years are provided in Figure 6 and Figure 7, respectively.

## 5. SITE TRAFFIC

### 5.1 Trip Generation

Site trips for the proposed development were generated using the Institute of Transportation Engineers (ITE) Trip Generation manuals, 10th Edition. Land uses for each building have not yet been designated, as a result, Land Use Code (LUC) 820 for Shopping Centers was utilized. Although the trip generation results are seemingly aggressive, this was done to represent more of a worst-case scenario, as to ensure not to undercut the potential trips generated by the proposed development.

An adjustment for pass-by trips is also included which arise from existing traffic on the roadway network entering the proposed development as an intermediate stop on the way to another ultimate destination along the same travel route. Typical pass-by trip rates are provided in the ITE Trip Generation Handbook for shopping centers and indicates average pass-by trip rates are 0%, 34% and 26% during the AM, PM and Saturday peak periods, respectively.

A summary of the trip generation of the proposed site is provided in Table 2.

Table 2 – Site Trip Generation Results

| Land Use | Size (Sq.ft. GFA) | | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | | Saturday Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total | In | Out | Total |
| Shopping Center (ITE Code 820) | 212.5 | Distribution | 62% | 38% | 100% | 48% | 52% | 100% | 52% | 48% | 100% |
| | | Equation | T = 0.50(X) + 151.78 | | | Ln(T) = 0.74 Ln(X) + 2.89 | | | Ln(T) = 0.79 Ln(X) + 2.79 | | |
| | | Rate | 0.75 | 0.46 | 1.21 | 2.15 | 2.32 | 4.47 | 7.27 | 6.72 | 13.99 |
| | | Trips | 160 | 98 | 258 | 456 | 493 | 949 | 584 | 539 | 1123 |
| | | Pass-by (0% AM, 34% PM, 26% SAT) | 0 | 0 | 0 | 161 | 161 | 322 | 146 | 146 | 292 |
| **Total New Site Trips** | | | **160** | **98** | **258** | **295** | **332** | **627** | **438** | **393** | **831** |

Based on the trip generation, the subject site is expected to generate approximately 258 new two-way trips during the weekday AM peak hour, 627 trips in the PM peak hour, and 831 during the Saturday peak hour.

### 5.2 Trip Distribution and Assignment

Site trips were distributed and assigned to/from the site and the boundary roadways within the study area according to the existing traffic patterns along Airport Road between King Street and Healey Road, as derived from the traffic counts. The existing traffic volume percent split along Airport Road is an approximate 70/30 split during the weekday, with southbound traffic acting as the predominant flow during the AM peak hour, and northbound being predominant in the PM peak hour. The existing traffic volume split during the Saturday peak hour is an approximate 50/50 split.

The site traffic assignment for the development is provided in Figure 8, and pass-by traffic assignment for the weekday AM and PM, and Saturday peak hours is shown in Figure 9.

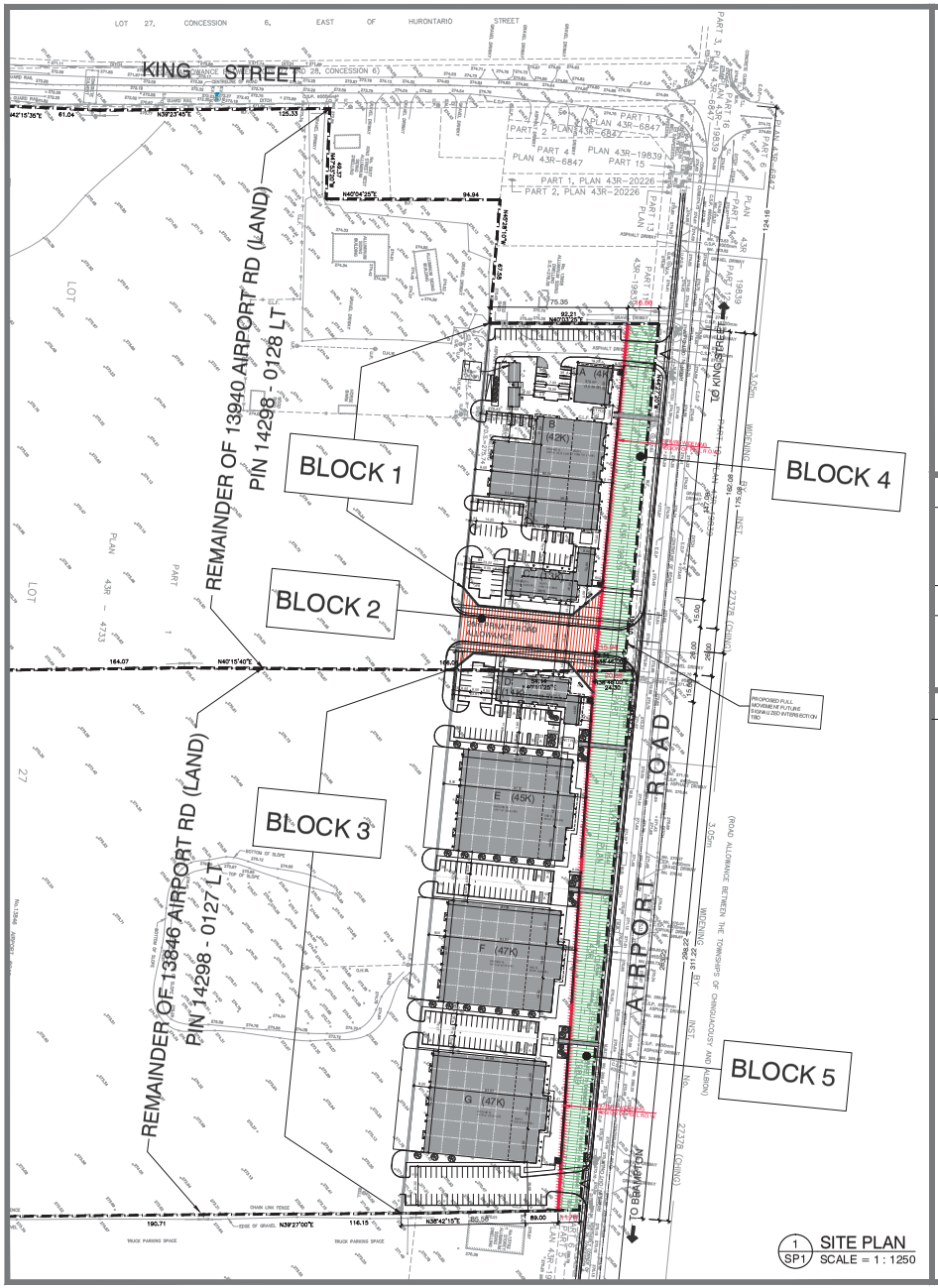
## 6. FUTURE TOTAL TRAFFIC CONDITIONS

Site traffic volumes were added to the future background traffic volumes to obtain future total traffic volumes for the peak hours. The future total traffic volumes for the horizon years 2023 and 2028 in the weekday AM and PM, and Saturday peak hours are shown in Figure 10 and Figure 11, respectively.

## 7. CAPACITY ANALYSIS

A capacity analysis was undertaken for the study area intersections and site driveway access points using Synchro analysis software.

As mentioned previously in this report, road improvements along Airport Road have been approved, with construction anticipated to begin by 2024 and completed by 2025. This in mind, traffic modelling for the




1 SP1 SITE PLAN
SCALE = 1 : 1250

## LEGEND

- SITE BOUNDARY
- PROPOSED ROAD WIDENING BY REGION OF PEEL TRANSPORTATION (13940 AIRPORT RD - 15.94 TO 16.86 m WIDE))
- PROPOSED ROAD WIDENING BY REGION OF PEEL TRANSPORTATION (13846 AIRPORT RD - 11.76 TO 20.88 m WIDE)
- PROPOSED 26M ROAD ALLOWANCE
- PROPOSED BUILDING FOOTPRINT
- SP — PROPOSED SIGN PYLON LOCATION
- A — PROPOSED ACCESSIBLE PARKING TYPE A
- B — PROPOSED ACCESSIBLE PARKING TYPE B
- ART POD 1 — PROPOSED ART POD LOCATION REFER TO TYPICAL ENLARGEMENT BY LANDSCAPE ARCHITECT - STUDIO TLA
- a+w=SO — PROPOSED ART+WORK SIGN WALL LOCATION
- DC — PROPOSED DEPRESSED CURB, AS PER TOWN OF CALEDON STANDARDS.

NOTES - SITE PLAN CONSIDERATIONS :
1. AIRPORT ROAD IS PROPOSED TO EXPAND TO A 45m R.O.W.
2. NUMBER OF PARKING STALLS ARE DEPENDANT ON USE OF BUILDING
3. 26m R.O.W. TO SPLIT TWO PROPOSED BLOCKS
4. SUBJECT SITE IS CURRENTLY ZONED HIGHWAY COMMERCIAL UNDER BY-LAW 2006-50, CALEDON

## KEY MAP - NTS — SUBJECT PROPERTY




## LEGAL DESCRIPTION :

PART OF LOT 27, CONCESSION 6
EAST OF HURONTARIO STREET
FORMERLY IN THE TOWNSHIP OF CHINGUACOUSY,
COUNTY OF PEEL,
NEW IN THE TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

## SURVEY NOTE :

SITE PLAN INFORMATION TAKEN FROM BOUNDARY AND TOPOGRAPHIC SURVEY PLAN PREPARED BY
MANDARIN SURVEYORS LTD. O.L.S., C.L.S.
DATED:
FEBRUARY 10, 2020 - PROPERTY AT 13840 AIRPORT RD AND
FEBRUARY 11, 2020 - PROPERTY AT 13940 AIRPORT RD

## CONSULTANT LIST :

| | | |
|---|---|---|
| PLANNING & ARCHITECTURE: | RG CONSULTING INC. | 416.213.0200 |
| LANDSCAPE DESIGN: | STUDIO TLA | 416.638.4911 |
| ENGINEERING: | CALDER ENGINEERING LTD. | 905.857.7600 |
| ENVIRONMENTAL: GEOTECHNICAL & HYDROGEOLOGICAL: | PEACE ENVIRONMENTAL HLV2K ENGINEERING LIMITED | 416.213.1700 905.569.9765 |
| O.L. SURVEYING: | MANDARIN SURVEY GROUP | 647.430.1366 |

## BLOCK AND BUILDING SCHEDULE :

### BLOCK 1
ZONING DESIGNATION - CH 563
11,715m² (1.17 hc = 2.90 ac)
BLOCK 1 BUILDING SCHEDULE:

| | GROUND FLOOR AREA: | 2ND FLOOR: | TOTAL BUILDING AREA: |
|---|---|---|---|
| H - | 136.3 m² : 1,467 SF (EX. HOUSE INCLUDED - 64.6 m² - 695 SF) | | |
| A - | 375.0 m² : 4,036 SF | | |
| B - | 2,900.0 m² : 31,215 SF | 1,033.0 m² : 11,119 SF | 3,933.0 m² : 42,334 SF |
| C - | 770.0 m² : 8,288 SF | 440.0 m² : 4,736 SF | 1,210.0 m² : 13,024 SF |

TOTAL BUILDING AREA INCLUDING 2ND FLOOR:
5,654.3 m² : 60,862 SF (DENSITY 48.3%)

TOTAL NUMBER OF PARKING : 83
6 TYPE A AND 3 TYPE B ACCESSIBLE PARKING INCLUDED)

### BLOCK 2
ZONING DESIGNATION - CH 563 AND SOUTH PART - CH 302
2,280 m² (0.23 hc = 0.56 ac)
26 m WIDE ROAD ALLOWANCE - PRIVATE ROAD

### BLOCK 3
ZONING DESIGNATION - CH 302 AND NORTH PART - CH 563
24,221 m² (2.42 hc = 5.99 ac)

| | GROUND FLOOR AREA: | 2ND FLOOR: | TOTAL BUILDING AREA: |
|---|---|---|---|
| D - | 712.0 m² : 7,664 SF | 385.0 m² : 4,144 SF | 1,097.0 m² : 11,786 SF |
| E - | 3,377.0 m² : 36,350 SF | 821.0 m² : 8,837 SF | 4,198.0 m² : 45,187 SF |
| F - | 3,476.0 m² : 37,415 SF | 920.0 m² : 9,902 SF | 4,396.0 m² : 47,318 SF |
| G - | 3,476.0 m² : 37,415 SF | 920.0 m² : 9,902 SF | 4,396.0 m² : 47,318 SF |

TOTAL BUILDING AREA INCLUDING 2ND FLOOR:
14,087 m² : 151,631SF (DENSITY 58.2%)

TOTAL NUMBER OF PARKING : 166
(6 TYPE A AND 6 TYPE B ACCESSIBLE PARKING INCLUDED)

### BLOCK 4
ZONING DESIGNATION - CH 563
3,112 m² (0.31 hc = 0.77 ac)
ROAD WIDENING BY REGION OF PEEL TRANSPORTATION

### BLOCK 5
ZONING DESIGNATION - CH 302
4,808 m² (0.48 hc = 1.19 ac)
ROAD WIDENING BY REGION OF PEEL TRANSPORTATION

## SITE STATISTICS :

TOWN OF CALEDON - ZONING BY-LAW 2006-50 - CH - HIGHWAY COMMERCIAL
ZONING DESIGNATION CH-563 AND CH-302

| | | PROPOSED | | | REQUIRED |
|---|---|---|---|---|---|
| LOT AREA : | DEVELOPMENT AREA (26 m PRIVATE ROAD ALLOWANCE INCLUDED) | 38,216 m² (2,280 m²) | 3.82 hc (0.23 hc) | 9.45 ac (0.53 ac) | |
| | PROPOSED ROAD WIDENING BY REGION OF PEEL TRANSPORTATION (13940 AIRPORT RD) | 3,112 m² | 0.31 hc | 0.77 ac | |
| | PROPOSED ROAD WIDENING BY REGION OF PEEL TRANSPORTATION (13846 AIRPORT RD) | 4,808 m² | 0.48 hc | 1.19 ac | |
| | TOTAL LOT AREA | 46,136m² | 4.61 hc | 11.40 ac | |
| TOTAL COVERAGE : | | 15,222.3 m² (163,851 SF) | | | |
| TOTAL 2ND STOREY AREA : | | 4,519.0 m² (48,642 SF) | | | |
| TOTAL BUILDING GFA : | | 19,741.3 m² (212,493 SF) | | | |
| TOTAL DENSITY : | | 51.7% | | | |
| TOTAL NUMBER OF PARKING SPACES: (1 SPACE / 40m²) (ACCESSIBLE PARKING INCLUDED) | | 249 | | | 381 |
| ACCESSIBLE PARKING : (REQUIRED 2 ACCESSIBLE SPACES + 2%) | | 20 | | | 10 |
| TOTAL NUMBER OF LOADING SPACES: (1 / 2,800 m² OF NET FLOOR AREA) | | 23 | | | 6 |

2 SP1 SITE PLAN SECTION A-A
SCALE = 1 : 250

THESE PLANS ARE THE COPYRIGHT PROPERTY OF RG CONSULTING INC. AND CANNOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION.

THE CLIENT SHALL BE ENTITLED TO A COPY OF ALL DRAWINGS, SPECIFICATIONS, DESIGNS AND DOCUMENTS PREPARED BY THE CONSULTANT, BUT SHALL NOT USE THEM FOR ANY OTHER PROJECT. THE ORIGINALS SHALL REMAIN THE PROPERTY OF RG CONSULTING INC.

CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND BE RESPONSIBLE TO REPORT ON ADVANCE OF CONSTRUCTION IN WRITING ANY DISCREPANCIES BEFORE COMMENCING ANY WORK.

ONLY FINAL APPROVED DRAWINGS TO BE USED FOR CONSTRUCTION AND BY THE LOCAL MUNICIPAL AUTHORITY. ALL PRINTS TO BE RETURNED UPON COMPLETION OF WORK.

PRINTS ARE NOT TO BE SCALED

| NO.: | DATE: | REVISION: |
|---|---|---|
| 1 | 26/06/17 | PRELIMINARY |
| 8 | 27/05/19 | PRELIMINARY |
| 13 | 25/09/19 | PRELIMINARY- FLOOR PLANS |
| 14 | 15/11/19 | ISSUED FOR DART MEETING |
| 15 | 03/12/19 | TOWN COMMENTS CHANGES |
| 16 | 12/12/19 | ISSUED FOR COORDINATION |
| 17 | 09/01/20 | TOWN COMMENTS CHANGES |
| 18 | 05/02/20 | ISSUED FOR COORDINATION |
| 19 | 26/02/20 | ISSUED FOR COORDINATION |
| 20 | 21/04/20 | HERITAGE HOUSE LANDSCAPE |
| 21 | 06/05/20 | ISSUED FOR COORDINATION |
| 25 | 25/05/20 | ISSUED FOR COORDINATION |
| 26 | 04/06/20 | ISSUED FOR COORDINATION |
| 27 | 17/07/20 | ISSUED FOR COORDINATION |
| 28 | 19/11/20 | ISSUED FOR COORDINATION |
| 29 | 19/01/21 | ISSUED FOR COORDINATION |
| 30 | 23/03/21 | ISSUED FOR COORDINATION |
| 31 | 14/07/21 | ISSUED FOR COORDINATION |
| 32 | 09/08/21 | ISSUED FOR COORDINATION |

- ☐ ISSUED FOR CONSTRUCTION
- ☐ ISSUED FOR PRICING
- ☐ ISSUED FOR BUILDING PERMIT
- ☐ ISSUED FOR PRELIMINARY REVIEW

www.rgcdesigngroup.com

RGC
R G CONSULTING INC.
2201 Finch Avenue West, Suite #27, Toronto, Ontario M9M 2Y9
Tel.: 416 213 0200, Fax: 416 213 0202

DRAFT FOR DISCUSSION ONLY

PROPOSED DEVELOPMENT
FOR FALCO GROUP
13846 & 13940 AIRPORT ROAD
SANDHILL, CALEDON, ON

| | |
|---|---|
| project number: | 1710 |
| date: | JULY 2021 |
| scale: | AS NOTED |
| drawn by: | ZL |
| checked by: | RG |
| drawing number: | P17-01-01D |

