

**TOWN OF CALEDON  
PLANNING  
RECEIVED**

**April 14, 2023**

**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.  
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TORONTO, ON M5B 1M4**

**ORIGINAL: JUNE 2021  
UPDATE 1: DECEMBER 2021  
UPDATE 2: APRIL 2023**

**CFCA FILE NO. 2022-5842**

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Revision Number	Date	Comments
Rev.0	June 2021	Issued for 1 <sup>st</sup> Submission
Rev.1	December 2021	Updated and issued for 2 <sup>nd</sup> Submission
Rev.2	April 2023	Updated and issued for 3 <sup>rd</sup> Submission



## Executive Summary

C.F. Crozier & Associates Inc. (Crozier) was retained by Tullamore Industrial GP Limited to undertake a Transportation Impact Study in support of the planning applications for the development of Tullamore Lands, situated at 0 & 12245 Torbram Road in the Town of Caledon. The development lands encompass a total approximate area of 502 acres (203 ha) and consists primarily of greenfield area, the proposed project envisions the development of an industrial park.

A Transportation Impact Study (TIS) was previously prepared and submitted in June 2021 based on an older Site Plan, the TIS was updated and issued for resubmission in December 2021. This Transportation Impact Study Update has also been prepared to reflect new post-pandemic turning movement counts and the inclusion of additional lands within the proposed Draft Plan of Subdivision in addition to addressing the Town and Region's comments dated January 17, 2022, and December 8, 2022. The report has been prepared in accordance with the established Terms of References received from the Town and Region on December 16, 2022, and December 2, 2022, respectively.

The Transportation Study analyzes the following existing intersections:

- External Road Network
  - Torbram Road at Old School Road
  - Mayfield Road at Torbram Road
  - Mayfield Road at Street "B"
  - Mayfield Road at Airport Road
  - Airport Road at Davis Lane/ Perdue Crescent
  - Airport Road at 12333 Airport Road/Street "A"
- Internal Road Network
  - Torbram Road at Street "C"
  - Torbram Road at Site Access 1
  - Torbram Road at Site Access 2
  - Street "B" & Street "A"
  - Street "B" & Street "C"

The intersection of Airport Road with Mayfield Road is currently operating at LOS "C" during the weekday a.m. and p.m. peak hours. The intersection's maximum control delay is 24.0 seconds and 31.3 seconds in the weekday a.m. and p.m. peak hours respectively. Furthermore, no queuing or capacity constraints are forecast at the roundabout.

The remaining signalized intersections of Mayfield Road at Torbram Road, and Airport Road at 12333 Airport Road/Street "A" are currently operating acceptably with LOS "C" or better during the a.m. and p.m. peak hours. Again, no queuing or capacity constraints are forecast at the roundabout.

The unsignalized intersection of Airport Road at Perdue Court/Davis Lane currently operates at LOS "F". While the volumes may not warrant signalization, it should be strongly considered in the future to address the long delays.

As per comments by the Town of Caledon, an industry standard growth rate of 2.0% per annum was applied to Town Collector roads (Torbram Road and Old School Road) beyond the existing condition year. It is noted that growth is not required to be applied to local roads.

The remaining Regional Roads (Airport Road and Mayfield Road) were grown according to growth forecasts in coordination with the Region. However, no forecasts for Regional roadways were available in the horizons beyond 2031. As a result, reasonable growth rates were assumed for the Regional Roads beyond the 2031 horizon until 2036.

The growth rates applied for all roadways were generally consistent with the approved Block 48-2 TIS. The growth rates used are summarized in **Table E1**.

**Table E1: Background Growth Rates**

Corridor	Growth Rate	
	2022-2031	2031-2036
Airport Road (Regional Road 7)	1%	
Mayfield Road (Regional Road 14)	5%	2%
Torbram Road	2%	
Perdue Court/Davis Lane	0%	
Old School Road	2%	

A 2% growth rate was applied to Mayfield Road traffic volumes after the 2031 horizon since the 5% per annum growth rate is not expected to be sustained over a 15-year period especially after accounting for all the background traffic.