MASTER SITE PLAN
SP1

## Figure 8: Site Trip Assignment, Weekday AM and PM, and Saturday Peak Hours

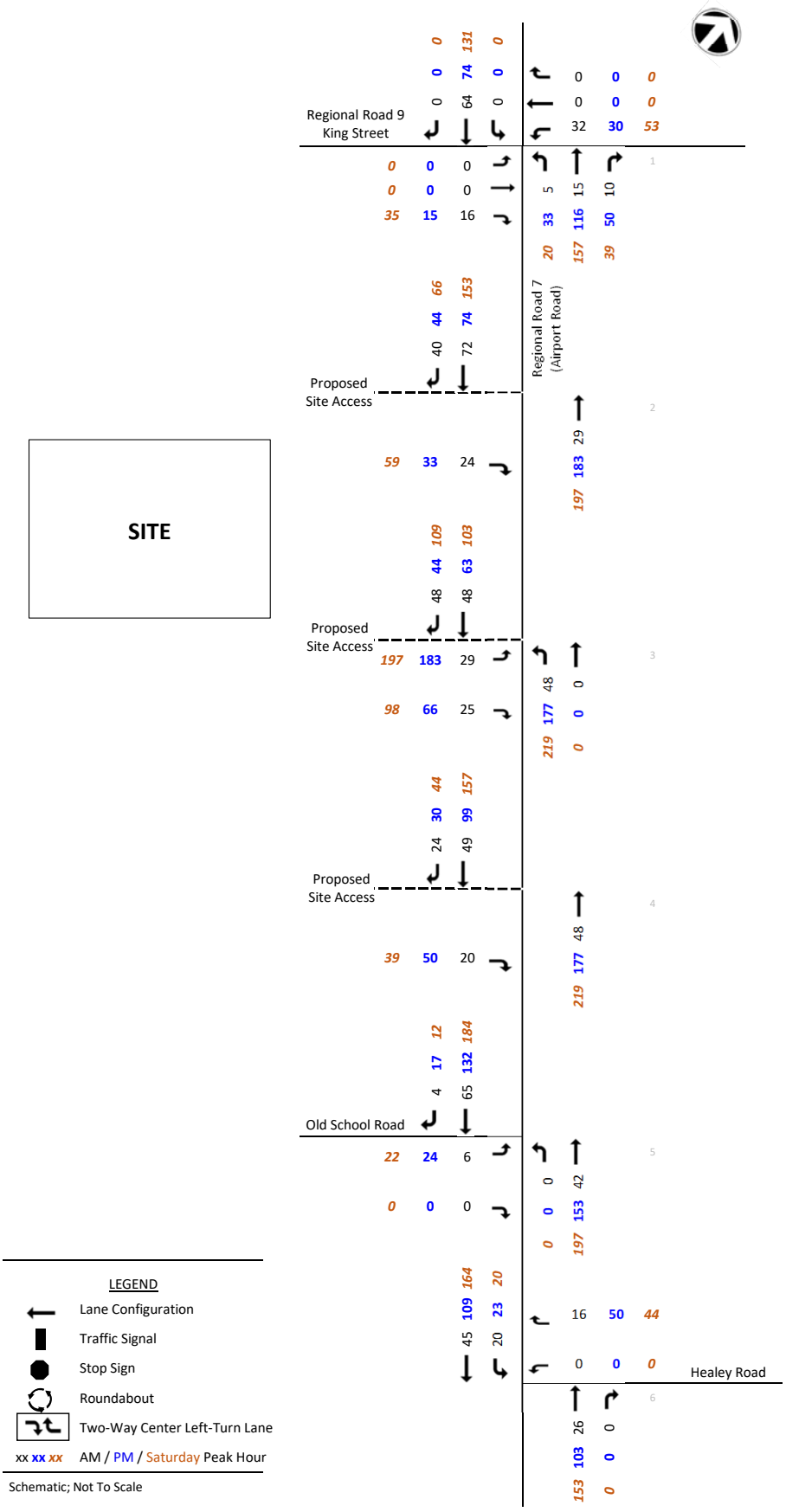
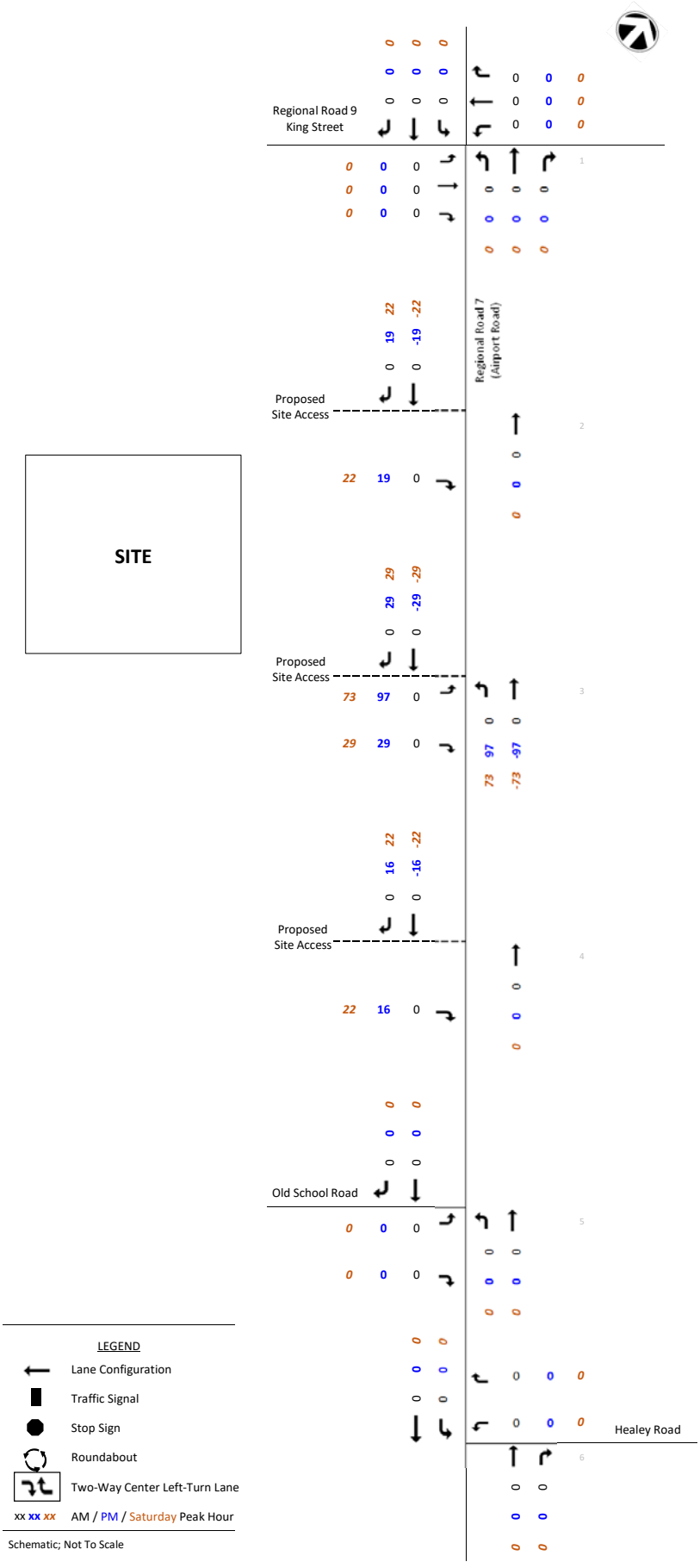


**Figure 9: Pass-by Trip Assignment, Weekday AM and PM, and Saturday Peak Hours**



TOWN OF CALEDON
PLANNING
RECEIVED
September 6, 2024

# MAYFIELD-TULLAMORE COMMUNITY

## Transportation Study



Prepared For: Mayfield-Tullamore Landowners Group

August 2024

BA Group

## 1.6 The Proposal

The community will consist of approximately 7,800 residential units, with a mix of unit types, as well as supporting institutional, recreational and non-residential uses. As a complete community, the supporting land-uses will generally act to internalize trip-making rather than act as external generators of activity.

## 1.7 This Study

A terms of reference related to this study was submitted to Town of Caledon staff in addition to two transportation-focussed pre-submission meeting. The terms of reference is appended as **Appendix A**.

The proposed community will be developed over a long period of time with a series of studies providing additional details as the plan evolves, comments are received, and phasing plans are refined. The purpose of this study is to provide an end-state (full build-out) review of the community to help confirm the basic structure of the community as a prelude to further discussions with stakeholders.

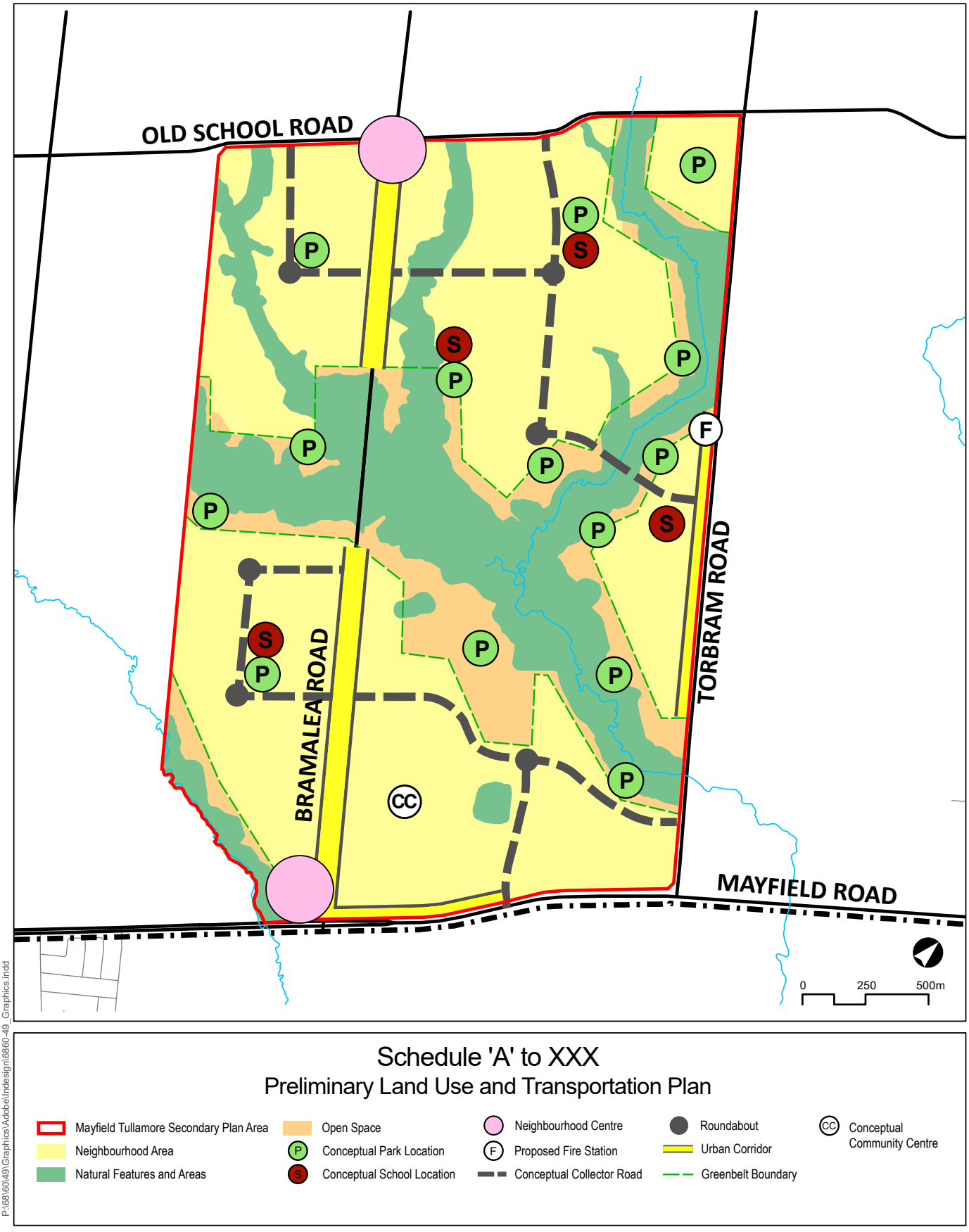



**FIGURE 4 STRUCTURE PLAN**

## 5.2 Site Generated Traffic

### 5.2.1 Residential Trip Generation

To develop an understanding of expected traffic generation and trip distribution across the internal collector road network, the structure plan has been divided into zones that are generally bounded by the proposed collector road network and the Greenbelt. **Exhibit 1** illustrates the assumed zones, lettered A to G.

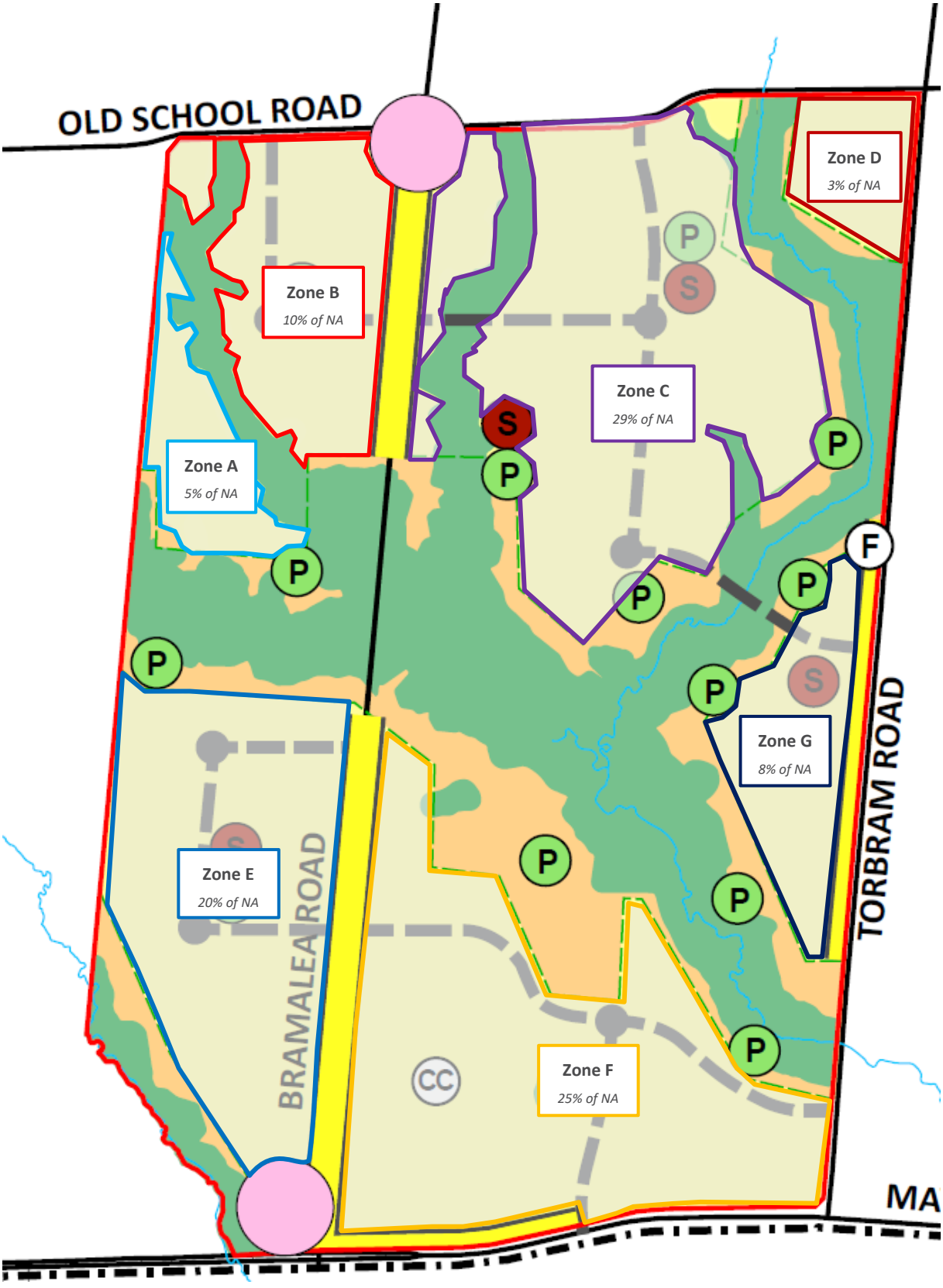



Exhibit 1: Traffic Zones

The land budget prepared for the plan provides the total number of units, by housing type across the neighbourhood area of the plan (land coloured in yellow in **Exhibit 1**). Based on the relative areas of the letter zones, an approximate number of housing units, per type, were assigned to each zone. It was assumed that single-/ semi-detached, street townhouses, and stacked houses were distributed evenly across zones, and that apartment units were concentrated in the neighbourhood centre located in Zone E. **Table 1** provides a summary of the unit distribution across letter zones.

Table 1 Neighbourhood Area - Unit Distribution by Zone

| Letter Zone | Approximate Number of Units per Type | | | | | |
|---|---|---|---|---|---|---|
| | Single / Semi-Detached | Secondary Unit | Street Townhouse | Stacked Townhouse | Apartment | Total |
| A | 208 | 0 | 143 | 59 | 0 | 410 |
| B | 375 | 0 | 257 | 107 | 0 | 740 |
| C | 1103 | 0 | 756 | 315 | 0 | 2174 |
| D | 112 | 0 | 77 | 32 | 0 | 221 |
| E | 749 | 0 | 513 | 214 | 325 | 1801 |
| F | 937 | 0 | 643 | 268 | 0 | 1847 |
| G | 310 | 0 | 213 | 89 | 0 | 612 |
| **Total** | **3795**[1] | **0** | **2602** | **1084** | **325** | **7806** |

Notes:
1. It is assumed that half of the single / semi-detached housing units are single detached housing units and half are semi-detached units.

Based on the above, vehicle trips were generated per zone based on trips rates provided in the 11th Edition of the ITE Trip Generation Manual for each type of housing unit. **Table 2** provides a summary of vehicle trip rates for each housing type.

Table 2 ITE Trip Generation by Housing Type

| Plan Designation | ITE LUC | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | 2-Way | In | Out | 2-Way |
| Single-Detached | 210: Detached Single Family Housing | 0.18 | 0.52 | 0.70 | 0.59 | 0.35 | 0.94 |
| Semi-Detached / Townhouses | 215: Attached Single Family Housing | 0.12 | 0.36 | 0.48 | 0.34 | 0.23 | 0.57 |
| Stacked Townhouse | 220: Multi-Family Housing (Low Rise) | 0.10 | 0.30 | 0.40 | 0.32 | 0.19 | 0.51 |
| Apartments | 221: Multi-Family Housing (Mid Rise) | 0.09 | 0.28 | 0.37 | 0.24 | 0.15 | 0.39 |

Based on the above trip rates, **Table 3** summarizes the number of trips expected to be generated by the site, structured by zone, during the morning and afternoon peak hours.

Table 3 Residential Vehicle Trips

| Letter Zone | Unit Type | Units | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | 2-Way | In | Out | 2-Way |
| A | Single | 104 | 20 | 55 | 75 | 60 | 35 | 100 |
| | Semis & Townhouse | 247 | 30 | 90 | 120 | 85 | 60 | 140 |
| | Stacked Townhouse | 59 | 5 | 20 | 25 | 20 | 10 | 30 |
| | **Zone A Total** | **410** | **55** | **165** | **220** | **165** | **105** | **270** |
| B | Single | 188 | 35 | 100 | 130 | 110 | 65 | 175 |
| | Townhouse | 445 | 55 | 160 | 215 | 150 | 105 | 255 |
| | Stacked Townhouse | 107 | 10 | 35 | 45 | 35 | 20 | 55 |
| | **Zone B Total** | **740** | **100** | **295** | **390** | **295** | **190** | **485** |
| C | Single | 551 | 95 | 285 | 385 | 325 | 190 | 520 |
| | Townhouse | 1307 | 155 | 470 | 630 | 440 | 305 | 745 |
| | Stacked Townhouse | 315 | 30 | 95 | 125 | 100 | 60 | 160 |
| | **Zone C Total** | **2174** | **280** | **850** | **1140** | **865** | **555** | **1425** |
| D | Single | 56 | 10 | 30 | 40 | 35 | 20 | 55 |
| | Townhouse | 133 | 15 | 50 | 65 | 45 | 30 | 75 |
| | Stacked Townhouse | 32 | 5 | 10 | 15 | 10 | 5 | 15 |
| | **Zone D Total** | **221** | **30** | **90** | **120** | **90** | **55** | **145** |
| E | Single | 374 | 65 | 195 | 260 | 220 | 130 | 350 |
| | Townhouse | 888 | 105 | 320 | 425 | 300 | 205 | 505 |
| | Stacked Townhouse | 214 | 20 | 65 | 85 | 70 | 40 | 110 |
| | Apartment | 325 | 30 | 95 | 120 | 75 | 50 | 125 |
| | **Zone E Total** | **1801** | **220** | **675** | **890** | **665** | **425** | **1090** |
| F | Single | 469 | 80 | 245 | 330 | 275 | 165 | 440 |
| | Townhouse | 1111 | 135 | 400 | 535 | 375 | 260 | 635 |
| | Stacked Townhouse | 268 | 25 | 80 | 105 | 85 | 50 | 135 |
| | **Zone F Total** | **1847** | **240** | **725** | **970** | **735** | **475** | **1210** |
| G | Single | 155 | 25 | 80 | 110 | 90 | 55 | 145 |
| | Townhouse | 368 | 45 | 135 | 175 | 125 | 85 | 210 |
| | Stacked Townhouse | 89 | 10 | 25 | 35 | 30 | 15 | 45 |
| | **Zone G Total** | **612** | **80** | **240** | **320** | **245** | **155** | **400** |
| **Total** | | **7806** | **1005** | **3040** | **4050** | **3060** | **1960** | **5025** |
| **Blended Trip Rate (7806 units)** | | | *0.13* | *0.39* | *0.52* | *0.39* | *0.25* | *0.64* |

The site is expected to generate 4,050 and 5,025 two-way residential vehicle trips during the morning and afternoon peak hours, respectively.

### 5.2.2 Retail Trip Generation

The structure plan currently proposes approximately 40,000 $m^2$ of retail GFA, to be distributed across the Urban Corridor (UC) area proposed for the site, which will be located primarily along Bramalea Road. Considering that the planned population of the community will total over 25,000 people, it is expected that the retail uses on site will primarily be oriented towards fulfilling the needs of the community, and the retail uses on site will not generate a significant amount of external trips.

### 5.2.3 Trip Distribution

Site traffic has been assigned to the area road network based on a review of travel information provided by the 2016 Transportation Tomorrow Survey (TTS) and expected road network traffic patterns and connectivity at the time of the buildout of the site. Site traffic distribution is summarized in **Table 4**. Detailed TTS output data and distribution assumptions are provided in **Appendix E**.

Table 4 Site Traffic Distribution

| Direction | Outbound | Inbound |
|---|---|---|
| To / From the North on Hurontario Street | 5% | 5% |
| To / From the South on Highway 410 | 30% | 30% |
| To / From the East on Highway 413 | 10% | 10% |
| To / From the West on Highway 413 | 15% | 15% |
| To / From the North on Bramalea / Torbram / Dixie Road | 5% | 5% |
| To / From the South on Bramalea / Torbram / Dixie Road | 35% | 35% |
| **Total** | **100%** | **100%** |

Notes:
1. Based on TTS Zones 3010, 3012, 2014 & 3442

## 5.3 Site Traffic Volumes

New site traffic generated by the community has been assigned to the proposed structure plan road network and the existing road network based upon the directional distribution summarized above. New site traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 10**.

## 5.4 Future Total Traffic Volumes

Future total traffic volumes, which reflect the addition of TMP volumes and new site traffic volumes are illustrated in **Figure 11**.

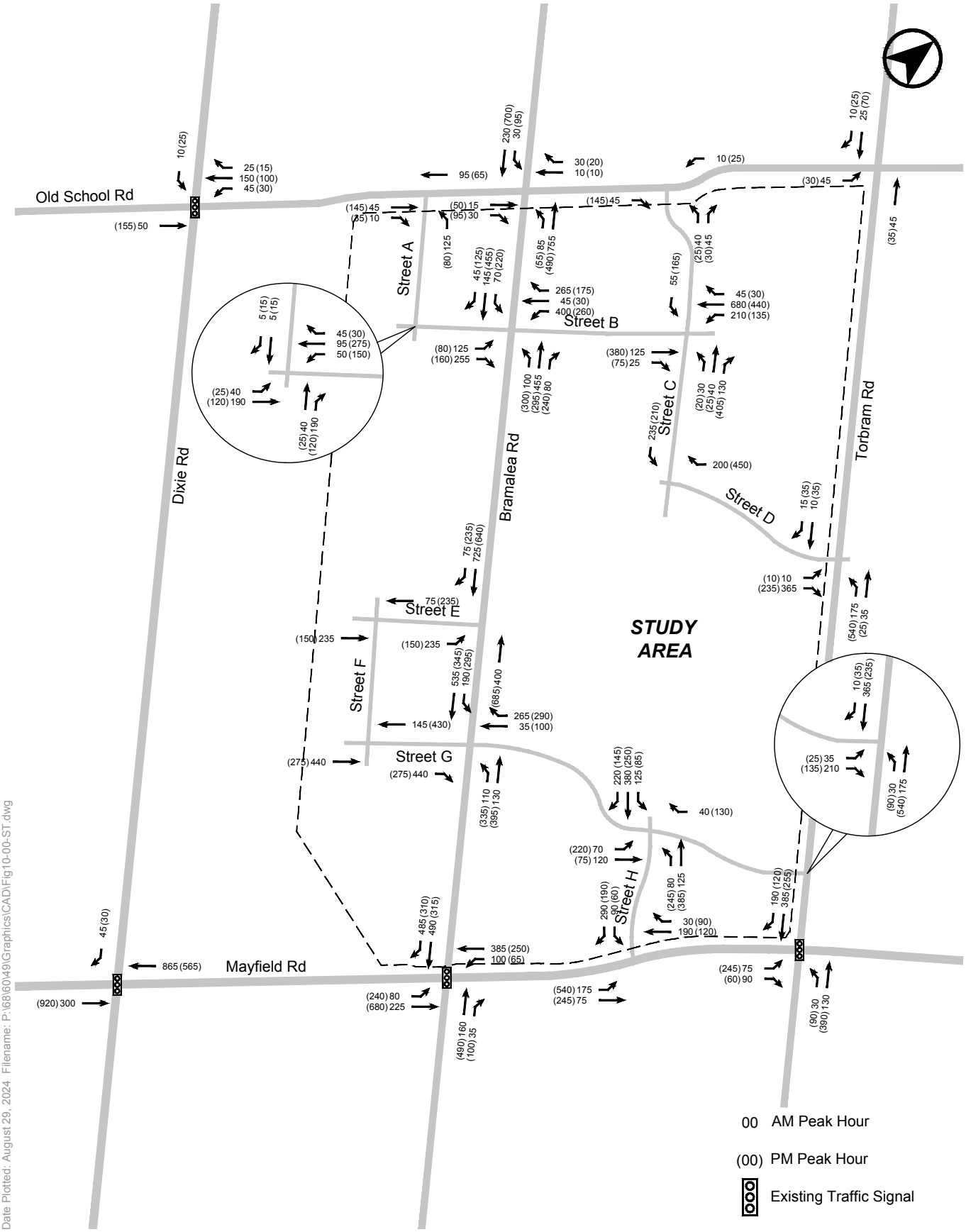



**FIGURE 10 SITE TRAFFIC VOLUMES**

# APPENDIX J:

## Warrants Assessment Reports

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2028 FB | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Torbram Road | **Direction** | North/South |
| **Minor Street** | Old School Road | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 1 |
| **T-Intersection?** | No | **Intersection Type** | Existing |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Torbram Road | | | | | | Minor: Old School Road | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 13 | 112 | 17 | 4 | 342 | 26 | 49 | 243 | 57 | 35 | 87 | 2 | 0 |
| PM | 40 | 326 | 65 | 1 | 174 | 82 | 44 | 195 | 17 | 25 | 339 | 3 | 0 |
| AHV | 13 | 110 | 21 | 1 | 129 | 27 | 23 | 110 | 19 | 15 | 107 | 1 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 576 | 120.0% | 120.0% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 120 | 170 | 120 | 170 | 275 | 229.2% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 301 | 62.7% | 62.7% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 148 | 296.0% | |
| Applicable Threshold | | **X** | | | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 120.0%
Percentage Required to be Justified: 120%

**Signal Justification 7 Met:** [X] **Yes** [ ] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2033 FB | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Torbram Road | **Direction** | North/South |
| **Minor Street** | Old School Road | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 2+ |
| **T-Intersection?** | No | **Intersection Type** | Existing |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Torbram Road | | | | | | Minor: Old School Road | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 13 | 119 | 17 | 4 | 370 | 26 | 49 | 265 | 57 | 35 | 95 | 2 | 0 |
| PM | 40 | 354 | 65 | 1 | 185 | 82 | 44 | 214 | 17 | 25 | 373 | 3 | 0 |
| AHV | 13 | 118 | 21 | 1 | 139 | 27 | 23 | 120 | 19 | 15 | 117 | 1 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 614 | 102.3% | 102.3% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 120 | 170 | 120 | 170 | 295 | 245.8% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 319 | 53.2% | 53.2% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 158 | 316.0% | |
| Applicable Threshold | | | | X | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 102.3%
Percentage Required to be Justified: 120%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2038 FB | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Torbram Road | **Direction** | North/South |
| **Minor Street** | Old School Road | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 2+ |
| **T-Intersection?** | No | **Intersection Type** | Existing |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Torbram Road | | | | | | Minor: Old School Road | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 13 | 127 | 17 | 4 | 404 | 26 | 49 | 292 | 57 | 35 | 105 | 2 | 0 |
| PM | 40 | 385 | 65 | 1 | 197 | 82 | 44 | 234 | 17 | 25 | 410 | 3 | 0 |
| AHV | 13 | 128 | 21 | 1 | 150 | 27 | 23 | 132 | 19 | 15 | 129 | 1 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 659 | 109.8% | 109.8% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 120 | 170 | 120 | 170 | 319 | 265.8% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 340 | 56.7% | 56.7% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 170 | 340.0% | |
| Applicable Threshold | | | | X | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 109.8%
Percentage Required to be Justified: 120%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2028 FB | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Airport Road | **Direction** | North/South |
| **Minor Street** | Perdue Court/Davis Lane | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 2+ |
| **T-Intersection?** | No | **Intersection Type** | Existing |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Airport Road | | | | | | Minor: Perdue Court/Davis Lane | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 70 | 484 | 32 | 4 | 759 | 3 | 2 | 0 | 28 | 21 | 0 | 3 | 0 |
| PM | 36 | 879 | 49 | 20 | 610 | 9 | 6 | 0 | 61 | 80 | 0 | 8 | 0 |
| AHV | 27 | 341 | 20 | 6 | 342 | 3 | 2 | 0 | 22 | 25 | 0 | 3 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 791 | 131.8% | 43.3% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 120 | 170 | 120 | 170 | 52 | 43.3% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 739 | 123.2% | 54.0% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 27 | 54.0% | |
| Applicable Threshold | | | | X | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 54.0%
Percentage Required to be Justified: 120%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2033 FB | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Airport Road | **Direction** | North/South |
| **Minor Street** | Perdue Court/Davis Lane | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 2+ |
| **T-Intersection?** | No | **Intersection Type** | New |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Airport Road | | | | | | Minor: Perdue Court/Davis Lane | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 70 | 526 | 32 | 4 | 848 | 3 | 2 | 0 | 28 | 21 | 0 | 3 | 0 |
| PM | 36 | 1019 | 49 | 20 | 657 | 9 | 6 | 0 | 61 | 80 | 0 | 8 | 0 |
| AHV | 27 | 386 | 20 | 6 | 376 | 3 | 2 | 0 | 22 | 25 | 0 | 3 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 870 | 145.0% | 43.3% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 120 | 170 | 120 | 170 | 52 | 43.3% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 818 | 136.3% | 54.0% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 27 | 54.0% | |
| Applicable Threshold | | | | X | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 54.0%
Percentage Required to be Justified: 150%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2038 FB | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Airport Road | **Direction** | North/South |
| **Minor Street** | Perdue Court/Davis Lane | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 2+ |
| **T-Intersection?** | No | **Intersection Type** | New |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Airport Road | | | | | | Minor: Perdue Court/Davis Lane | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 70 | 535 | 32 | 4 | 865 | 3 | 2 | 0 | 28 | 21 | 0 | 3 | 0 |
| PM | 36 | 1037 | 49 | 20 | 669 | 9 | 6 | 0 | 61 | 80 | 0 | 8 | 0 |
| AHV | 27 | 393 | 20 | 6 | 384 | 3 | 2 | 0 | 22 | 25 | 0 | 3 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 885 | 147.5% | 43.3% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 120 | 170 | 120 | 170 | 52 | 43.3% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 833 | 138.8% | 54.0% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 27 | 54.0% | |
| Applicable Threshold | | | | X | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 54.0%
Percentage Required to be Justified: 150%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2028 FT | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Airport Road | **Direction** | North/South |
| **Minor Street** | Full Moves Access | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 1 |
| **T-Intersection?** | Yes | **Intersection Type** | New |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Airport Road | | | | | | Minor: Full Moves Access | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 43 | 340 | 0 | 0 | 776 | 2 | 10 | 0 | 7 | 0 | 0 | 0 | 0 |
| PM | 22 | 898 | 0 | 0 | 542 | 1 | 37 | 0 | 11 | 0 | 0 | 0 | 0 |
| AHV | 16 | 310 | 0 | 0 | 330 | 1 | 12 | 0 | 5 | 0 | 0 | 0 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 674 | 140.4% | 9.4% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 180 | 255 | 180 | 255 | 17 | 9.4% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 657 | 136.9% | 24.0% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 12 | 24.0% | |
| Applicable Threshold | | **X** | | | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 24.0%
Percentage Required to be Justified: 150%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | 0 Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2033 FT | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Airport Road | **Direction** | North/South |
| **Minor Street** | Full Moves Access | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 1 |
| **T-Intersection?** | Yes | **Intersection Type** | New |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Airport Road | | | | | | Minor: Full Moves Access | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 31 | 378 | 0 | 0 | 870 | 6 | 17 | 0 | 3 | 0 | 0 | 0 | 0 |
| PM | 13 | 1034 | 0 | 0 | 586 | 8 | 51 | 0 | 4 | 0 | 0 | 0 | 0 |
| AHV | 11 | 353 | 0 | 0 | 364 | 4 | 17 | 0 | 2 | 0 | 0 | 0 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 751 | 156.5% | 10.6% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 180 | 255 | 180 | 255 | 19 | 10.6% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 732 | 152.5% | 34.0% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 17 | 34.0% | |
| Applicable Threshold | | **X** | | | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 34.0%
Percentage Required to be Justified: 150%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

CROZIER

# TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
## PER OTM BOOK 12

### Project and Scenario Summary

| | | | |
|---|---|---|---|
| **Project** | Broccolini Airport Road | **Project Number** | 2278-7228 |
| | | **Date** | 2025-11-06 |
| **Horizon** | 2038 FT | **Analyst** | MY |

### Study Intersection Summary

| | | | |
|---|---|---|---|
| **Major Street** | Airport Road | **Direction** | North/South |
| **Minor Street** | Full Moves Access | **Direction** | East/West |

### Intersection Details for Warrant Parameters

| | | | |
|---|---|---|---|
| **Flow Conditions** | Free Flow (Rural) | **Number of Lanes** | 1 |
| **T-Intersection?** | Yes | **Intersection Type** | New |

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

### Input Volumes and Average Hourly Volume Determination

| Peak Hour | Major: Airport Road | | | | | | Minor: Full Moves Access | | | | | | Pedestrians Crossing Major Street |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NBL | NBT | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR | |
| AM | 31 | 386 | 0 | 0 | 886 | 6 | 17 | 0 | 3 | 0 | 0 | 0 | 0 |
| PM | 13 | 1051 | 0 | 0 | 597 | 8 | 51 | 0 | 4 | 0 | 0 | 0 | 0 |
| AHV | 11 | 359 | 0 | 0 | 371 | 4 | 17 | 0 | 2 | 0 | 0 | 0 | 0 |

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

### Justification 7 - OTM Book 12

| JUSTIFICATION | DESCRIPTION | MINIMUM REQUIREMENT 1 LANE HIGHWAYS | | MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS | | COMPLIANCE | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Sectional | | Entire Percentage |
| | | Free Flow | Restricted Flow | Free Flow | Restricted Flow | Numerical | Percentage | |
| 1. Minimum Vehicular Volume | A. Vehicle Volume, All Approaches (Avg. Hour) | 480 | 720 | 600 | 900 | 764 | 159.2% | 10.6% |
| | B. Vehicle Volume, Along Minor Streets (Avg. Hour) | 180 | 255 | 180 | 255 | 19 | 10.6% | |
| 2. Delay to Cross Traffic | A. Vehicle Volume, Major Street (Avg. Hour) | 480 | 720 | 600 | 900 | 745 | 155.2% | 34.0% |
| | B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour) | 50 | 75 | 50 | 75 | 17 | 34.0% | |
| Applicable Threshold | | **X** | | | | | | |

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 34.0%
Percentage Required to be Justified: 150%

**Signal Justification 7 Met:** [ ] **Yes** [X] **No**

# APPENDIX K:

## Institute of Transportation Engineers' Trip Generation Manual Excerpts

# Land Use: 150
# Warehousing

## Description

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.

## Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas.

## Source Numbers

184, 331, 406, 411, 443, 579, 583, 596, 598, 611, 619, 642, 752, 869, 875, 876, 914, 940, 1050

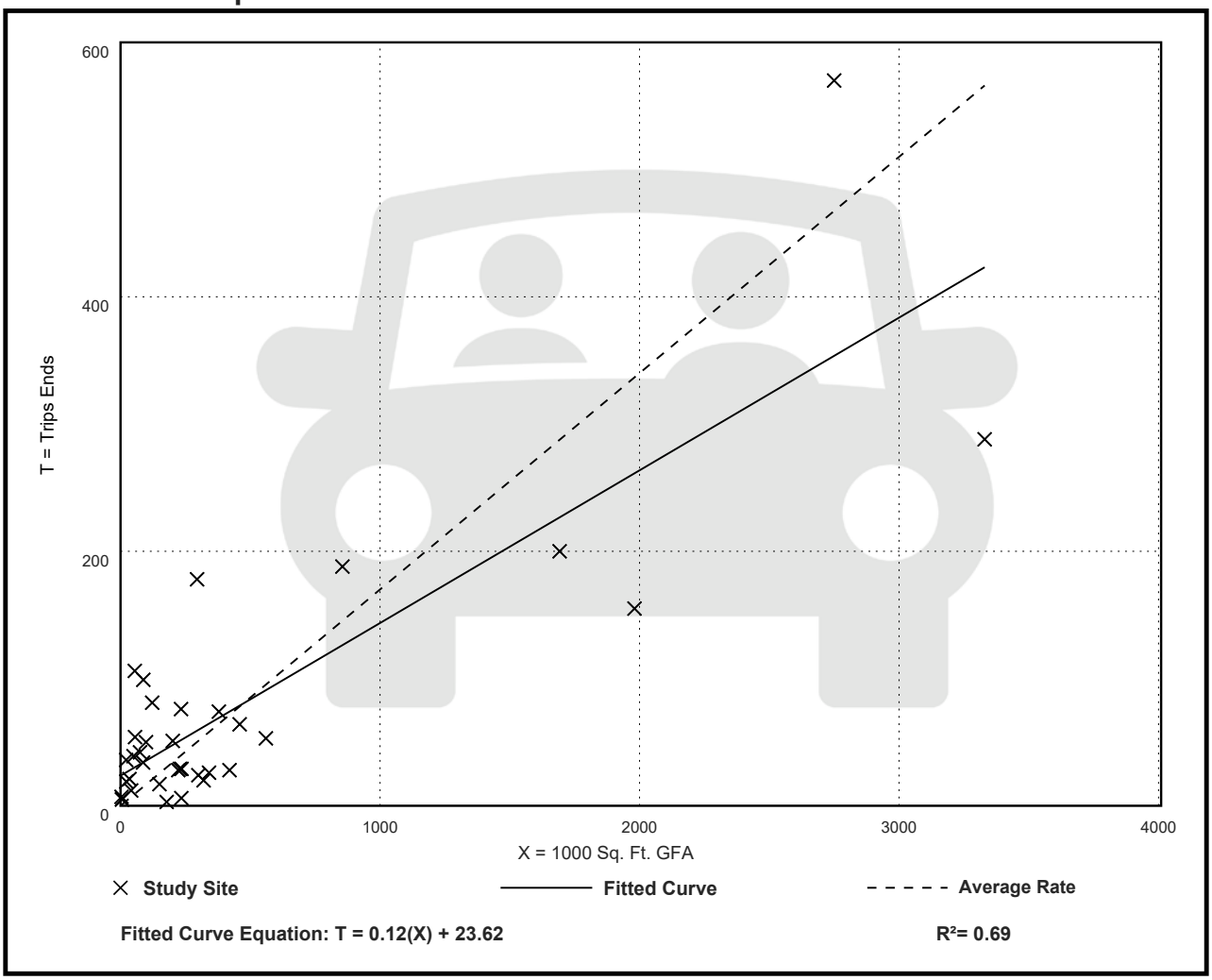
# Warehousing
# (150)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 7 and 9 a.m.**
**Setting/Location: General Urban/Suburban**
Number of Studies: 36
Avg. 1000 Sq. Ft. GFA: 448
Directional Distribution: 77% entering, 23% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.17 | 0.02 - 1.93 | 0.19 |

## Data Plot and Equation




**Fitted Curve Equation: T = 0.12(X) + 23.62**

**$R^2$= 0.69**

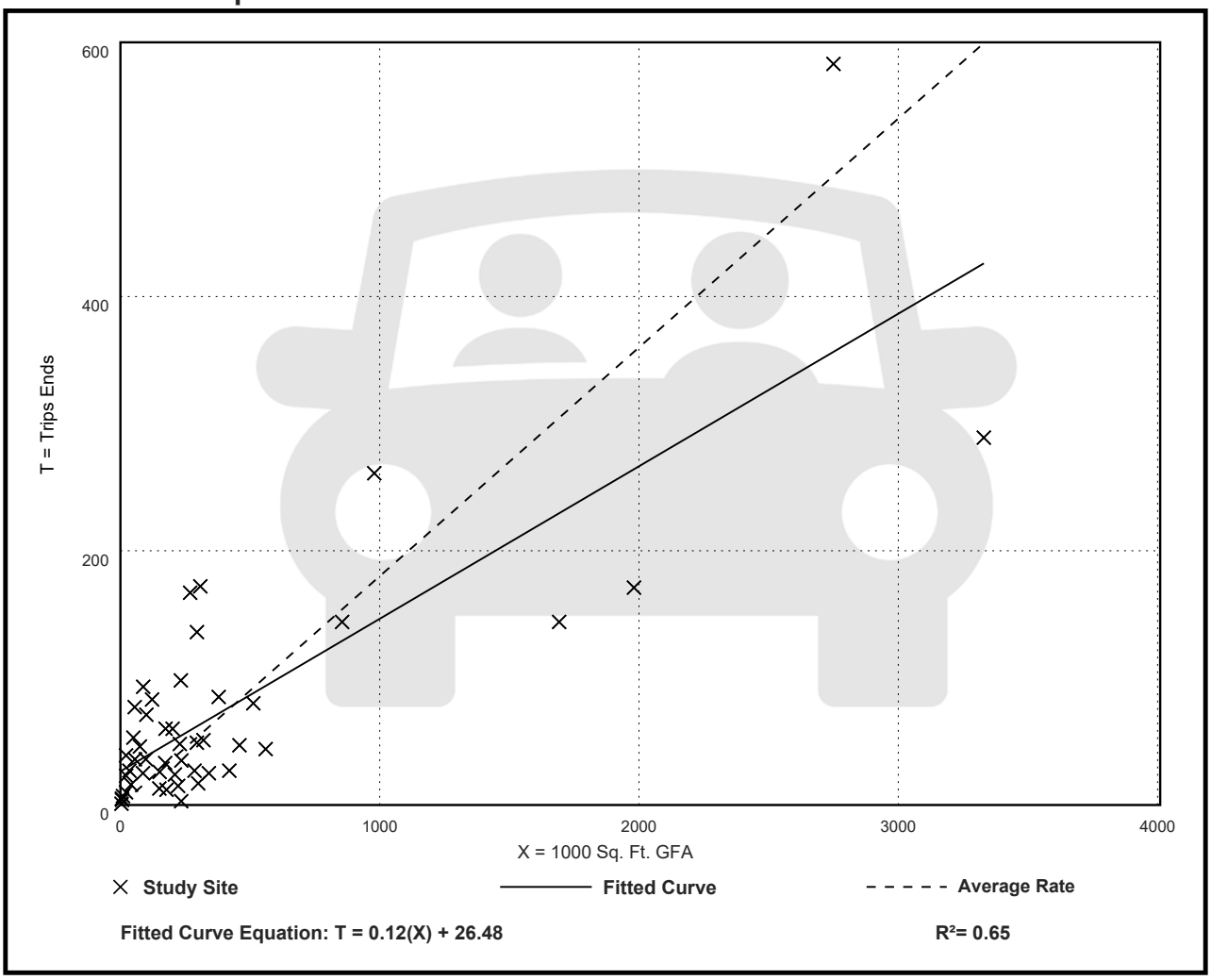
# Warehousing
# (150)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location: General Urban/Suburban**
Number of Studies: 49
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 28% entering, 72% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.18 | 0.01 - 1.80 | 0.18 |