As a result of the significant growth expected in the area, the Region, as well as the approved Block 48-2 TIS, has identified and recommended several future background roadway improvements in the study area to be accounted for within specific horizon years, a number of the associated improvements recommended in Block 48-2 and per the Region's Transportation Master Plan have been implemented. However, additional planned improvements associated with the buildout of Block 48-2 are still expected, such as the 1.0 km long widening of Airport Road 1.0 km north of Mayfield Road.

The improvements are summarized in **Table E2** below.

**Table E2: Future Background Roadway Improvements (Capital Projects)**

Roadway	Segment / Intersection	Improvement	Timeline	Source
Mayfield Road	Bramalea Road to Airport Road (RR 7)	Widening from two (2) lanes to six (6) lanes	Completed <sup>1</sup> (2022)	Region of Peel 2021 Budget / Region of Peel Transportation Master Plan
	Airport Road (RR 7) to The Gore Road (RR 8)	Widening from two (2) lanes to five (5) lanes	2023	
	Airport Road (RR 7) to Clarkway Drive	Widening from five (5) lanes to six (6) lanes	2026-2031	
Airport Road	1 km North of Mayfield Road (RR 14) to King Street (RR 9)	Widening from two (2) lanes to five (5) lanes	2024	Region of Peel 2021 Budget / Region of Peel Transportation Master Plan
	Airport Road (RR 7) and King Street	Traffic calming measures: Implement Roundabout	2024	Region of Peel Environmental Study Report (October 2015)
	Airport Road (RR 7) and Healey Road / Old School Road	Traffic calming measures: Implement Roundabout	2024	

Note 1: the widening of Mayfield Road from Bramalea Road to Airport Road was included in this analysis as the base condition.

**Appendix J** contains information regarding the planned and recommended background roadway improvements.

Intersection analysis of the ultimate 2036 future background traffic volumes indicate the boundary road network will continue to operate at "D" or better with the exception of Airport Road at Davis Lane/ Perdue Crescent. The maximum volume-to-capacity ratio of 1.05 was observed for westbound left movement for Mayfield Road at Torbram Road, the intersection is operating with a maximum control delay of 41.8 seconds or less.

The proposed industrial warehouse development is forecasted to generate approximately 719 and 737 total two-way passenger car trips during the weekday a.m. and p.m. peak hours, respectively, and approximately 179 and 186 total two-way heavy truck trips during the weekday a.m. and p.m. peak hours, respectively.

Analysis of 2026, 2031 and 2036 future total traffic operations indicate that the addition of site traffic to boundary road network is expected to have a minor impact on traffic delay and queues when compared to 2026, 2031 and 2036 future background traffic operations.

The signalized intersection of Airport Road and Mayfield Road is expected to operate at a level of service (LOS) "D" during the weekday a.m. and p.m. peak hours. Compared to the future background conditions, site generated traffic is expected to increase the control delay by 5.9s and 6.1s during the weekday a.m. and p.m. peak periods, respectively. From an overall perspective, site-generated traffic is not expected to materially impact the main intersection of Mayfield Road and Airport Road. The maximum volume-to-capacity ratios for individual movements are 0.98 (EBL) and 1.01 (NBL) in the weekday a.m. and p.m. peak hours, respectively. These ratios indicate that the intersection is expected to operate at capacity during the weekday a.m. and p.m. peak hours.

The proposed signalized site access to Airport Road is expected to operate at LOS "A" and "B" in the weekday a.m. and p.m. peak hours, respectively.

The proposed signalized site access to Mayfield Road is expected to operate at LOS "D" and "B" in the weekday a.m. and p.m. peak hours, respectively.

The remaining proposed unsignalized site accesses are expected to operate at LOS "B" or better the weekday a.m. and p.m. peak hours.

### **Summary of Recommended Improvements**

In addition to the background improvements proposed in the road network as summarized in **Table E2**, the following improvements are recommended for consideration at the noted intersections to accommodate site generated traffic.