## Data Plot and Equation



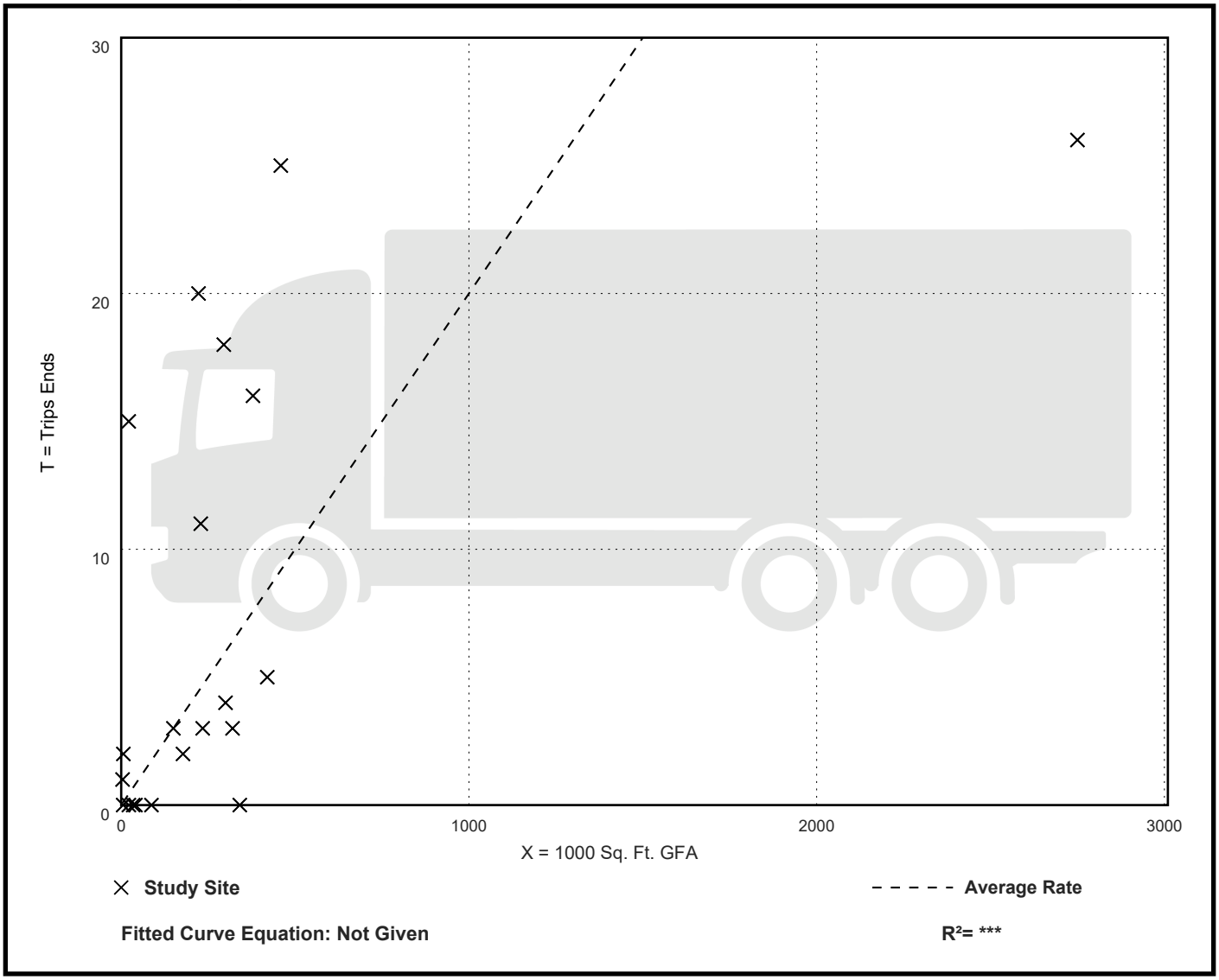
# Warehousing
# (150)

**Truck Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 7 and 9 a.m.**
**Setting/Location: General Urban/Suburban**
Number of Studies: 21
Avg. 1000 Sq. Ft. GFA: 309
Directional Distribution: 52% entering, 48% exiting

## Truck Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.02 | 0.00 - 0.69 | 0.05 |

## Data Plot and Equation



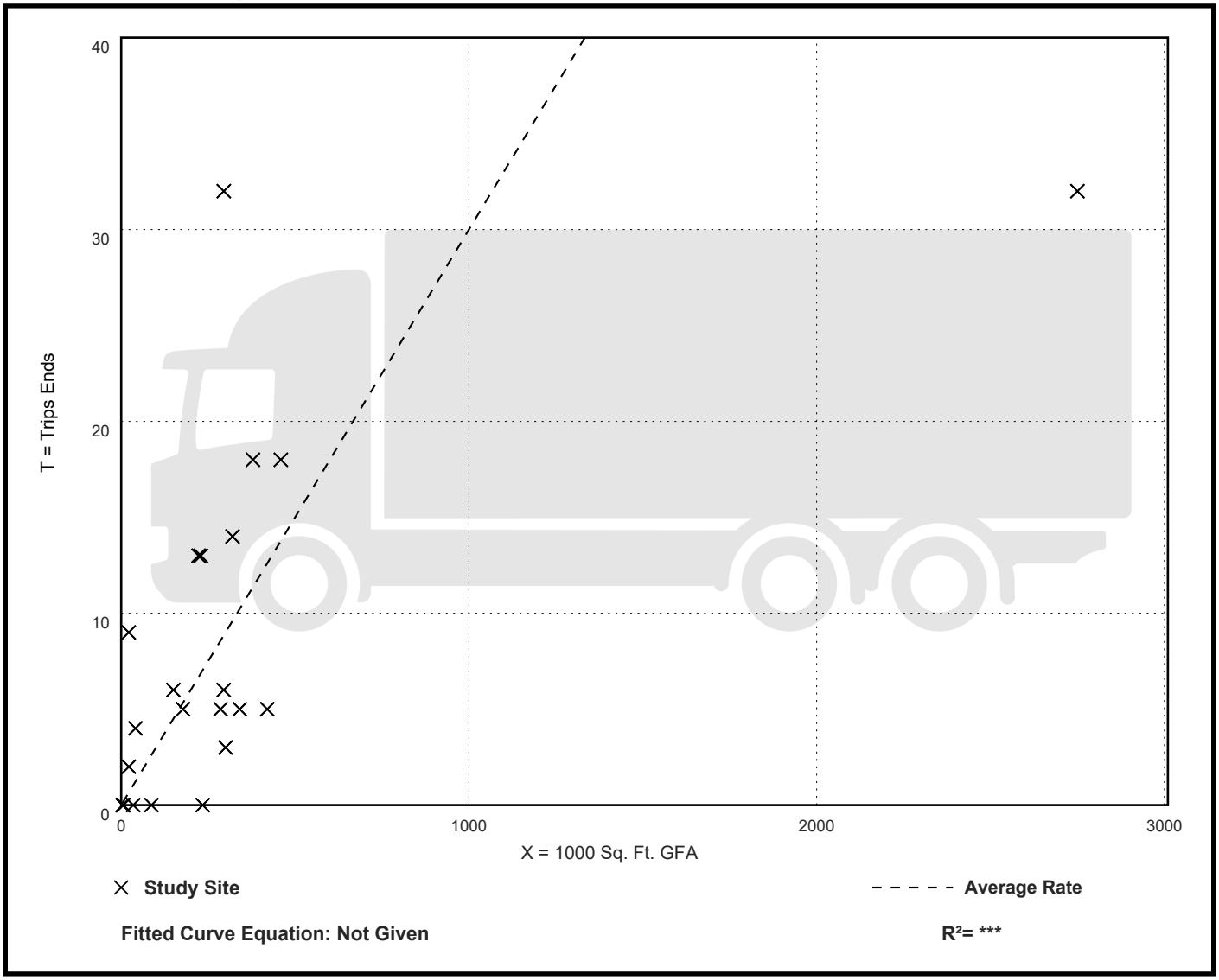
# Warehousing
# (150)

**Truck Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location: General Urban/Suburban**
Number of Studies: 23
Avg. 1000 Sq. Ft. GFA: 308
Directional Distribution: 52% entering, 48% exiting

## Truck Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.03 | 0.00 - 0.42 | 0.03 |

## Data Plot and Equation





# Trip Generation Handbook
# 3rd Edition

SEPTEMBER 2017

INSTITUTE OF TRANSPORTATION ENGINEERS

### *5.5.2 Baseline Site Mode Shares and Vehicle Occupancy*

Baseline person trips are calculated by

- First, converting ITE **baseline vehicle trip generation** estimates to **vehicle person trips** using the baseline vehicle occupancy for the specific land use code (or the same general land use category), and
- Second, converting **vehicle person trips** to **person trips by mode** through the use of applicable baseline mode shares.

Baseline vehicle trip generation can be estimated from data provided in *Trip Generation Manual*. Procedures for making those estimates are described in Chapters 3 and 4. Little information is provided regarding baseline vehicle occupancy or mode shares.

For this *Handbook*, a limited amount of weekday commuter peak period (7:00–9:00 a.m., 4:00–6:00 p.m.) mode share and vehicle occupancy data were collected for baseline sites to provide a general starting point for some of the more common land use types. Baseline data were collected at apartments, motels, offices, shopping centers, restaurants, a bank, and a bowling alley.[5] These baseline mode share and vehicle occupancy data are presented in Appendix B.

There are not enough samples in the Appendix B data to derive precise percentages by mode for the land use types for which data were collected. However, in almost all cases, the percentage of total person trips in vehicles exceeds 95 percent. In some cases the averages by land use are 100 percent motor vehicle. Based on the limited data shown, the analyst can reasonably conclude the following with regard to baseline mode shares:

- The percentage mode share of person trips made by vehicle (personal passenger vehicle plus truck) for most baseline sites is 95 percent or more.
- The majority of non-vehicle trips are by walking.
- From the limited number of samples with more than 100 observations, it appears there may be only very small directional differences in total vehicle share percentages for some land uses. Smaller samples contain slightly larger variations. Those could be real or could be just statistical data noise from smaller samples.
- Percentages of person trips in vehicles are only available in this data set for a few land uses. The findings may or may not be transferrable to other land uses. It is not suggested at this time to assume the same results for other land uses. However, it may be reasonable to assume similar results for land uses within the same land use category (such as residential, lodging, or general retail).

If the analyst assumes a mode share of 95 percent of person trips are in vehicles, then the ITE vehicle trip generation rates/equations (when converted to person trips) represent 95 percent of the total person trips (both drivers and passengers). The other 5 percent are walk, bicycle, and transit trips.

[5] The land use types were selected so the data would be transferrable to similar land uses. For example, residential apartment mode shares should be applicable to all suburban baseline apartment classifications.

# APPENDIX L:

## Transportation Tomorrow Survey Data

Fri Feb 14 2025 14:31:20 GMT-0500 (Eastern Standard Time) - Run Time: 3162ms

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of origin - pd_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Trip Purpose of Destination - purp_dest In W,

and

2006 GTA zone of destination - gta06_dest In 3014,3015,3440,3441

and

Start time of trip - start_time In 0630-0930

Trip 2022

Table:

,3014,3015,3440

Newmarket,14,0,0

Aurora,9,0,0

Vaughan,0,37,0

Caledon,146,104,29

Brampton,106,77,129

Mississauga,43,0,0

Halton Hills,4,0,0

Flamborough,16,0,0

Erin,10,0,0

Orangeville,0,9,0

New Tecumseth,116,0,0

Mulmur ,6,0,0

Fri Feb 14 2025 14:35:57 GMT-0500 (Eastern Standard Time) - Run Time: 3327ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig

Column: 2006 GTA zone of destination - gta06_dest

Filters:

Trip Purpose of Destination - purp_dest In W,

and

2006 GTA zone of destination - gta06_dest In 3014,3015,3440,3441

and

Start time of trip - start_time In 0630-0930

and

Planning district of origin - pd_orig In 34, 35, 36,

Trip 2022

Table:

,3014,3015,3440

3005,0,0,29

3008,33,0,0

3010,113,0,0

3198,0,104,0

3337,67,0,0

3360,5,0,0

3371,6,0,0

3373,5,0,0

3376,5,0,0

3384,0,0,106

3420,0,48,0

3434,0,26,0

3459,0,0,23

3460,0,3,0

3464,18,0,0

3716,33,0,0

3810,10,0,0

Fri Feb 14 2025 15:13:26 GMT-0500 (Eastern Standard Time) - Run Time: 3434ms

Cross Tabulation Query Form - Trip - 2022

Row: Planning district of destination - pd_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Trip Purpose of Origin - purp_orig In W,

and

2006 GTA zone of origin - gta06_orig In 3014,3015,3440,3441

and

Start time of trip - start_time In 1530-1830

Trip 2022

Table:

,3014,3015,3440,3441

PD 9 of Toronto,0,52,0,0

PD 16 of Toronto,0,6,0,0

Aurora,9,0,0,0

Vaughan,0,24,0,0

Caledon,181,52,0,0

Brampton,38,77,23,35

Mississauga,10,0,0,0

Flamborough,16,0,0,0

Orangeville,0,9,0,0

New Tecumseth,81,0,0,0

Fri Feb 14 2025 15:32:33 GMT-0500 (Eastern Standard Time) - Run Time: 3474ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of destination - gta06_dest

Column: 2006 GTA zone of origin - gta06_orig

Filters:

Trip Purpose of Origin - purp_orig In W,

and

2006 GTA zone of origin - gta06_orig In 3014,3015,3440,3441

and

Start time of trip - start_time In 1530-1830

and

Planning district of destination - pd_dest In 34, 35, 36,

Trip 2022

Table:

,3014,3015,3440,3441

3008,33,0,0,0

3010,113,0,0,0

3107,35,0,0,0

3198,0,52,0,0

3373,5,0,0,0

3375,0,26,0,0

3376,5,0,0,0

3377,0,0,23,0

3417,0,3,0,0

3420,0,48,0,0

3440,6,0,0,0

3462,4,0,0,0

3464,18,0,0,0

3468,0,0,0,35

3810,10,0,0,0

# APPENDIX M:

## Site Access Review Excerpts

Section 9.14 of TAC

| Intersection | Movement | Peak Hour | Cycle Length | Max Volumes | Cycles/Hour | Vehicles/Cycle |
|---|---|---|---|---|---|---|
| Airport Road & Full Moves Access | SBR | A.M. | 120 | 27 | 30.00 | 0.90 |
| | | P.M. | 120 | 8 | 30.00 | 0.27 |

Section 6.2 of MTO

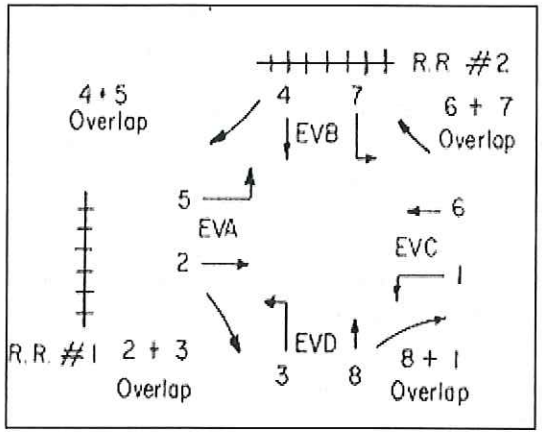
| Intersection | Movement | Peak Hour | Cycle Length | Max Volumes | Cycles/Hour | Vehicles/Cycle |
|---|---|---|---|---|---|---|
| Airport Road & Full Moves Access | EBL | A.M. | 120 | 10 | 30.00 | 0.33 |
| | | P.M. | 120 | 37 | 30.00 | 1.23 |
| | NBL | A.M. | 120 | 43 | 30.00 | 1.43 |
| | | P.M. | 120 | 22 | 30.00 | 0.73 |

| Storage | Rounded Storage |
|---|---|
| 10.80 | 15 |
| 3.20 | 5 |

| 95% Vehicles | Storage | Rounded Storage |
|---|---|---|
| 2 | 15.00 | 15 |
| 3 | 22.50 | 25 |
| 4 | 30.00 | 30 |
| 2 | 15.00 | 15 |

Ontario

# Traffic Signal Operating & Timing Policy




Faze 2 must be Eastbound or Northbound

**POLICY NUMBER: 2010-02** **Effective Date: June 1, 2016**

***Approved by: Sheri Graham, Manager***

Manager's Signature Date 2016/06/01


**Traffic Office**
Engineering Standards Branch
Ministry of Transportation
301 St. Paul Street, 2nd Floor
St. Catharines, ON L2R 7R4

General Inquiries: (905) 704-2940
Fax: (905) 704-2888

## Table1. Vehicle Arrival Rates and Green Plus Amber Times for Rural Intersections

| LEVEL OF SERVICE | | | | | "X" | GREEN* plus |
|---|---|---|---|---|---|---|
| A ( 95 %) | B ( 90 %) | C ( 75 %) | D ( 60 %) | E ( 50 %) | VEHICLES | AMBER (SEC) |
| 0.0 – 0.3 | 0.2 – 0.5 | 0.3 – 0.9 | 0.5 – 1.3 | 0.7 – 1.6 | 1 | 3.8 |
| 0.4 – 0.8 | 0.6 – 1.1 | 1.0 – 1.7 | 1.4 – 2.2 | 1.7 – 2.6 | 2 | 7.0 |
| 0.9 – 1.3 | 1.2 – 1.7 | 1.8 – 2.5 | 2.3 – 3.1 | 2.7 – 3.6 | 3 | 9.7 |
| 1.4 – 1.9 | 1.8 – 2.4 | 2.6 – 3.3 | 3.2 – 4.0 | 3.7 – 4.6 | 4 | 12.0 |
| 2.0 – 2.8 | 2.5 – 3.1 | 3.4 – 4.2 | 4.1 – 5.0 | 4.7 – 5.6 | 5 | 14.2 |
| 2.9 – 3.2 | 3.2 – 3.8 | 4.3 – 5.0 | 5.1 – 6.0 | 5.7 – 6.6 | 6 | 16.4 |
| 3.3 – 3.9 | 3.9 – 4.6 | 5.1 – 5.9 | 6.1 – 6.9 | 6.7 – 7.6 | 7 | 18.6 |
| 4.0 – 4.6 | 4.7 – 5.4 | 6.0 – 6.8 | 7.0 – 7.9 | 7.7 – 8.6 | 8 | 20.8 |
| 4.7 – 5.4 | 5.5 – 6.2 | 6.9 – 7.7 | 8.0 – 8.8 | 8.7 – 9.6 | 9 | 23.0 |
| 5.5 – 6.1 | 6.3 – 7.0 | 7.8 – 8.6 | 8.9 – 9.8 | 9.7 – 10.6 | 10 | 25.1 |
| 6.2 – 6.9 | 7.1 – 7.8 | 8.7 – 9.5 | 9.9 – 10.8 | 10.7 – 11.6 | 11 | 27.2 |
| 7.0 – 7.7 | 7.9 – 8.6 | 9.6 – 10.4 | 10.9 – 11.7 | 11.7 – 12.6 | 12 | 29.3 |
| 7.8 – 8.4 | 8.7 – 9.4 | 10.5 – 11.3 | 11.8 – 12.7 | 12.7 – 13.6 | 13 | 31.4 |
| 8.5 – 9.2 | 9.5 – 10.3 | 11.4 – 12.2 | 12.8 – 13.7 | 13.7 – 14.6 | 14 | 33.5 |
| 9.3 – 10.0 | 10.4 – 11.1 | 12.3 – 13.1 | 13.8 – 14.6 | 14.7 – 15.6 | 15 | 35.6 |
| 10.1 – 10.8 | 11.2 – 11.9 | 13.2 – 14.0 | 14.7 – 15.6 | 15.7 – 16.6 | 16 | 37.7 |
| 10.9 – 11.6 | 12.0 – 12.8 | 14.1 – 14.9 | 15.7 – 16.6 | 16.7 – 17.6 | 17 | 39.8 |
| 11.7 – 12.4 | 12.9 – 13.6 | 15.0 – 15.9 | 16.7 – 17.6 | 17.7 – 18.6 | 18 | 41.9 |
| 12.5 – 13.2 | 13.7 – 14.5 | 16.0 – 16.9 | 17.7 – 18.5 | 18.7 – 19.6 | 19 | 44.0 |
| 13.3 – 14.0 | 14.6 – 15.3 | 17.0 – 17.8 | 18.6 – 19.5 | 19.7 – 20.6 | 20 | 46.0 |
| 14.1 – 14.9 | 15.4 – 16.2 | 17.9 – 18.7 | 19.6 – 20.5 | 20.7 – 21.6 | 21 | 48.0 |
| 15.0 – 15.7 | 16.3 – 17.0 | 18.8 – 19.6 | 20.6 – 21.5 | 21.7 – 22.6 | 22 | 50.0 |
| 15.8 – 16.5 | 17.1 – 17.9 | 19.7 – 20.5 | 21.6 – 22.4 | 22.7 – 23.6 | 23 | 52.0 |
| 16.6 – 17.4 | 18.0 – 18.8 | 20.6 – 21.4 | 22.5 – 23.4 | 23.7 – 24.6 | 24 | 54.0 |
| 17.5 – 18.2 | 18.9 – 19.7 | 21.5 – 22.4 | 23.5 – 24.4 | 24.7 – 25.6 | 25 | 56.0 |
| 18.3 – 19.0 | 19.8 – 20.6 | 22.5 – 23.3 | 24.5 – 25.4 | 25.7 – 26.6 | 26 | 58.0 |
| 19.1 – 19.9 | 20.7 – 21.5 | 23.4 – 24.3 | 25.5 – 26.3 | 26.7 – 27.6 | 27 | 60.0 |
| 20.0 – 20.7 | 21.6 – 22.3 | 24.4 – 25.2 | 26.4 – 27.3 | 27.7 – 28.6 | 28 | 62.0 |
| 20.8 – 21.6 | 22.4 – 23.2 | 25.3 – 26.2 | 27.4 – 28.3 | 28.7 – 29.6 | 29 | 64.0 |
| 21.7 – 22.4 | 23.3 – 24.1 | 26.3 – 27.1 | 28.4 – 29.3 | 29.7 – 30.6 | 30 | 66.0 |
| 22.5 – 23.3 | 24.2 – 25.0 | 27.2 – 28.0 | 29.4 – 30.3 | 30.7 – 31.6 | 31 | 68.0 |
| 23.4 – 24.2 | 25.1 – 25.9 | 28.1 – 29.0 | 30.4 – 31.2 | 31.7 – 32.6 | 32 | 70.0 |
| 24.3 – 25.1 | 26.0 – 26.8 | 29.1 – 29.9 | 31.3 – 32.2 | 32.7 – 33.6 | 33 | 72.0 |
| 25.2 – 25.9 | 26.9 – 27.6 | 30.0 – 30.9 | 32.3 – 33.2 | 33.7 – 34.6 | 34 | 74.0 |
| 26.0 – 26.7 | 27.7 – 28.5 | 31.0 – 31.8 | 33.3 – 34.2 | 34.7 – 35.6 | 35 | 76.0 |

* MINIMUM GREEN:

| |
|---|
| Through Phasing – 7 to 10 sec (Minor Rd.)<br>15 to 20 sec (Major Rd.) |
| Left Turn Phasing – 5 sec. |

Notes: (1) Relationship between the average and maximum arrival rates is based on the Poisson Distribution.

(2) Relationship between arrival rates and phase times is based on the Greenshield's Chart of Headways for passenger (car) vehicles.

(3) Each truck or bus is equivalent to 2.0 passenger cars.

## Table2. Vehicle Arrival Rates and Green Plus Amber Times for Urban/ Commuter Intersections

| LEVEL OF SERVICE | | | | | "X" | GREEN* plus AMBER (SEC) |
|---|---|---|---|---|---|---|
| A ( 95 %) | B ( 90 %) | C ( 75 %) | D ( 60 %) | E ( 50 %) | VEHICLES | |
| 0.0 – 0.3 | 0.2 – 0.5 | 0.3 – 0.9 | 0.5 – 1.3 | 0.7 – 1.6 | 1 | 2.6 |
| 0.4 – 0.8 | 0.6 – 1.1 | 1.0 – 1.7 | 1.4 – 2.2 | 1.7 – 2.6 | 2 | 4.9 |
| 0.9 – 1.3 | 1.2 – 1.7 | 1.8 – 2.5 | 2.3 – 3.1 | 2.7 – 3.6 | 3 | 7.0 |
| 1.4 – 1.9 | 1.8 – 2.4 | 2.6 – 3.3 | 3.2 – 4.0 | 3.7 – 4.6 | 4 | 8.9 |
| 2.0 – 2.8 | 2.5 – 3.1 | 3.4 – 4.2 | 4.1 – 5.0 | 4.7 – 5.6 | 5 | 10.8 |
| 2.9 – 3.2 | 3.2 – 3.8 | 4.3 – 5.0 | 5.1 – 6.0 | 5.7 – 6.6 | 6 | 12.7 |
| 3.3 – 3.9 | 3.9 – 4.6 | 5.1 – 5.9 | 6.1 – 6.9 | 6.7 – 7.6 | 7 | 14.6 |
| 4.0 – 4.6 | 4.7 – 5.4 | 6.0 – 6.8 | 7.0 – 7.9 | 7.7 – 8.6 | 8 | 16.5 |
| 4.7 – 5.4 | 5.5 – 6.2 | 6.9 – 7.7 | 8.0 – 8.8 | 8.7 – 9.6 | 9 | 18.4 |
| 5.5 – 6.1 | 6.3 – 7.0 | 7.8 – 8.6 | 8.9 – 9.8 | 9.7 – 10.6 | 10 | 20.2 |
| 6.2 – 6.9 | 7.1 – 7.8 | 8.7 – 9.5 | 9.9 – 10.8 | 10.7 – 11.6 | 11 | 22.0 |
| 7.0 – 7.7 | 7.9 – 8.6 | 9.6 – 10.4 | 10.9 – 11.7 | 11.7 – 12.6 | 12 | 23.8 |
| 7.8 – 8.4 | 8.7 – 9.4 | 10.5 – 11.3 | 11.8 – 12.7 | 12.7 – 13.6 | 13 | 25.6 |
| 8.5 – 9.2 | 9.5 – 10.3 | 11.4 – 12.2 | 12.8 – 13.7 | 13.7 – 14.6 | 14 | 27.4 |
| 9.3 – 10.0 | 10.4 – 11.1 | 12.3 – 13.1 | 13.8 – 14.6 | 14.7 – 15.6 | 15 | 29.2 |
| 10.1 – 10.8 | 11.2 – 11.9 | 13.2 – 14.0 | 14.7 – 15.6 | 15.7 – 16.6 | 16 | 31.0 |
| 10.9 – 11.6 | 12.0 – 12.8 | 14.1 – 14.9 | 15.7 – 16.6 | 16.7 – 17.6 | 17 | 32.8 |
| 11.7 – 12.4 | 12.9 – 13.6 | 15.0 – 15.9 | 16.7 – 17.6 | 17.7 – 18.6 | 18 | 34.6 |
| 12.5 – 13.2 | 13.7 – 14.5 | 16.0 – 16.9 | 17.7 – 18.5 | 18.7 – 19.6 | 19 | 36.4 |
| 13.3 – 14.0 | 14.6 – 15.3 | 17.0 – 17.8 | 18.6 – 19.5 | 19.7 – 20.6 | 20 | 38.2 |
| 14.1 – 14.9 | 15.4 – 16.2 | 17.9 – 18.7 | 19.6 – 20.5 | 20.7 – 21.6 | 21 | 40.0 |
| 15.0 – 15.7 | 16.3 – 17.0 | 18.8 – 19.6 | 20.6 – 21.5 | 21.7 – 22.6 | 22 | 41.8 |
| 15.8 – 16.5 | 17.1 – 17.9 | 19.7 – 20.5 | 21.6 – 22.4 | 22.7 – 23.6 | 23 | 43.7 |
| 16.6 – 17.4 | 18.0 – 18.8 | 20.6 – 21.4 | 22.5 – 23.4 | 23.7 – 24.6 | 24 | 45.6 |
| 17.5 – 18.2 | 18.9 – 19.7 | 21.5 – 22.4 | 23.5 – 24.4 | 24.7 – 25.6 | 25 | 47.5 |
| 18.3 – 19.0 | 19.8 – 20.6 | 22.5 – 23.3 | 24.5 – 25.4 | 25.7 – 26.6 | 26 | 49.4 |
| 19.1 – 19.9 | 20.7 – 21.5 | 23.4 – 24.3 | 25.5 – 26.3 | 26.7 – 27.6 | 27 | 51.3 |
| 20.0 – 20.7 | 21.6 – 22.3 | 24.4 – 25.2 | 26.4 – 27.3 | 27.7 – 28.6 | 28 | 53.2 |
| 20.8 – 21.6 | 22.4 – 23.2 | 25.3 – 26.2 | 27.4 – 28.3 | 28.7 – 29.6 | 29 | 55.1 |
| 21.7 – 22.4 | 23.3 – 24.1 | 26.3 – 27.1 | 28.4 – 29.3 | 29.7 – 30.6 | 30 | 57.0 |
| 22.5 – 23.3 | 24.2 – 25.0 | 27.2 – 28.0 | 29.4 – 30.3 | 30.7 – 31.6 | 31 | 58.9 |
| 23.4 – 24.2 | 25.1 – 25.9 | 28.1 – 29.0 | 30.4 – 31.2 | 31.7 – 32.6 | 32 | 60.8 |
| 24.3 – 25.1 | 26.0 – 26.8 | 29.1 – 29.9 | 31.3 – 32.2 | 32.7 – 33.6 | 33 | 62.7 |
| 25.2 – 25.9 | 26.9 – 27.6 | 30.0 – 30.9 | 32.3 – 33.2 | 33.7 – 34.6 | 34 | 64.6 |
| 26.0 – 26.7 | 27.7 – 28.5 | 31.0 – 31.8 | 33.3 – 34.2 | 34.7 – 35.6 | 35 | 66.5 |

* MINIMUM GREEN:

Through Phasing – 7 to 10 sec (Minor Rd.)
15 to 20 sec (Major Rd.)

Left Turn Phasing – 5 sec.

Notes: (1) Relationship between the average and maximum arrival rates is based on the Poisson Distribution.

(2) Relationship between arrival rates and phase times is based on Ministry of Transportation Time to Enter Studies (1986 to 1988).

(3) Each truck or bus is equivalent to 2.0 passenger cars.

## 6.2 Length of Left Turn Storage Lane

Though the length of the left turn lane is more a geometric design issue than a timing issue, it is covered here because it was covered in the TCSTCA.

The left turn storage lane should accommodate all left turn arrivals during a cycle. To reduce the possibility of left turn vehicles filling up the storage lane and spilling out into the *through* lane, the storage lane length is calculated to store the average arrivals 95% of the time (Level of Service 'A"). An average space of 7.5 m per passenger car is used for this purpose.

The number of vehicles that will arrive 95% of the time based on the average arrival rate per cycle is obtained from Table 1 or Table 2 under Section 3.0. This number is multiplied by 7.5m/vehicle to obtain the left turn storage lane length.

The storage lane length for various cycle times and equivalent left turn volumes together with the green time required for the protected/permissive left turn phase is plotted in Figure 1.

Example calculations for left turn lane length and required phase times are shown below:

*Given:*

*Protected/ Permissive Left Turn Advance Green Phase Operation*

$V_{Le}$ = *350 pcph*

$C$ = *90 sec*

*Determine:*

*The storage lane length and the required left turn green time*

*Solution:*

$$m = \frac{350x90}{3600}$$

= *8.8 passenger cars per cycle*

*Using Table 1 or Table 2, for an average arrival time of 8.8 passenger cars per cycle, 14 or less vehicles will arrive 95% of the time.*

*Therefore,*

*Left Turn Storage lane Length = 7.5 x 14 = 105 m*

*Left Turn Green Time = (8.8-2) x 2 = 13.6 sec*

*Similarly, using Figure 1, the left turn storage lane length is 105 metres and required left turn green time is 14 seconds.*

Ontario

# MTO DESIGN SUPPLEMENT

## FOR

## TAC GEOMETRIC DESIGN GUIDE (GDG) FOR

## CANADIAN ROADS - 2017

OCTOBER 2023

STANDARDS and CONTRACTS BRANCH
HIGHWAY DESIGN OFFICE

# MTO Design Supplement
# Appendix 9A for Section 9.17.2.1 Volume Warrants for Left-Turn Lanes
# Chapter 9 Intersections

The following additional guidance for left-turn lanes at intersections are Applicable to Section 9.17.2.1 Volume Warrants of *Chapter 9 – Intersections* of the *TAC Geometric Design Guide for Canadian Roads - June 2017:*

**Signalized Intersections**

At intersection consisting of through lanes and separate left turn lanes may require a signal control when the volume of traffic entering the intersection is such that the traffic flow allows insufficient gaps to permit all intersecting vehicles to enter, turn or cross the intersection with little delay or inconvenience. The decision to install a traffic signal must be based on a careful evaluation of the volume warrants and approved traffic guidelines (*Refer to OTM Book 12 – Traffic Signals*). The service volumes that a signalized intersection can accommodate, and the capacity are dependent on the traffic factors, intersection geometrics and signal operations. For signalized intersections the geometrical configuration of the entire intersection design should be coordinated with the appropriate signal design and traffic signal phasing consistent with the operational requirements of both present and future traffic demands. The Project Delivery office should have early liaison with the Regional Traffic office.

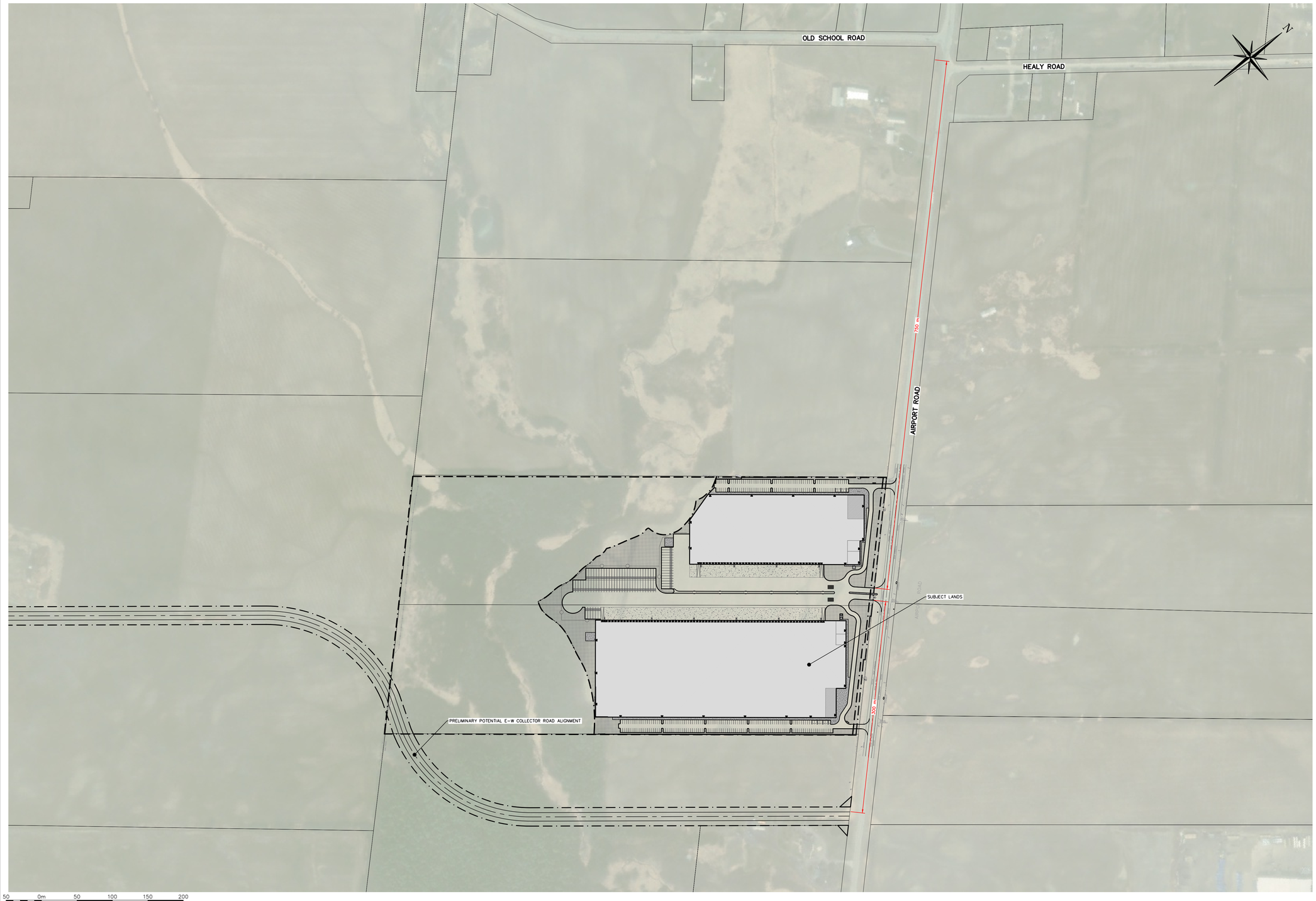
As a general guideline, left-turn lanes must be considered and installed on all highway approaches at all signalized intersections whether the left turn warrants are met or not, unless the left turn is prohibited by geometrics (T-intersection) or traffic regulations (one-way traffic).

Separate left turn lanes at signalized intersections have the advantages of increased safety, improved intersection capacity, flexibility for possible phasing schemes and clarity of purpose.

The left turn storage lane length is a function of the signal cycle length and left turn traffic volume. A left turn storage lane can function with or without separate left turn traffic signal phasing. The length of left turn storage lane should be determined by using the methodology provided in the latest *Traffic Signal and Timing Policy # 2010-02* issued by Traffic Policy Office.

# APPENDIX N:

## Proposed Access Spacing Diagrams







50 0m 50 100 150 200

SCALE: 1:2500

**NOTES:**

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
4. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
5. DO NOT SCALE DRAWINGS.

| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 0 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Engineer

Engineer

FOR REVIEW

NOT TO BE USED FOR CONSTRUCTION

Project

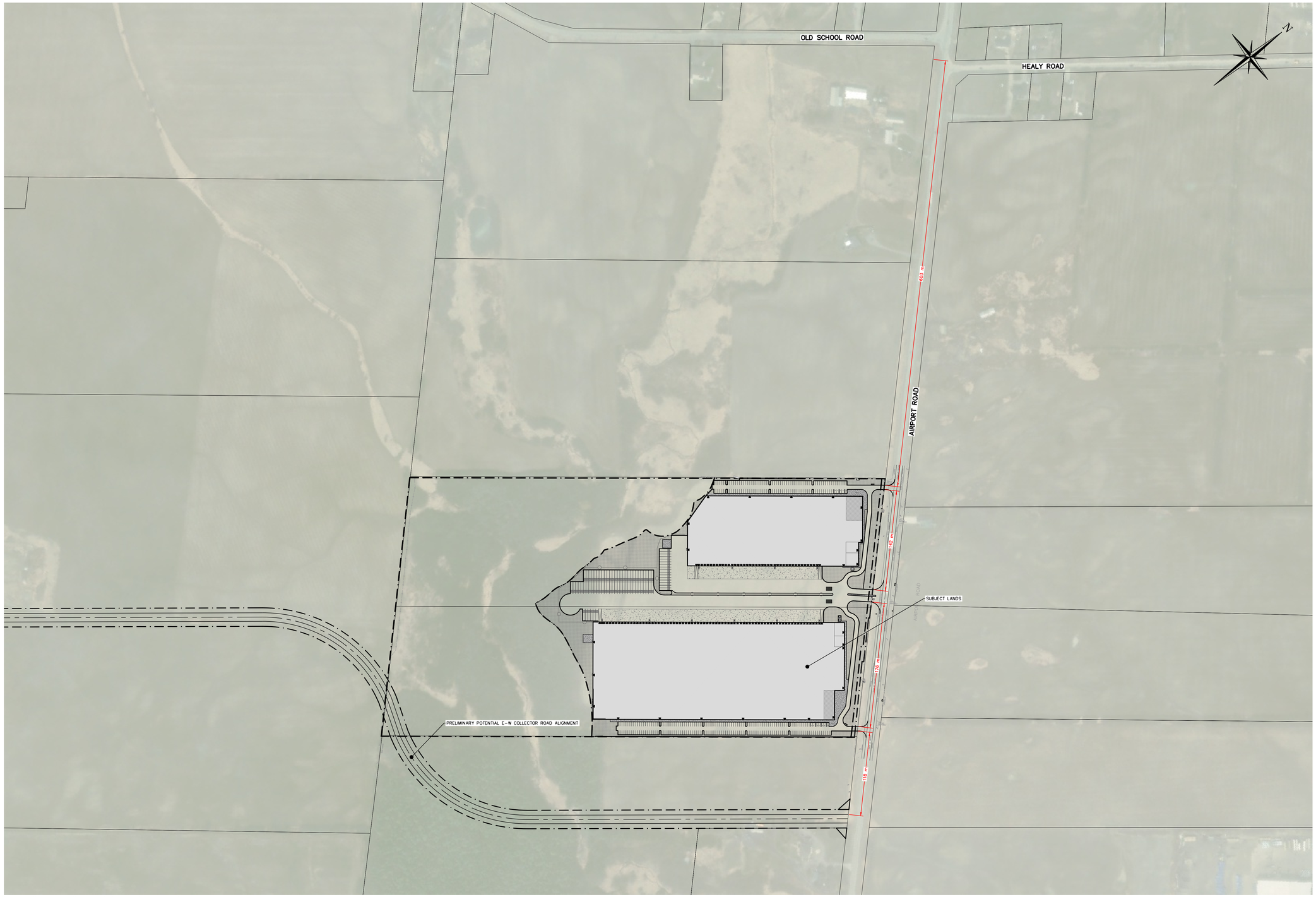
BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

Drawing

INTERSECTION SPACING – FULL MOVES ACCESS

CROZIER CONSULTING ENGINEERS

| Drawn By | Design By | Project |
|---|---|---|
| R.L. | | 2278-7228 |
| Check By | Check By | Drawing |
| M.Y. | M.L. | T200 |







**NOTES:**

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
4. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
5. DO NOT SCALE DRAWINGS.

| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 0 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Engineer

Engineer

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

Project
BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

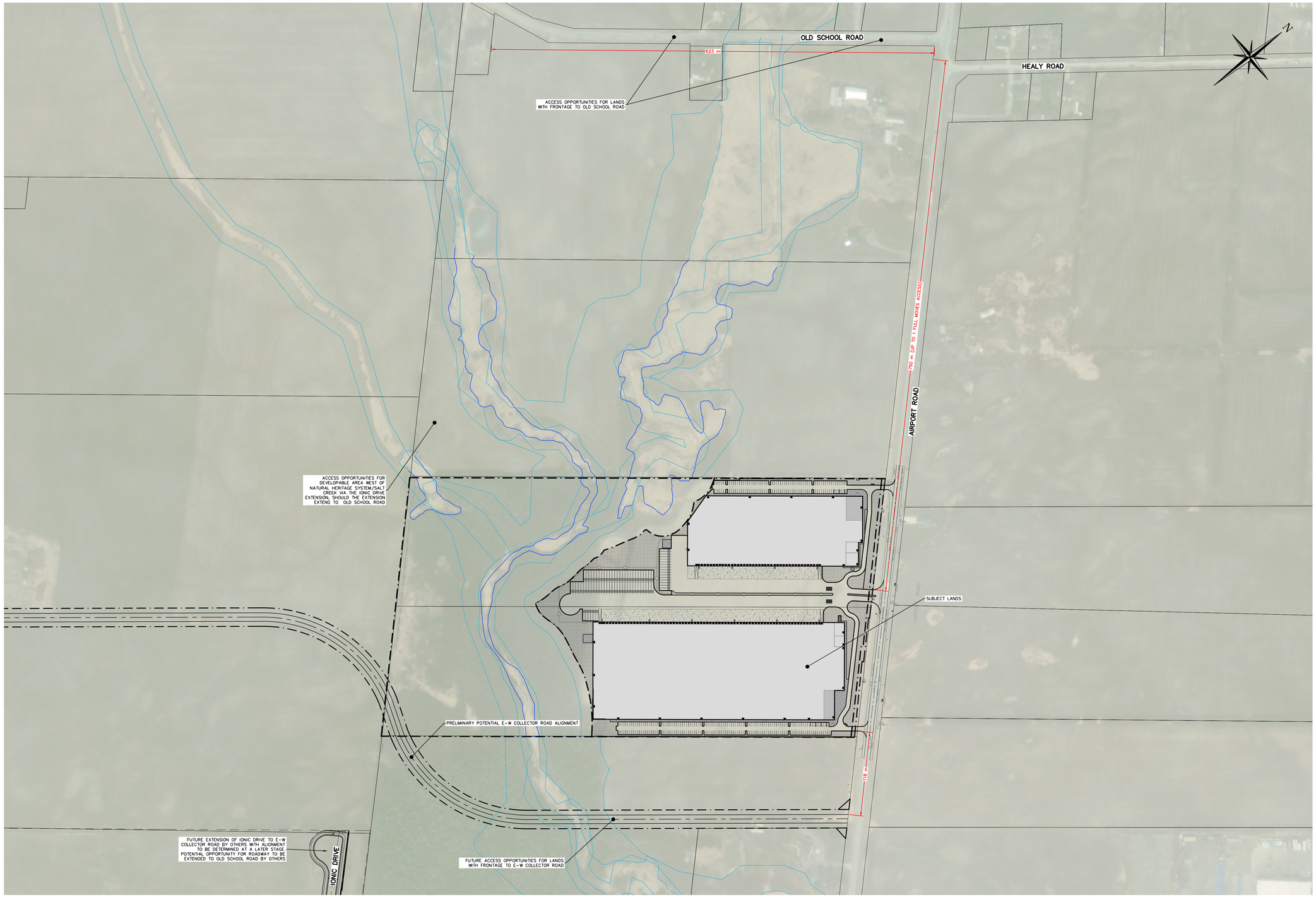
Drawing
INTERSECTION SPACING – RIGHT-IN/RIGHT-OUT ACCESSES