- **Airport Road at 12333 Airport Road/Street "A" (Signalized Access)**
  - Construct a northbound left turn lane with at least 80m storage
  - Construct an eastbound left turn lane with at least 65m of storage
  - Construct a westbound left turn lane with at least 50m of storage
- **Mayfield Road at Street "B" (Signalized Access)**
  - Construct an eastbound left turn lane with at least 95m of storage
  - Construct a westbound right turn lane with 45m of storage. This length is proposed to accommodate projected queues and potential LCVs
  - Construct a southbound left turn lane with at least 45m of storage. This length is proposed to accommodate projected queues and potential LCVs
- **Torbram Road and Street "C" (Unsignalized Access)**
  - Construct a westbound left turn lane with 15m of storage
- **Internal Road Network**
  - Sidewalks are recommended to be provided on both sides of all internal roadways
  - Thought not warranted from a traffic control perspective, All-Way Stop Controls are recommended to provide safe pedestrian crossings at the internal collector road intersections of:
    - Street "B" and Street "A"
    - Street "B" and Street "C"
  - Subject Development will adopt an urban cross section for all three internal collector roadways, Street "A", Street "B", and Street "C". This cross section proposes two 3.5m curb lanes, a 5.0m two-way left turn lane, and 3.0m multiuse pathways (MUPs) on both sides of the roadway. The MUPs will also be separated from the roadway by 3.0m boulevards. This cross section supports all modes of transportation.

- **Airport Road at Davis Lane/ Perdue Crescent**

- Consider signalization of the intersection to reduce minor street left-turn delays. It is noted that the long delays are generally associated with background traffic volumes and not as a result of the site traffic
- Increase Westbound left turn lane to 45m storage (5m increase from future background)

- **Mayfield Road at Torbram Road**

- Eastbound left turn lane with 175m storage (30m increase from Future Background)
- Westbound left turn lane with 230m storage (120m increase from Future Background)

- **Mayfield Road at Airport Road**

- Eastbound right turn lane with 85m storage (5m increase from Future Background)
- Westbound left turn lane with 290m storage (can be accommodated as part of 2026-2031 road widening, 105m increase from Future Background)
- Westbound right turn lane with 180m storage (can be accommodated as part of 2026-2031 road widening, 35m increase from Future Background)
- Southbound left turn lane with 135m storage (35m increase from Existing & Future Background)
- Implement a protected WBL turn phase in both peak hours and optimize the signal timing. This includes reducing the pedestrian walk times to 3 seconds, the pedestrian do not walk times remain unchanged from existing.

- **Mayfield Road Corridor**

- Implement coordination of the Mayfield Road corridor from Torbram Road to Airport Road including cycle length increases throughout the corridor to 120 seconds and 135 seconds in the a.m. and p.m. peak hours, respectively to match the Airport Road and Mayfield Road intersection. Recommended for Future Background conditions as well.

- **Torbram Road Corridor**

- It is understood that the Town has additional considerations for the ultimate buildout of Torbram Road as either a two-lane or four-lane urban cross section. The Town's Official Plan indicates Torbram will be a Town Arterial Road with a 30m ROW, as such, this study has assumed a two-lane urban cross section to ensure a conservative assessment until additional details are available. The details of the ultimate ROW considerations, and scheduling of this roadway will be subject to the completion of the ongoing Multimodal Transportation Master Plan currently being undertaken by the Town. Relevant excerpts from the Town's Official Plan can be found in **Appendix N.**

- **Transit Routes**

- The site's orientation offers opportunities for a bus loop route internal to the site for existing transit routes (e.g., Brampton Transit Route 30), as is similarly existing with the industrial development east of Airport Road (12333 Airport Road). Further discussions with the transit agencies are recommended to identify and plan for future transit routes within the site.
- It is also recommended that bus stops adjacent to the internal intersections Street "B" at Street "A" and Street "B" at Street "C" be projected for, to permit installation when transit routes are finalized. Additionally, in the interim condition a bus stop should be provided at the southwest corner of the intersection of Airport Road at Street "B" to provide connectivity to the existing Brampton Transit Route 30 without modification the route required as the current route services the properties at 12333 Airport Road and can service the Subject Lands as it turns left onto Airport Road before continuing south.
- Any proposed bus stops should be located within 300-400m walking distance of principal entrances to each building. As Street "B" is the main north-south spinal road servicing the developments, it should be adequately equipped to provide bus stops spaced less than 400m away from all building entrances with mid-block bus stops provided as necessary.