CROZIER
CONSULTING ENGINEERS

| Drawn By | Design By | Project |
|---|---|---|
| R.L. | | 2278-7228 |
| Check By | Check By | Drawing |
| M.Y. | M.L. | T201 |

# APPENDIX O:

## Corridor Access Management Diagram







**NOTES:**

1. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE MODIFICATION AND/OR REPRODUCTION OF ANY PART OF THIS DRAWING IS STRICTLY PROHIBITED WITHOUT WRITTEN AUTHORIZATION FROM THIS OFFICE.
2. THE DIGITAL FILES CONTAIN INTELLECTUAL AND DIGITAL DATA PROPERTY THAT IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO C.F. CROZIER & ASSOCIATES INC. PRIOR TO CONSTRUCTION.
4. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
5. DO NOT SCALE DRAWINGS.

| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 0 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Engineer

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project
BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

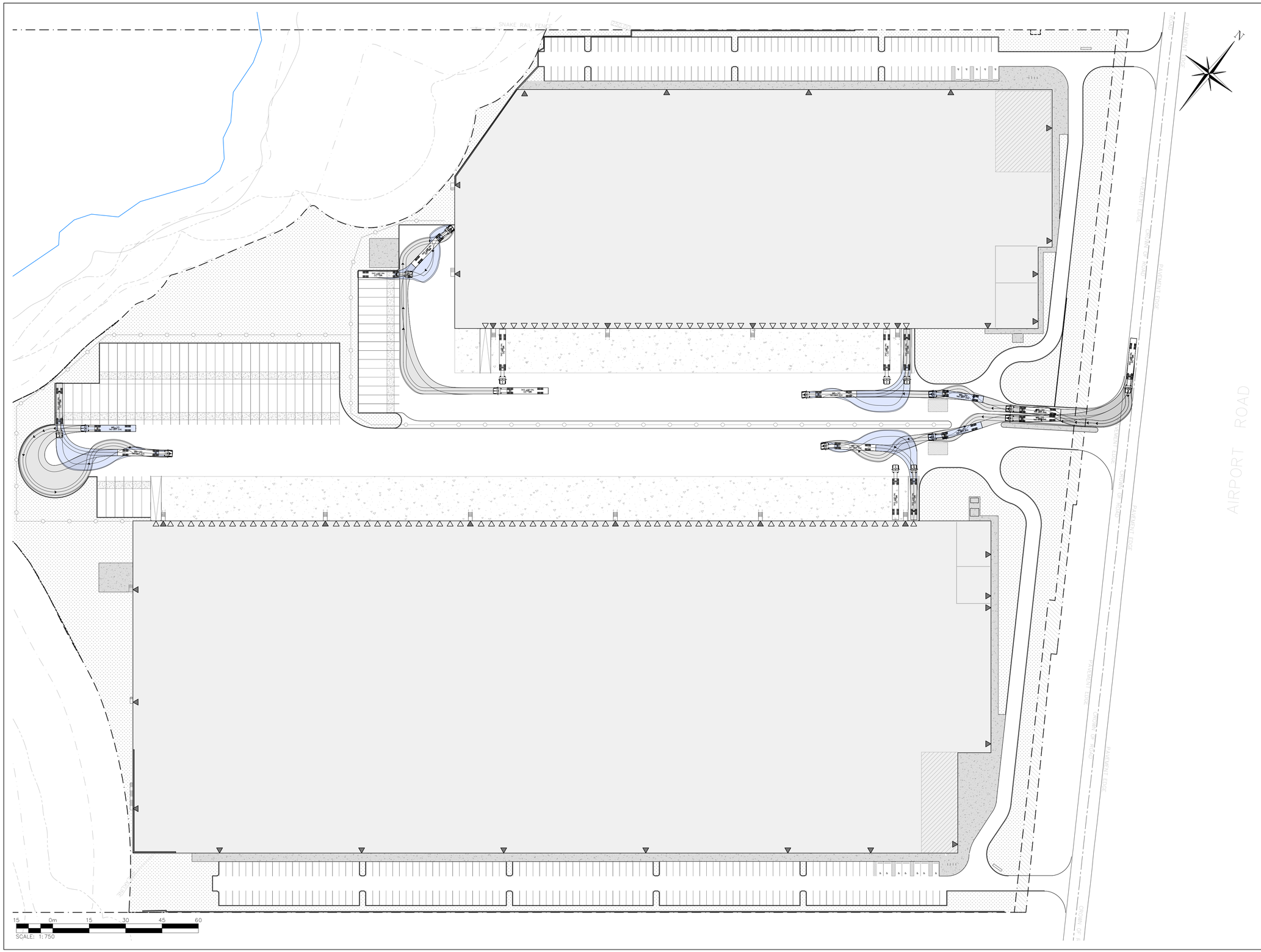
Drawing
CORRIDOR ACCESS MANAGEMENT DIAGRAM

CROZIER
CONSULTING ENGINEERS

| Drawn By | Design By | Project |
|---|---|---|
| R.L. | | 2278-7228 |
| Check By | Check By | Drawing |
| M.Y. | M.L. | T202 |

# APPENDIX P:

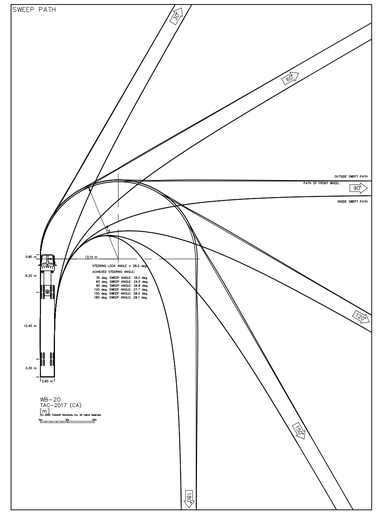
## Vehicle Turning Diagrams

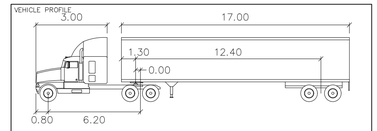






FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION




WB-20

meters

| | | | |
|---|---|---|---|
| Tractor Width | : 2.60 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.60 | Steering Angle | : 28.2 |
| Tractor Track | : 2.60 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.60 | | |

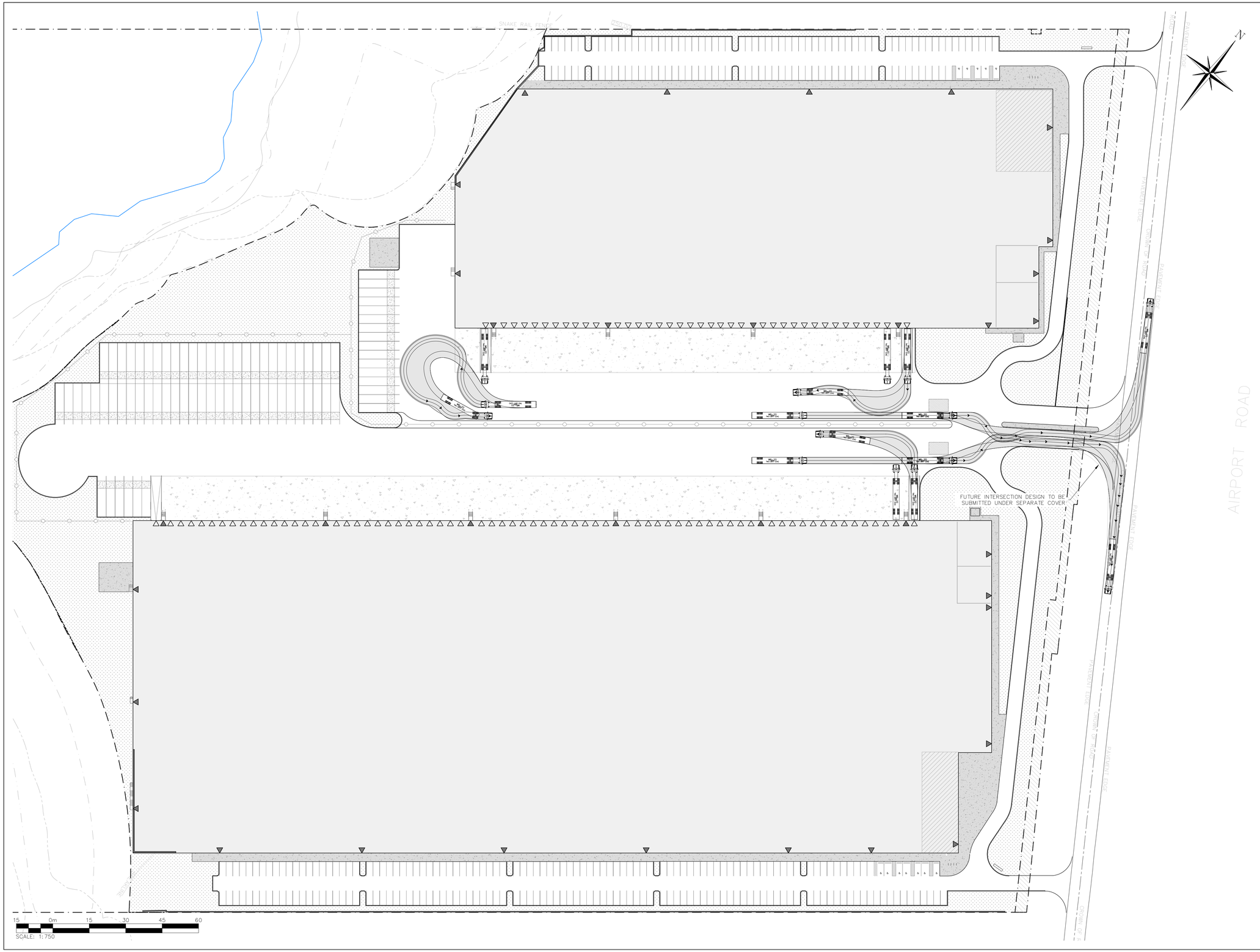
| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 1 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Project
BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

Drawing
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

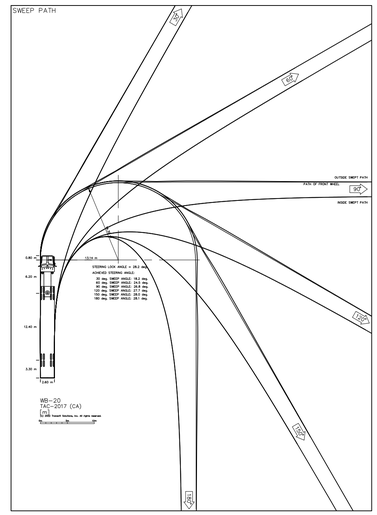
| | | | | | |
|---|---|---|---|---|---|
| Drawn By | R.L. | Design By | | Project | 2278-7228 |
| Check By | M.Y. | Check By | M.L. | Drawing | T300 |

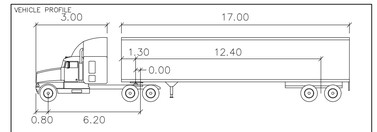






FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION




WB-20

meters

| | | | |
|---|---|---|---|
| Tractor Width | : 2.60 | Lock to Lock Time | : 6.0 |
| Trailer Width | : 2.60 | Steering Angle | : 28.2 |
| Tractor Track | : 2.60 | Articulating Angle | : 70.0 |
| Trailer Track | : 2.60 | | |

| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 1 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Project
BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

Drawing
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

| | | | | | |
|---|---|---|---|---|---|
| Drawn By | R.L. | Design By | | Project | 2278-7228 |
| Check By | M.Y. | Check By | M.L. | Drawing | T301 |

SNAKE RAIL FENCE

PARKING AISLE

PARKING AISLE

AIRPORT ROAD

PARKING AISLE

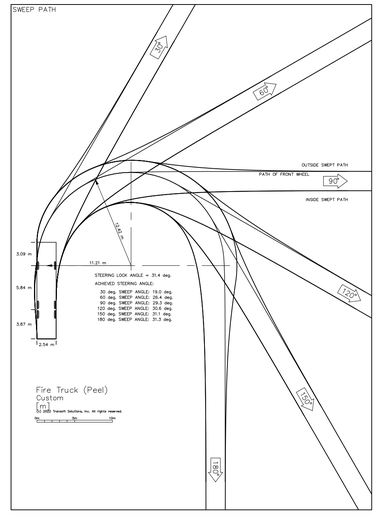
PARKING AISLE



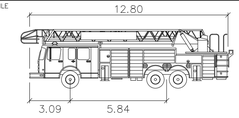

FOR REVIEW

NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH




VEHICLE PROFILE




Fire Truck (Peel)

| | meters |
|---|---|
| Width | : 2.54 |
| Track | : 2.54 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 31.4 |

| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 1 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Project

BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

Drawing

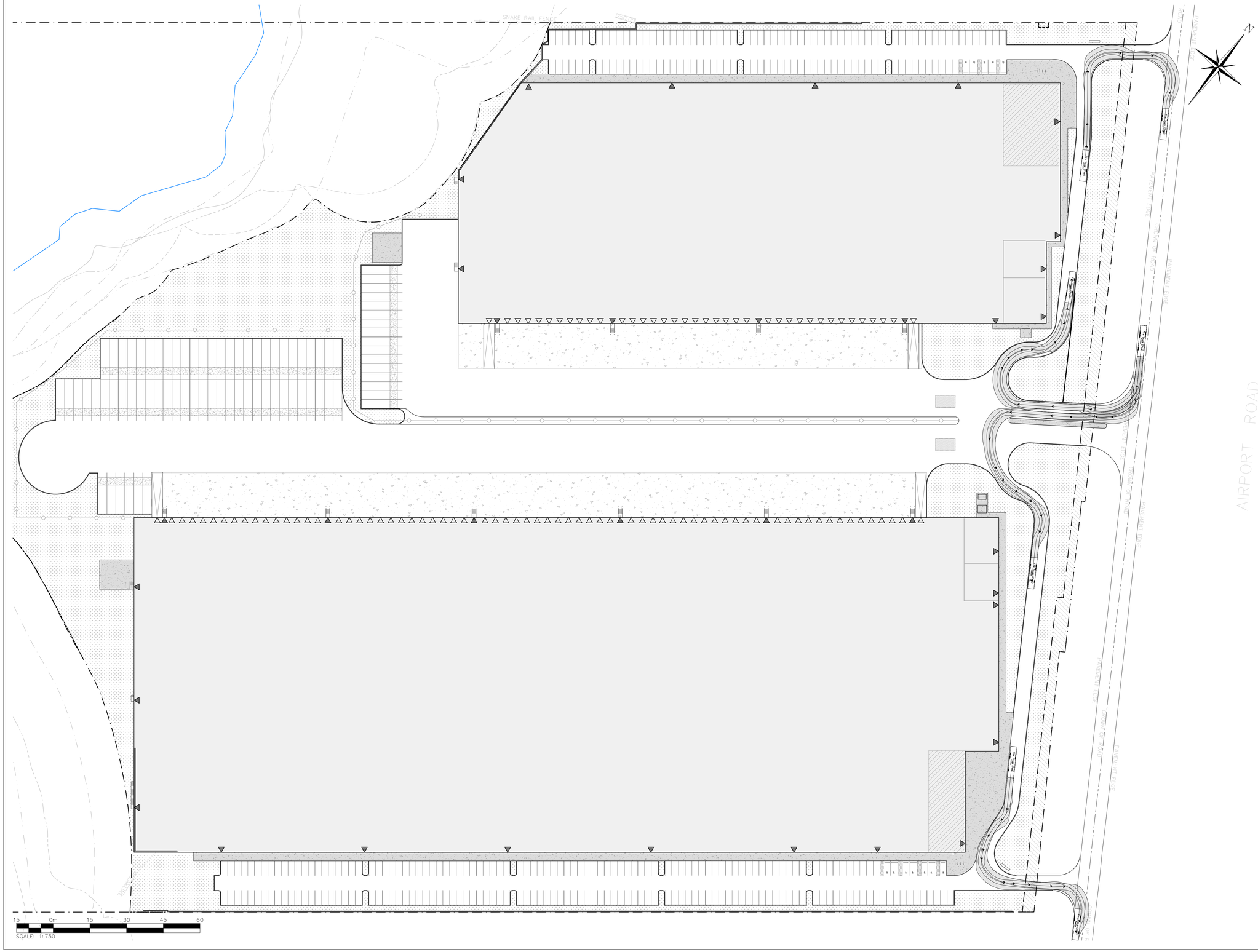
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

| Drawn By | Design By | Project |
|---|---|---|
| R.L. | | 2278-7228 |
| Check By | Check By | Drawing |
| M.Y. | M.L. | T302 |

15 0m 15 30 45 60

SCALE: 1:750


SNAKE RAIL FENCE
AIRPORT ROAD
PARKING AISLE
PARKING AISLE
PARKING AISLE

SNAKE RAIL FENCE

PARKING AISLE

PARKING AISLE

PARKING AISLE

PARKING AISLE

AIRPORT ROAD

15 0m 15 30 45 60

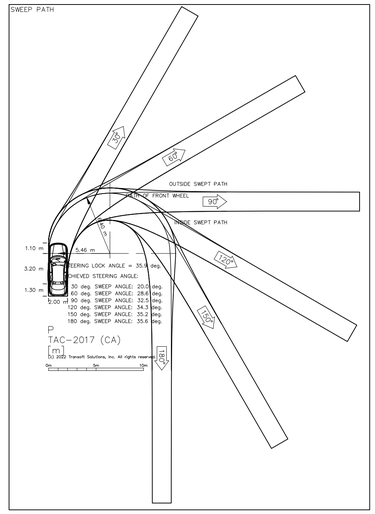
SCALE: 1:750



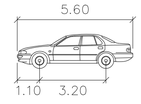

KEY PLAN
SCALE: N.T.S.

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH




VEHICLE PROFILE




P

| | meters |
|---|---|
| Width | : 2.00 |
| Track | : 2.00 |
| Lock to Lock Time | : 6.0 |
| Steering Angle | : 35.9 |

| No. | ISSUE | DATE: MM/DD/YYYY |
|---|---|---|
| 1 | ISSUED FOR 1st SUBMISSION | 11/14/2025 |

Project

BROCCOLINI AIRPORT ROAD
TOWN OF CALEDON

Drawing

VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

| Drawn By | Design By | Project |
|---|---|---|
| R.L. | | 2278-7228 |
| Check By | Check By | Drawing |
| M.Y. | M.L. | T304 |

# APPENDIX Q:

## Zoning By-Law Excerpts

## SECTION 5
## PARKING, LOADING AND DELIVERY STANDARDS

### 5.1 APPLICABILITY OF THIS SECTION

a) The *parking, loading* and *delivery space* requirements of this section of the By-law shall not apply to any *building* in existence at the date of passing of this By-law so long as the *floor area*, as it existed at such date, is not increased or if the *building* or *structure* is used for a purpose that requires more *parking spaces*.

b) If an addition is made to the *building* that increases the *floor area*, additional *parking*, *loading* and *delivery spaces* shall be provided for the additional *floor area* only, as required by the regulations of this By-law.

### 5.2 PARKING

#### 5.2.1 Restriction On *Use* Of Land, *Buildings* And *Structures*

No *person* shall use any land, *building* or *structure* in any *Zone* for any purpose permitted by this By-law, unless *parking spaces* are provided in accordance with the provisions of this Section of the By-law.

#### 5.2.2 Residential *Parking* Requirements

The number of *parking spaces* required for residential *uses* shall be calculated in accordance with the standards set out in **Table 5.1**:

**TABLE 5.1**

| **Type or Nature of *Use*** | **Minimum Off-Street *Parking* Requirements** |
|---|---|
| *Apartment, Accessory* | 1 *parking space* per each 70m$^2$ or portion thereof to a maximum of 2 *parking spaces* |
| *Bed & Breakfast Establishment* | 1 *parking space* per *guest room,* in addition to the minimum *parking* requirement for a *detached dwelling* |
| *Building, Apartment* | 1.5 *parking spaces* per *dwelling unit* + 0.25 *parking spaces* per unit for visitor parking in a designated visitor *parking area* |
| *Country Inn* | 1 *parking space* per *guest room,* in addition to the minimum *parking* requirement for a *detached dwelling* |
| *Day Care, Private Home* | No requirement |
| *Dwelling, Back-to-Back Townhouse* | 2 *parking spaces* per *dwelling unit* plus 0.25 visitor *parking spaces* for each *dwelling unit*. Such visitor *parking spaces* shall not be located on exclusive use lands |
| *Dwelling, Detached* | 2 *parking spaces* per *dwelling unit* |
| *Dwelling, Duplex* | 2 *parking spaces* per *dwelling unit* |

| | |
|---|---|
| *Dwelling, Linked* | 2 *parking spaces* per *dwelling unit* |
| *Dwelling, Semi-Detached* | 2 *parking spaces* per *dwelling unit* |
| *Dwelling, Townhouse* | 2 *parking spaces* per *dwelling unit* + 0.25 *parking spaces* per unit for visitors on a *lot* with four or more *dwelling units* |
| *Dwelling Unit, Accessory* | 1 *parking space* per each 70m$^2$ or portion thereof to a maximum of 2 *parking spaces* |
| *Home Business (ORM)* | *Parking spaces* in addition to the required parking for the residential *use* shall be provided in accordance with the following:<br>• 0-10m$^2$ - no additional *parking spaces*<br>• >10m$^2$ - 1 *parking space* |
| *Home Industry (ORM)* | *Parking spaces* in addition to the required parking for the residential *use* shall be provided in accordance with the following:<br>• 0-10m$^2$ - no additional *parking spaces*<br>• >10m$^2$ - 1 *parking space* |
| *Home Occupation* | *Parking spaces* in addition to the required parking for the residential *use* shall be provided in accordance with the following:<br>• 0-10m$^2$ - no additional *parking spaces*<br>• >10m$^2$ - 1 *parking space* |
| *Seniors Retirement Facility* | 1.5 *parking spaces* per *dwelling unit* + 0.25 *parking spaces* per unit for visitor parking in a designated visitor *parking area* |

### 5.2.3 Non-Residential *Parking* Requirements

The number of *parking spaces* required for non-residential *uses* shall be calculated in accordance with the standards set out in **Table 5.2**:

**TABLE 5.2**

| **Type or Nature of *Use*** | **Minimum Off-Street *Parking* Requirements** |
|---|---|
| *Adult Day Centre* | 1 *parking space* per staff member + 1 *parking space* per 30 m$^2$ of *net floor area* or portion thereof |
| *Animal Hospital* | 1 *parking space* per 16.5 m$^2$ *of net floor area* or portion thereof |
| *Art Gallery* | 1 *parking space* per 100 m$^2$ of *net floor area* or portion thereof where no retail; 1 per 60 m$^2$ or portion thereof where retail component |
| *Artisan Operation* | 1 *parking space* per 100 m$^2$ of *net floor area* or portion thereof where no retail; 1 per 60 m$^2$ or portion thereof where retail component |

| | |
|---|---|
| *Artist Studio & Gallery* | 1 *parking space* per 100 $m^2$ of *net floor area* or portion thereof where no retail; 1 per 60 $m^2$ or portion thereof where retail component |
| *Bakery* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Business Office* | 1 *parking space* per 30 $m^2$ of *net floor area* or portion thereof |
| *Cannabis-Related Use – Indoor* | 1 *parking space* per 100 $m^2$ of *gross floor area* or portion thereof |
| *Clinic* | 1 *parking space* per 16.5 $m^2$ *of net floor area* or portion thereof |
| *Club* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Community Centre* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Day Nursery* | 1 *parking space* per staff member + 1 *parking space* per 30 $m^2$ of *net floor area* or portion thereof |
| *Dry Cleaning or Laundry Plant* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Dry Cleaning or Laundry Outlet* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Factory Outlet* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Financial Institution* | 1 *parking space* per 25 $m^2$ of *net floor area* or portion thereof |
| *Fitness Centre* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Funeral Home* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Golf Course* | 12 *parking spaces* per hole |
| *Hospital* | 1.5 *parking spaces* per bed |
| *Hotel* | 1 *parking space* per *guest room*, plus 1 *parking space* per 10 $m^2$ or portion thereof of *net floor area* devoted to meeting, dining and banquet facilities. |
| *Industrial Hemp-Related Use - Indoor* | 1 *parking space* per 100$m^2$ of *gross floor area* or portion thereof |
| *Industrial Use* | a) If accessory office and retail *net floor area*s are 15% or less of the total *net floor area*:<br>• Up to 5,000 $m^2$ – 1 *parking space* per 60 $m^2$ *net floor area* or portion thereof<br>• 5,000 to 10,000 $m^2$ – 83 *parking spaces*, plus 1 *parking space* per 90 $m^2$ of *net floor area* or portion thereof over 5,000 $m^2$<br>• Over 10,000 $m^2$ – 139 *parking spaces*, plus 1 *parking space* per 170 $m^2$ or portion thereof of *net floor area* or portion thereof over 10,000 $m^2$ |

| | |
|---|---|
| | b) If associated office and retail *net floor areas* are more than 15% of the total *net floor area*:<br><br>In addition to the standards contained above in (a), the applicable *net floor areas* exceeding 15% shall be subject to the applicable office or retail parking requirements |
| *Laundromat* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Library* | 1 *parking space* per 30 $m^2$ of *net floor area* or portion thereof |
| *Light Equipment Rental Establishment* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Long Term Care Facility* | 0.5 *parking spaces* per bed |
| *Medical Centre* | 1 *parking space* per 16.5 $m^2$ *of net floor area* or portion thereof |
| *Medical Laboratory* | 1 *parking space* per 16.5 $m^2$ *of net floor area* or portion thereof |
| *Merchandise Service Shop* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Motel* | 1 *parking space* per *guest room*, plus 1 *parking space* per 10 $m^2$ or portion thereof of *net floor area* devoted to meeting, dining and banquet facilities. |
| *Motor Vehicle Body Shop* | 3 *parking spaces* per service bay plus 1 *parking space* per 20 $m^2$ or portion thereof of *net floor area* for the office and any retail *use* |
| *Motor Vehicle Gas Bar* | 1 *parking space* per 20 $m^2$ or portion thereof of *net floor area* exclusive of fuel dispensing spaces |
| *Motor Vehicle Repair Facility* | 3 *parking spaces* per service bay plus 1 *parking space* per 20 $m^2$ or portion thereof of *net floor area* for the office and any retail *use* |
| *Motor Vehicle Service Centre* | 3 *parking spaces* per service bay plus 1 *parking space* per 20 $m^2$ or portion thereof of *net floor area* for the office and any retail *use* |
| *Motor Vehicle uses not otherwise listed* | 1 *parking space* per 20 $m^2$ or portion thereof of *net floor area* exclusive of display and storage parking |
| *Museum* | 1 *parking space* per 100 $m^2$ of *net floor area* or portion thereof where no retail; 1 per 60 $m^2$ or portion thereof where retail component |
| *On-farm Diversified Use* | 1 *parking space* per 100 $m^2$ of *gross floor area* or portion thereof |
| *Park* | 5 *parking spaces* per hectare or portion thereof |
| *Personal Service Shop* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Place of Assembly* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Place of Entertainment* | the greater of 1 *parking space* per 6 seats capacity or 1 *parking space* per 10$m^2$ of *net floor area* or portion thereof |

| | |
|---|---|
| *Place of Worship* | the greater of 1 *parking space* per 6 persons design capacity of the worship area or 1 *parking space* for 10 $m^2$ of *net floor area* or portion thereof of the worship areas and any *accessory use* areas, excluding residential *uses*. |
| *Printing & Processing Service Shop* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| Recreational *Use* | 30 *parking spaces* per ball field<br>30 *parking spaces* per soccer field<br>4 *parking spaces* per tennis court |
| *Research Establishment* | 1 *parking space* per 30 $m^2$ of *net floor area* or portion thereof |
| *Restaurant* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Retail Store* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *Sales Service and Repair Shop* | 1 *parking space* per 20 $m^2$ of *net floor area* or portion thereof |
| *School* | Elementary – 1 *parking space* per 100 $m^2$ of *gross floor area* or portion thereof and 1 *parking space* per portable<br><br>Secondary – 1.5 *parking spaces* per 100 $m^2$ of *gross floor area* or portion thereof and 1 *parking space* per portable classroom |
| *Studio* | 1 *parking space* per 100 $m^2$ of *net floor area* or portion thereof |
| *Sports Arena* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Training Facility* | 1 *parking space* per 30 $m^2$ of *net floor area* or portion thereof |
| *Transportation Depot* | a) If associated office or retail *net floor areas* are 15% or less of the total *net floor area*:<br>• Up to 7,000 $m^2$ – 1 *parking space* per 90 $m^2$ *net floor area* or portion thereof7,000 to 20,000 $m^2$ – 78 *parking spaces*, plus 1 *parking space* per 145 $m^2$ of *net floor area* or portion thereof over 7000 $m^2$<br>• Over 20,000 $m^2$ – 168 *parking spaces*, plus 1 *parking space* per 170 $m^2$ of *net floor area* or portion thereof over 20,000 $m^2$<br>b) If associated office or retail *net floor areas* are more than 15% of the total *net floor area*:<br><br>In addition to the standards contained above in (a), the applicable *net floor areas* exceeding 15% shall be subject to the applicable office or retail parking requirements |
| *Warehouse* | a) If associated office or retail *net floor areas* are 15% or less of the total *net floor area*:<br>• Up to 7,000 $m^2$ – 1 *parking space* per 90 $m^2$ *net floor area* or portion thereof 7,000 to 20,000 $m^2$ – |

| | |
|---|---|
| | 78 *parking spaces*, plus 1 *parking space* per 145 $m^2$ of *net floor area* or portion thereof over 7000 $m^2$<br>• Over 20,000 $m^2$ – 168 *parking spaces*, plus 1 *parking space* per 170 $m^2$ of *net floor area* or portion thereof over 20,000 $m^2$<br><br>b) If associated office or retail *net floor areas* are more than 15% of the total *net floor area*:<br><br>In addition to the standards contained above in (a), the applicable *net floor areas* exceeding 15% shall be subject to the applicable office or retail parking requirements |
| *Warehouse, Public Self-Storage* | 1 *parking space* per 30 $m^2$ of *net floor area* or portion thereof within the office; plus 1 *parking space* per 100 $m^2$ of *net floor area* or portion thereof of the *building* |
| *Warehouse, Retail* | 1 *parking space* per 30 $m^2$ *of net floor area* or portion thereof |
| *Warehouse, Wholesale* | 1 space per 80 $m^2$ *of net floor area* or portion thereof |
| *Wellness Centre* | 1 *parking space* per 15 $m^2$ of *net floor area* or portion thereof |
| *Veterinary Hospital* | 1 *parking space* per 16.5 $m^2$ *of net floor area* or portion thereof |
| *Uses* permitted by this By-law other than those listed in this Table | 1 *parking space* per 45 $m^2$ of total *floor area* or portion thereof |

Where the minimum parking requirement in an Exception or Planned Development *Zone* is different from the above requirements, the applicable minimum *parking* provisions of the Exception or Planned Development *Zone* shall apply.

### 5.2.4 Calculation Of *Parking, Loading* and *Delivery* Requirements

Where the minimum number of *parking, loading* or *delivery spaces* is calculated on the basis of a rate or ratio, the required number of *parking, loading or delivery spaces* shall be rounded to the next higher whole number.

### 5.2.5 More Than One *Use* On A *Lot*

The parking requirements for more than one *use* on a single *lot* or for a *building* containing more than one *use*, shall be the sum total of the parking requirements for each of the component *uses*, unless otherwise noted.

### 5.2.6 Barrier-Free *Parking*

Barrier-free *parking spaces* shall be provided in accordance with the provisions of the barrier-free access requirements in Town of Caledon By-law 2015-058, as may be amended from time to time.

### 5.2.7 Exclusive Use Of A *Parking, Loading* or *Delivery Space*

Any required *parking, loading* or *delivery space* shall be unobstructed and available for parking, delivery or loading purposes and used exclusively for that purpose at all times, unless otherwise specified in this By-law.

### 5.2.8 Location Of Required *Parking, Loading* and *Delivery Spaces*

Required *parking, loading* and *delivery spaces* shall be located on the same *lot* as the *use* that requires the *parking, loading* or *delivery space*. Notwithstanding the above, required *parking, loading* and *delivery spaces* for any commercial *use* permitted within the **CC** and **CV** *Zones* may be located on another *lot* within 150 metres of the *lot* on which *parking, loading* or *delivery spaces* would be required for a *use*, provided the off-site *parking, loading* or *delivery spaces* are located on a *lot* in a Commercial *zone* and subject to the applicant/proponent executing an Off-Site Parking, Loading and/or Delivery Agreement with the Town.

### 5.2.9 *Parking* Required For *Outdoor Patios*

*Parking spaces* are not required for any *outdoor patio* that is less than 40% of the *net floor area* of the *restaurant* it serves. The standard *restaurant* ratio shall apply to any area over 40%.

### 5.2.10 Location Of Parking On A *Lot* Used For Residential Purposes

The parking of *motor vehicles* associated with a residential *use* is permitted only within a *parking garage*, *private garage*, *carport* or on a *driveway* accessing an individual *dwelling unit*, a *private garage* or a *carport*.

### 5.2.11 Size Of *Parking Spaces*

a) Where *parking spaces* are provided in a surface *parking area*, each *parking space* shall have width of not less than 2.75 metres and length of not less than 6.0 metres, with the exception of a barrier-free *parking space* which shall have a width and a length which complies with the Town's barrier-free parking requirements

b) Where *parking space*s are provided in an enclosed or underground *parking garage*, such *parking spaces* shall have width of not less than 2.6 metres and length of not less than 5.8 metres.

c) The width and length of a parking space shall be measured exclusive of the width or length of any painted lines marking such parking space.

### 5.2.12 Width Of *Aisles*

The minimum width of an *aisle* providing access to a *parking space* within a *parking area* shall be 6.0 metres, except in the case of angled off-street parking accessed by a one-way *aisle*, which shall be a minimum width of 4.5 metres.

### 5.2.13 Width Of Access Ramps And D*riveways*

Access ramps and *driveways* accessing a *parking area* or *parking lot* shall be a minimum of 4.5 metres in width for one-way traffic and a minimum of 6.0 metres in width

for two-way traffic. For a *Commercial* or *Municipal Parking Lot,* a minimum of 9.0 metres in width shall be required.

### 5.2.14 *Driveway* Provisions for Residential *Dwellings*

a) Notwithstanding any other provision of this By-law, in no case shall the width of an individual *driveway* accessing a single *detached, semi-detached, linked or townhouse dwelling* exceed the following at its widest point:

   i) 6.0 metres for a *lot* having a *lot frontage* of 12.0 metres or less;

   ii) Equal to 50% of the *lot frontage* on a *lot* having greater than 12.0 metres and less than 18.0 metres of *lot frontage*;

   iii) 10.0 metres for a *lot* having a *lot frontage* equal to or greater than 18.0 metres

b) The maximum *driveway width* provisions in this section apply to a *driveway* accessing any residential *use*

c) The calculation of *driveway width* shall apply along the entire length of the *driveway*, perpendicular to the path of travel. The measurement shall be calculated including any continuous hard surface area, measured along the entire length of the *driveway* perpendicular from one edge to the other edge of the continuous hard surface area

d) Circular *driveways* are permitted, subject to the following standards:

   i) The maximum coverage of a *driveway*, including the circular portion of the *driveway*, shall be 50% of the area of the *yard* in which the *driveway* is located

   ii) The *front lot line* or *exterior side lot line* containing the *entrance* is equal to or greater than 36 metres in width

   iii) Notwithstanding Section 4.3.5 Access Regulations, the maximum cumulative *entrance widths*, measured at the point of crossing the *front lot line* and/or the *exterior side yard lot line*, shall be 10.0 metres

   iv) The widest point beyond circular portion of the *driveway* shall not exceed a maximum width of 10.0 metres.

   v) The open space between access points complies with the minimum *entrance separation* provisions in Section 4.3.4 of this By-law

e) Hammerhead *driveways* are permitted, subject to the following standards:

   i) The hammerhead may be used for the parking of *motor vehicles*

   ii) The hammerhead must be located in a *front yard* or *exterior side yard*

iii) The maximum length of the hammerhead extending perpendicularly from the *driveway* shall be 2.0 metres

iv) The maximum width of the hammerhead that is parallel to the *driveway* shall be 3.0 metres

v) A hammerhead *driveway* must meet the required *driveway setback* of the applicable *zone*

### 5.2.15 Surface Treatment

All required *parking spaces* and *parking area*s and all *driveways* to any *parking area* or *parking lot* shall be maintained with a stable surface which may include asphalt, concrete, concrete pavers, gravel or similar material which is treated so as to prevent the raising of dust or loose particles.

### 5.2.16 *Parking Garages*

*Parking garages* shall comply with the *Zone* provisions for the *main building* for the *Zone* in which it is located in accordance with this By-law. No *setbacks* or *yards* shall be required for any portion of a *parking garage* constructed completely below the established grade. This exemption shall also apply to ventilation shafts and housings, stairways and other similar facilities associated with below grade parking garages that extend from below established grade.

### 5.2.17 *Parking Area* Location On A Non-Residential *Lot*

Notwithstanding any other provisions of this By-law, *parking areas* shall be set back a minimum of 2.0 metres from any *building* or *structure*.

### 5.2.18 Illumination

Where *parking areas* are illuminated, the lighting fixtures shall be provided in accordance with the following provisions:

a) No part of the lighting fixture shall be more than 9 metres above grade and no closer than 4.5m to any *lot line*; and,

b) Lighting fixtures shall be installed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the fixture is projected below the lamp and onto the *lot* the lighting is intended to serve.

### 5.2.19 Parking of *Commercial Motor Vehicles*

**5.2.19.1** The parking or storage of one *commercial motor vehicle* per *dwelling* on a *lot* is permitted on any *lot* subject to the Environmental Policy Area Zone, Residential Zone or Agricultural and Rural Zone provisions, provided the *commercial motor vehicle* has a registered gross vehicle weight of 4,500 kilograms or less and provided that all other *zone* standards including, but not limited to, *driveway* width and minimum parking requirements are met. If the *commercial motor vehicle* is a school bus, it may exceed a weight of 4,500 kilograms.

**5.2.19.2** The parking or storage of a *commercial motor vehicle* with a registered gross vehicle weight of more than 4,500 kilograms on any *lot* that is subject to Residential Zone, Environmental Policy Area Zone or Agricultural and Rural Zone provisions is prohibited.

### 5.2.20 Parking and Storage of *Tractor Trailers*

**5.2.20.1** The parking or storage of a *tractor trailer* on any *lot* that is subject to Residential Zone, Environmental Policy Area Zone or Agricultural and Rural Zone provisions is prohibited.

**5.2.20.2** The parking or storage of a *tractor trailer* on any *lot* shall be screened by a *building,* a solid board fence or chain link fence with opaque fencing material which is a minimum of 2.0 metres high.

## 5.3 LOADING

### 5.3.1 Restriction On Use Of Land, *Buildings* And *Structures*

No *person* shall use any land, *building* or *structure* in any Commercial or Industrial *Zone* for any purpose permitted by this By-law, unless *loading spaces* are provided in accordance with the provisions of this Section of the By-law.

### 5.3.2 *Loading Space* Requirements

The minimum number of *loading spaces* required for the *uses* identified in Table **5.3.1** shall be calculated in accordance with the standards set out in **Table 5.3.2**:

**TABLE 5.3.1**

| ***Uses*** |
|---|
| *Airport* |
| *Building Supply Outlet* |
| *Bulk Storage Facility* |
| *Cannabis-Related Use - Indoor* |
| *Contractor's Facility* |
| *Dry Cleaning or Laundry Plant* |

| |
|---|
| *Equipment Storage Building* |
| *Home Improvement Centre* |
| *Industrial Cannabis-Related Use – Outdoor* |
| *Industrial Hemp-Related Use – Indoor* |
| *Industrial Hemp-Related Use – Outdoor* |
| *Industrial Use* |
| *Light Equipment Rental Establishment* |
| *Maintenance Garage, Accessory* |
| *Motor Vehicle Body Shop* |
| *Motor Vehicle Repair Facility* |
| *Gravel Pit* |
| *Quarry* |
| *Research Establishment* |
| *Sanitary Landfill Site* |
| *Sewage Treatment Facility* |
| *Supermarket* |
| *Transportation Depot* |
| *Warehouse* |
| *Warehouse, Public Self-Storage* |
| *Warehouse, Wholesale* |
| *Waste Transfer Facility* |
| *Waste Processing Plant* |

**TABLE 5.3.2**

| **For that portion of the *Net Floor Area* of a *use* in Table 5.3.1 that is:** | ***Loading Space* Requirements (1)** |
|---|---|
| 300 $m^2$ or less | Nil |
| 301 $m^2$ to 2,325 $m^2$ | 1 *loading space* |
| 2,326 $m^2$ to 7,440 $m^2$ | *2 loading spaces* |

| | |
|---|---|
| 7,441 $m^2$ or greater | 3 *loading spaces* plus 1 additional *loading space* for each additional 9,300 $m^2$ or portion thereof in excess of 7,441 $m^2$ |

**Footnote to Table 5.3.2:**

**(1)** A *public use* with a *floor area* greater than 301$m^2$, owned and operated by the Town, shall require a maximum of one l*oading space.*

### 5.3.3 Size

Each *loading space* shall be at least 14 metres long, 3.5 metres wide and have a vertical clearance of at least 3.35 metres.

### 5.3.4 More Than One *Use* On A Lot

The minimum *loading space* requirements for more than one *use* on a *lot* or for a *building* containing more than one *use*, shall be the sum total of the *loading space* requirements for each of the component *uses*, unless otherwise noted.