- **Proposed and Recommended Mobility Network**

- Per discussion with the Town of Caledon, a network of continuous collector roadways is preferred as the Town looks to establish a collector road network. A potential collector roadway network beyond the subject lands is capable of meeting the objectives set out by the Town.
- It is re-iterated that any visualization of a potential road network beyond the development proposal represents a potential road network that could be established as part of future block plan, secondary plan or LOG work and is not intended to represent a specific proposal of collector road alignments through adjacent lands. A future secondary plan or LOG work would be required to establish a wider transportation network.
- The development will adopt a 26m ROW urban cross section for the internal collector roadways including a 3.0m multi-use path on both sides of the roadway. This cross-section can adequately support future transit along the internal roadways and facilitate safe and connected active transportation in the area.

- **Transportation Demand Management Strategies**

- A number of TDM Strategies have been recommended for consideration at the overall development lands and future Site Plan Application level including:
  - Protect for future transit routes along the internal collector network and potential bus stop locations at the internal collector intersections
- Encourage bicycle parking during the future development of site plans
- Encourage off-peak shift changes to reduce automobile traffic demand during the roadway peak hours

- Encourage implementation of EV charging during the Site Plan development process
- Encourage future tenants to join Smart Commute
- Encourage implementation of priority carpool spaces near building entrances etc.

The proposed development can be supported from a traffic operations perspective with the recommended improvements as the site-generated traffic is not expected have a material effect on the operations of the existing roadway network. The internal roadways can facilitate future transit routes, and coordination with transit agencies are recommended to plan and protect for the implementation of future transit services internal to the site.

Furthermore, the sensitivity analysis indicates that the widening of Torbram Road is not required to support full buildout of the development lands. Specifically, the full buildout of the lands can be supported prior to the widening of Torbram Road, with the recommendations noted below on the Airport Road and Torbram Road intersections.

A number of TDM opportunities including transit implementation, provision of priority carpool parking, Smart Commute integration and promotion, and bicycle parking should be explored and further refined through subsequent submissions.

The site's parking and loading supply also satisfy the Town's Zoning By-law requirements.

The analysis contained within this report was prepared using the information received from the proponent, the most recent Draft Plan prepared by Turner Fleisher Architects Inc. dated April 3, 2023, as well as the Site Plan prepared by Turner Fleisher Architects Inc. dated March 24, 2023. Any minor changes to the Draft Plan or the Site Plan are not expected to affect the conclusions contained within this report.

In conclusion, the proposed industrial development at Tullamore Industrial lands in the town of Caledon, can be supported from a transportation operations and safety perspective.

## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Background .....	1
1.2	Development Proposal .....	1
<b>2.0</b>	<b>EXISTING CONDITIONS.....</b>	<b>4</b>
2.1	Development Lands .....	4
2.2	Study Road Network .....	4
2.3	Public Transit .....	8
2.4	Traffic Data .....	8
2.5	Traffic Modeling .....	10
2.6	Intersection Operations .....	10
2.6.1	Traffic Signal Warrant Assessment - Airport Road at Perdue Court/Davis Lane .....	12
<b>3.0</b>	<b>FUTURE BACKGROUND CONDITIONS.....</b>	<b>12</b>
3.1	Study Horizons.....	12
3.2	Background Developments .....	12
3.2.1	2022 “Existing” Study Horizon .....	13
3.2.2	2026 - 2036 Study Horizons .....	13
3.3	Traffic Growth Rates .....	17
3.4	Future Roadway Improvements .....	17
3.4.1	GTA West Corridor (Highway 413) .....	22
3.5	Intersection Modelling .....	23
3.6	Intersection Operations .....	23
3.7	Summary of Recommended Improvements to Accommodate Background Growth.....	29
3.7.1	Torbram Road Widening .....	30
<b>4.0</b>	<b>SITE GENERATED TRAFFIC .....</b>	<b>30</b>
4.1	Division of Sites .....	30
4.2	Trip Generation .....	32
4.3	Trip Distribution and Assignment .....	34
4.3.1	Passenger Cars .....	34
4.3.2	Passenger Trips.....	34
4.3.3	Heavy Trucks .....	36
<b>5.0</b>	<b>TOTAL TRAFFIC CONDITIONS .....</b>	<b>40</b>
5.1	Intersection Operations .....	40
5.1.1	Traffic Signal Warrant Assessment – Mayfield Road at Street “B” .....	53
5.1.2	Traffic Signal Warrant Assessment – Torbram Road at Street “C” .....	53
5.1.3	Auxiliary Right and Left-Turn Lane Analysis – Unsignalized Torbram Road Intersections .....	53
5.2	Torbram Road Sensitivity Analysis .....	53
5.3	Summary of Recommended Improvements to Accommodate Site-Generated Traffic....	55