### 5.3.5 Exclusive *Use* Of A *Loading Space*

Any required *loading space* shall be unobstructed and available for loading purposes and used exclusively for that purpose at all times, unless otherwise specified in this By-law.

### 5.3.6 Location Of Required *Loading Spaces*

Required *loading spaces* shall:

a) not be permitted in the *front yard* or *exterior side yard*;

b) not be located closer than 20 metres from any *street line* or Residential *Zone* boundary, but may be permitted within this area if the *loading space* is located entirely within a *structure* on a floor above the *first storey* or below established grade.

### 5.3.7 Surface Treatment

All required *loading spaces* and all *driveways* to any *loading space* shall be maintained with a stable surface which may include asphalt, concrete, concrete pavers, gravel or similar material which is treated so as to prevent the raising of dust or loose particles.

## 5.4 DELIVERY

### 5.4.1 Restriction on Use of Land, *Buildings* and *Structures*

No *person* shall use any land, *building* or *structure* in any Non-Residential *Zone* for any purpose permitted by this By-law, unless *delivery spaces* are provided in accordance with the provisions of this Section of the By-law.

### 5.4.2 *Delivery Space* Requirements

The minimum number of *delivery spaces* for the *uses* shown shall be calculated in accordance with the standards set out in **Table 5.4**:

**TABLE 5.4**

| ***Uses*** | ***Delivery Space* Requirements** |
|---|---|
| *Adult Day Centre* | 1 per *building* per *lot* |
| *Animal Hospital* | 1 per *building* per *lot* |
| *Business Office* | 1 per *building* per *lot* |
| *Community Centre* | 1 per *building* per *lot* |
| *Clinic* | 1 per *building* per *lot* |
| *Convenience Store* | 1 per *building* per *lot* |
| *Crisis Care Facility* | 1 per *building* per *lot* |
| *Day Care Facility* | 1 per *building* per *lot* |
| *Day Nursery* | 1 per *building* per *lot* |
| *Drive-Through Service Facility* | 1 per *building* per *lot* |
| *Financial Institution* | 1 per *building* per *lot* |
| *Fitness Centre* | 1 per *building* per *lot* |
| *Funeral Home* | 2 per *lot* |
| *Grocery Store* | 1 per *building* per *lot* |
| *Hospital* | 2 per *lot* |
| *Hotel* | 1 for each 20 guest rooms or portion thereof |
| *Library* | 1 per *building* per *lot* |
| *Long-Term Care Facility* | 1 per *building* per *lot* |
| *Merchandise Service Shop* | 1 per *building* per *lot* |
| *Motel* | 1 for each 20 guest rooms or portion thereof |
| *Museum* | 1 per *building* per *lot* |
| *Place of Assembly* | 1 per *building* per *lot* |
| *Place of Entertainment* | 1 per *building* per *lot* |
| *Place of Worship* | 1 per *building* per *lot* |

| | |
|---|---|
| *Private Club* | 1 per *building* per *lot* |
| *Restaurant* | 1 per *building* per *lot* |
| *Retail Store* | 1 per *building* per *lot* |
| *School* | 2 per *lot* |
| *Sports Arena* | 1 per *building* per *lot* |
| *Tourist Camp* | 1 for each accessory management office, plus 1 for each recreation building |
| *Training Facility* | 1 per *building* per *lot* |
| *Wellness Centre* | 1 per *building* per *lot* |

### 5.4.3 Size

Each *delivery space* shall be at least 9 metres long, 3.5 metres wide and have a vertical clearance of at least 3 metres.

### 5.4.4 More Than One *Use* on a *Lot*

The minimum *delivery space* requirements for more than one *use* on a single *lot* or for a building containing more than one *use*, shall be the sum total of the *delivery space* requirements for each of the component *uses,* unless otherwise noted.

### 5.4.5 Exclusive *Use* of a *Delivery Space*

Any required *delivery space* shall be unobstructed and available for delivery purposes and used exclusively for that purpose at all times, unless otherwise specified in this By-law.

### 5.4.6 Location of Required *Delivery Spaces*

Required *delivery spaces* shall be located a minimum of 3 metres from any *street line* and a minimum of 6 metres from any Residential *zone* boundary.

### 5.4.7 Surface Treatment

All required *delivery spaces* and all *driveways* to any *delivery space* shall be maintained with a stable surface which may include asphalt, concrete, concrete pavers, gravel or similar material which is treated so as to prevent the raising of dust or loose particles.

**OFFICE CONSOLIDATION**

*This a consolidation of the Town's by-law to regulate the use of highways and parking on highways and to repeal certain by-laws being By-law Number 2024-048 as amended by By-law 2025-064, 2025-073 and 2025-091. The following consolidation is an electronic reproduction made available for information purposes only and is not an official version of the by-law. Official versions of all by-laws can be obtained from the Town Clerk by calling (905) 584-2272. If there are any discrepancies between this consolidation and By-laws 2024-048, 2025-064, 2025-073 and 2025-091 the By-laws shall prevail.*

# THE CORPORATION OF THE TOWN OF CALEDON

## BY-LAW NO. BL- 2024-048

A by-law to regulate the use of highways and
parking on highways and to repeal certain by-laws

**WHEREAS** Subsection 11(3) of the *Municipal Act, 2001* authorizes a municipality to pass by-laws respecting highways, including parking and traffic on highways under the jurisdiction of the Town of Caledon;

[Whereas Clause [Section 27(1)] added, By-law 2025-073, effective September 23/25]

**AND WHEREAS** pursuant to Section 27(1) of the Act, a municipality may pass bylaws in respect of a highway only if it has jurisdiction over the highway;

**AND WHEREAS** Sections 100 and 100.1 of the *Municipal Act, 2001* authorize a municipality to pass by-laws respecting parking lots;

**AND WHEREAS** Section 101 of the *Municipal Act, 2001* authorizes a municipality to pass by-laws providing for the removal of vehicles parked illegally at the owner's expense;

**AND WHEREAS** Section 102 of the *Municipal Act, 2001* authorizes a municipality to pass by-laws respecting accessible parking and for the removal of a vehicle at the owner's expense;

**AND WHEREAS** Part IX of the *Highway Traffic Act* authorizes a municipality to provide for rates of speed within the municipality;

**AND WHEREAS** Section 7.1 of the *Fire Protection and Prevention Act, 1997* authorizes a municipality to pass by-laws designating private roads as fire routes and providing for the impounding of any vehicle parked or left along any of the fire routes at the expense of the owner of the vehicle;

**AND WHEREAS** Subsection 7(2) of the *Motorized Snow Vehicles Act* authorizes a municipality to pass by-laws respecting the operation of motorized snow vehicles within a municipality, including any highways;

**AND WHEREAS** the Council for The Corporation of the Town of Caledon considers it advisable to enact an updated and consolidated traffic by-law;

**NOW THEREFORE** the Council of The Corporation of the Town of Caledon **ENACTS AS FOLLOWS**:

## PART 1 - DEFINITIONS

### GENERAL DEFINITIONS

1.1 Where words and phrases used in this by-law are defined in the *HIGHWAY TRAFFIC ACT*, but not defined in this by-law, the definitions in the *HIGHWAY TRAFFIC ACT* and its regulations or its successors shall apply to such words and phrases.

3.59 No PERSON, without a valid temporary parking pass, shall PARK a VEHICLE on a HIGHWAY:

(a) For period longer than three (3) continuous hours;

(b) Between the hours of 2:00 a.m. and 6:00 am;

3.60 The DIRECTOR is hereby designated to issue a temporary parking pass and determine such procedures, terms, and conditions under which a temporary parking pass may be issued.

3.61 A temporary parking pass shall not grant any exemption to any regulations set out in this By-law except for the purpose specified on the pass in accordance with Article 3.59.

### *Accessible Parking for Persons with Disabilities*

3.62 No PERSON shall PARK, STOP or STAND a vehicle in a DESIGNATED ACCESSIBLE PARKING SPACE, or be entitled to the benefit of an exemption under this by-law, unless a currently valid ACCESSIBLE PARKING PERMIT has been issued to that PERSON or to a passenger being picked up or transported in such VEHICLE, and such permit is displayed on or in the VEHICLE in accordance with the *HIGHWAY TRAFFIC ACT*.

3.63 No PERSON driving a VEHICLE displaying a VALID ACCESSIBLE PARKING PERMIT, shall PARK on or behind an ACCESS AISLE.

3.64 Every OWNER and operator of a PARKING LOT who is required to provide a DESIGNATED ACCESSIBLE PARKING SPACE is responsible for the procurement, installation and maintenance of the accessible parking sign and for ensuring that the sign conforms with the *HIGHWAY TRAFFIC ACT* and to the requirements of this by-law.

3.65 No PERSON shall relocate or remove a DESIGNATED ACCESSIBLE PARKING SPACE without the prior written approval of the DIRECTOR.

3.66 No OWNER or operator of a PARKING LOT shall at any time obstruct, cause to be obstructed or permit to be obstructed by any means or in any manner a DESIGNATED ACCESSIBLE PARKING SPACE.

3.67 Every OWNER or operator of a PARKING LOT who is required to provide a DESIGNATED ACCESSIBLE PARKING SPACE shall keep the PARKING SPACE clear of snow and ice.

3.68 Where an OWNER or operator of a PARKING LOT is required to provide a DESIGNATED ACCESSIBLE PARKING SPACE and fails to maintain a PARKING SPACE in good repair the TOWN may undertake or cause to undertake the necessary repair at the OWNER's or operator's expense and the TOWN may recover the expense incurred in doing it by action or in like manner as municipal taxes.

3.69 The OWNER or operator of a PARKING LOT shall not require the driver of a VEHICLE on or in which a permit is displayed in accordance with the requirements of the *HIGHWAY TRAFFIC ACT* and this by-law to pay an amount in excess of the normal fee paid by other users of the same PARKING LOT.

3.70 The OWNERs and operators of PARKING LOTs or other parking facilities to which the public has access, whether on payment of a fee or otherwise, shall provide DESIGNATED ACCESSIBLE PARKING SPACES in accordance with Ontario Regulation 191/11 (Integrated Accessibility Standards) as amended made under the Accessibility for Ontarians with Disabilities Act, 2005 as amended, as well as meeting the technical guidelines set out in Schedule "O" of this by-law.

[Section "Electric Vehicles" added, By-law 2025-073, effective September 23/25]

### *Electric Vehicles*

3.71 No Person shall Park or leave Vehicle or any part of a Vehicle:

(a) in an ELECTRIC VEHICLE PARKING STALL where such VEHICLE is not an ELECTRIC VEHICLE.

(b) in an ELECTRIC VEHICLE PARKING STALL where such VEHICLE is not connected to an ELECTRIC VEHICLE CHARGING STATION and actively charging.

# O. Reg. 191/11: INTEGRATED ACCESSIBILITY STANDARDS

Under: Accessibility for Ontarians with Disabilities Act, 2005, S.O. 2005, c. 11

Download Word Print

Versions | Other regulations under the same Act

CURRENT **January 1, 2024 - e-Laws currency date (October 24, 2025)**

November 29, 2023 - December 31, 2023

July 1, 2016 - November 28, 2023

June 6, 2016 - June 30, 2016

January 1, 2013 - June 5, 2016

December 14, 2012 - December 31, 2012

July 1, 2011 - December 13, 2012

June 3, 2011 - June 30, 2011

Show less

## Accessibility for Ontarians with Disabilities Act, 2005

## ONTARIO REGULATION 191/11

## INTEGRATED ACCESSIBILITY STANDARDS

CURRENT Consolidation period: January [illegible] e-Laws currency date (October 24, 2025)

3. Parking for law enforcement vehicles.

4. Parking for medical transportation vehicles, such as ambulances.

5. Parking used as a parking lot for impounded vehicles. O. Reg. 413/12, s. 6.

(2) The requirements in respect of off-street parking facilities do not apply to off-street parking facilities if,

(a) the off-street parking facilities are not located on a barrier-free path of travel, regulated under Ontario Regulation 350/06 (Building Code) made under the *Building Code Act, 1992; and*

*(b) the* obligated organization has multiple off-street parking facilities on a single site that serve a building or facility. O. Reg. 413/12, s. 6.

## Types of accessible parking spaces

**80.34** Off-street parking facilities must provide the following two types of parking spaces for the use of persons with disabilities:

1. Type A, a wider parking space which has a minimum width of 3,400 mm and signage that identifies the space as “van accessible”.

2. Type B, a standard parking space which has a minimum width of 2,400 mm. O. Reg. 413/12, s. 6.

## Access aisles

**80.35** (1) Access aisles, that is the space between parking spaces that allows persons with disabilities to get in and out of their vehicles, must be provided for all parking spaces for the use of persons with disabilities in off-street parking facilities. O. Reg. 413/12, s. 6.

(2) Access aisles may be shared by two parking spaces for the use of persons with disabilities in an off-street parking facility and must meet the following requirements:

1. They must have a minimum width of 1,500 mm.

2. They must extend the full length of the parking space.

3. They must be marked with high tonal contrast diagonal lines, which discourages parking in them, where the surface is asphalt, concrete or some other hard surface. O. Reg. 413/12, s. 6.

## Minimum number and type of accessible parking spaces

**80.36** (1) Off-street parking facilities must have a minimum number of parking spaces for the use of persons with disabilities, in accordance with the following requirements:

Fr

12 parking spaces or fewer.

2. Four per cent of the total number of parking spaces for the use of persons with disabilities, where there are between 13 and 100 parking spaces in accordance with the following ratio, rounding up to the nearest whole number:

i. Where an even number of parking spaces for the use of persons with disabilities are provided in accordance with the requirements of this paragraph, an equal number of parking spaces that meet the requirements of a Type A parking space and a Type B parking space must be provided.

ii. Where an odd number of parking spaces for the use of persons with disabilities are provided in accordance with the requirements of this paragraph, the number of parking spaces must be divided equally between parking spaces that meet the requirements of a Type A parking space and a Type B parking space, but the additional parking space, the odd-numbered space, may be a Type B parking space.

3. One parking space for the use of persons with disabilities and an additional three per cent of parking spaces for the use of persons with disabilities, where there are between 101 and 200 parking spaces must be parking spaces for the use of persons with disabilities, calculated in accordance with ratios set out in subparagraphs 2 i and ii, rounding up to the nearest whole number.

4. Two parking spaces for the use of persons with disabilities and an additional two per cent of parking spaces for the use of persons with disabilities, where there are between 201 and 1,000 parking spaces must be parking spaces for the use of persons with disabilities in accordance with the ratio in subparagraphs 2 i and ii, rounding up to the nearest whole number.

5. Eleven parking spaces for the use of persons with disabilities and an additional one per cent of parking spaces for the use of persons with disabilities, where more than 1,000 parking spaces are provided must be parking spaces for the use of persons with disabilities in accordance with the ratio in subparagraphs 2 i and ii, rounding up to the nearest whole number. O. Reg. 413/12, s. 6.

(2) If an obligated organization provides more than one off-street parking facility at a site, the obligated organization shall calculate the number and type of parking spaces for the use of persons with disabilities according to the number and type[illegible]g spaces required for each off-street parking facility. O. Reg. 413

Fr

# APPENDIX R:

## Vehicle Parking Justification Excerpts

# ONTARIO REGULATION 157/22

made under the

**PLANNING ACT**

Made: March 4, 2022
Filed: March 4, 2022
Published on e-Laws: March 7, 2022
Printed in *The Ontario Gazette*: March 19, 2022

# ZONING ORDER - TOWN OF CALEDON, REGIONAL MUNICIPALITY OF PEEL

## Definition

**1.** In this Order,

"Zoning By-law" means Zoning By-Law No. 2006-50 of the Town of Caledon.

## Application

**2.** (1) This Order applies to lands in the Town of Caledon, in the Regional Municipality of Peel, in the Province of Ontario, being the lands outlined in red on a map numbered 291 and filed at the Toronto office of the Ministry of Municipal Affairs and Housing located at 777 Bay Street.

(2) For the purposes of this Order, the lands described in subsection (1) shall be considered as a single lot.

## Prestige Industrial Zone

**3.** (1) This section applies to the lands located in the area shown as the Prestige Industrial Zone on the map referred to in section 2.

(2) Every use of land and every erection, location or use of any building or structure is prohibited on the lands referred to in subsection (1), except for,

(a) uses permitted in the Prestige Industrial (MP) and Prestige Industrial (MP-522) zones of the Zoning By-law;

(b) a cold storage warehouse; and

(c) a transportation depot.

(3) The zoning requirements for the Prestige Industrial (MP-522) Zone set out in section 13 of the Zoning By-law apply to the uses permitted under subsection (2), with the following exceptions:

1. The front lot line shall be the lot line abutting Mayfield Road.

2. The exterior side lot line shall be the lot line abutting Dixie Road.

3. There is no minimum front yard setback.

4. The rear yard setback is 6 metres.

5. The maximum building height is 20 metres.

6. The minimum number of required parking spaces for all uses is one space per 230 square meters of gross floor area.

7. A planting strip is not required abutting an Environmental Protection Zone that has a minimum width of 6 metres.

8. There are no zoning requirements for a business office use.

9. Section 5.2.21.2 of the Zoning By-law does not apply.

## Serviced Industrial Zone

**4.** (1) This section applies to the lands located in the area shown as the Serviced Industrial Zone on the map referred to in section 2.

(2) Every use of land and every erection, location or use of any building or structure is prohibited on the lands referred to in subsection (1), except for,

(a) uses permitted in the Serviced Industrial (MS) Zone of the Zoning By-law;

(b) a business office;

(c) a cold storage warehouse; and

(d) a place of assembly.

(3) The zoning requirements for the Serviced Industrial (MS) Zone set out in section 8 of the Zoning By-law apply to the uses permitted under subsection (2), with the following exceptions:

1. The front yard setback is 6 metres for any front lot line, except for any front lot line for a lot containing a residential zone or a residential use, for which the front yard setback is 15 metres.

2. The rear yard setback is 6 metres.

3. The exterior side yard setback is 6 metres for any exterior side lot line.

4. The exterior side yard setback for a lot line containing a residential zone or a residential use is 15 metres.

5. The maximum building height is 20 metres.

6. The minimum number of required parking spaces for all uses is one space per 230 metres of gross floor area.

7. A planting strip of 6 metres in width is required along lot lines abutting a residential zone or a lot containing a residential use.

8. A planting strip of 3 metres in width is required between a storm water management facility and any parking, loading or delivery space.

9. A planting strip is not required abutting an Environmental Protection Zone that has a minimum width of 6 metres.

10. A planting strip of 1.5 metres in width is required along all other interior side lot lines.

11. A planting strip of 6 metres in width is required along all other street lines.

12. Section 5.2.21.2 of the Zoning By-law does not apply.

13. Footnote 24 for the Serviced Industrial (MS) Zone in the Zoning By-law does not apply.

## Environmental Protection Zone

**5.** (1) This section applies to the lands located in the area shown as the Environmental Protection Zone on the map referred to in section 2.

(2) Every use of land and every erection, location or use of any building or structure is prohibited on the lands referred to in subsection (1), except for the uses permitted within the Environmental Policy Area 1 Zone (EPA1) of the Zoning By-law.

Filed with the Registrar of Regulations
Déposé auprès du registrateur des règlements

SEP 09 2022

Number (O. Reg.)
Numéro (Règl. de l'Ont.) → 483/22

**ONTARIO REGULATION**

made under the

**PLANNING ACT**

**ZONING ORDER - TOWN OF CALEDON, REGIONAL MUNICIPALITY OF PEEL**

**Definition**

**1.** In this Order,

"Zoning By-law" means Zoning By-Law No. 2006-50 of the Town of Caledon.

**Application**

**2.** (1) This Order applies to lands in the Town of Caledon, in the Regional Municipality of Peel, in the Province of Ontario, being the lands outlined in red on a map numbered 314 and filed at the Toronto office of the Ministry of Municipal Affairs and Housing located at 777 Bay Street.

(2) For the purposes of this Order, the side yard of any building abutting a property line adjacent to a public road shall be considered an exterior side yard.

**Prestige Industrial Zone**

**3.** (1) This section applies to the lands located in the area shown as the Prestige Industrial Zone on the map referred to in subsection 2 (1).

(2) Every use of land and every erection, location or use of any building or structure is prohibited on the lands referred to in subsection (1), except for,

(a) the uses permitted in the Prestige Industrial (MP) Zone in the Zoning By-law;

(b) cold storage warehouses;

(c) accessory open storage areas;

iv. any portion of an interior side lot line that abuts a residential use, and

v. each lot line of an interior side yard.

15. The landscaped area may include a surfaced walk, a surfaced patio, a stormwater management pond and a naturalized area, but must not include any driveway or vehicular access ramp, curb, retaining wall, parking area, delivery space or loading space.

16. The minimum parking space setback is 6 metres from any front lot line and 3 metres from any other lot line.

17. The maximum net floor area of a factory outlet is 20 per cent of the net floor area of the industrial facility to which it is accessory.

18. The maximum net floor area of a sales display area associated with a wholesale warehouse is 33 per cent of the total net floor area.

19. For the purposes of calculating the lot area,

i. the lands described in subsection 2 (1) shall be considered a single lot, and

ii. public roads and public lands shall not be included in the lot area calculation.

20. For the purposes of calculating the building area, the gross floor area is to be divided by the lot area, excluding any rooftop mechanical structures.

21. The maximum entrance width is 25 metres.

22. Despite the requirements set out in section 5.2.3 of the Zoning By-law, the parking requirements for a warehouse use are one space per 230 square metres of gross floor area.

23. Section 5.2.19 of the Zoning By-law does not apply to the lands described in subsection 2 (1).

24. Despite paragraph 23, where loading and delivery parking areas are illuminated, no part of the lighting fixture shall be more than 14 metres above grade.

(2) The zoning requirements for the open storage of goods and materials are as follows:

1. The storage of goods and materials must not exceed 25 per cent of the lot area.