<b>6.0</b>	<b>SIGHT DISTANCE REVIEW .....</b>	<b>57</b>
<b>7.0</b>	<b>PARKING &amp; LOADING REVIEW .....</b>	<b>57</b>
<b>8.0</b>	<b>PROPOSED &amp; POTENTIAL MOBILITY NETWORK .....</b>	<b>59</b>
8.1	Internal Collector Road Network .....	59
8.2	Cross Section Requirements .....	60
8.3	Mobility from a Wider Context .....	61
8.3.1	Considerations for Continuous Collector Roadways .....	61
8.3.2	Collector Roadway Considerations .....	62
8.3.3	Potential Collector Network Opportunities .....	62
8.4	Potential Collector Network Policy Conformance Opportunities .....	64
8.5	Potential Collector Roadway Network Policy Conformance .....	64
<b>9.0</b>	<b>TRANSPORTATION DEMAND MANAGEMENT CONSIDERATIONS .....</b>	<b>65</b>
9.1	Active Transportation Plan .....	65
9.1.1	Active Transportation Future Considerations .....	67
9.2	Future Transit Considerations .....	67
9.3	Electric Vehicle Parking and Carpooling .....	69
9.4	Smart Commute .....	70
9.5	Operational Planning .....	71
9.6	Education/Resources and Wayfinding .....	71
<b>10.0</b>	<b>CONCLUSION AND RECOMMENDATIONS .....</b>	<b>71</b>
10.1	Recommendations .....	73

## LIST OF FIGURES

Figure 1: Draft Plan.....	2
Figure 2: Site Location .....	6
Figure 3: Existing Lane Configurations .....	7
Figure 4: 2022 Existing Traffic Volumes .....	9
Figure 5: 2026 Future Lane Configurations.....	15
Figure 6: Background Development Volumes .....	16
Figure 7: 2026 Future Background Volumes .....	18
Figure 8: 2031 & 2036 Future Lane Configurations .....	19
Figure 9: 2031 Future Background Volumes .....	20
Figure 10: 2036 Future Background Volumes .....	21
Figure 11: Site Generated Traffic Zones .....	31
Figure 12: Total Passenger Trip Assignment.....	37
Figure 13: Total Truck Trip Assignment.....	38
Figure 14: Overall Total Trip Assignment .....	39
Figure 15: 2026 Future Total Traffic Volumes .....	41
Figure 16: 2031 Future Total Traffic Volumes .....	42
Figure 17: 2036 Future Total Traffic Volumes .....	43
Figure 18: Proposed 26m Cross-Section .....	60
Figure 19: Potential Future Town of Caledon Collector Roadway Network.....	63
Figure 20: Proposed Active Transportation Plan .....	66
Figure 21: Potential Transit Route to Service Subject Development.....	68

## LIST OF TABLES

Table 1: Development Proposal.....	1
Table 2: Traffic Data.....	8
Table 3: 2022 Existing Levels of Service.....	11
Table 4: Background Developments.....	13
Table 5: Background Growth Rates.....	17
Table 6: Planned Roadway Improvements (Capital Projects) .....	22
Table 7: Airport Road at Old School Road – Roundabout Geometry .....	23
Table 8: 2026 Future Background Level of Service .....	24
Table 9: 2026 Future Background (Optimized) Level of Service .....	25
Table 10: 2031 Future Background Level of Service .....	26
Table 11: 2036 Future Background Level of Service .....	27
Table 12: Airport Rd./Old School Rd./Healey Rd. Roundabout Future Background Level of Service...	28
Table 13: Transportation Zones .....	30
Table 14: Total Vehicle Trip Generation .....	32
Table 15: Passenger Car Trip Generation .....	33
Table 16: Truck Trip Generation.....	33
Table 17: Trip Distribution .....	34
Table 18: Passenger Trip Zone Directional Distributions .....	35
Table 19: Passenger Trip Inbound and Outbound Total Distributions .....	35
Table 20: 2026 Future Total Level of Service .....	44
Table 21: 2026 Future Total (Optimized) Level of Service.....	46
Table 22: 2031 Future Total Level of Service .....	47
Table 23: 2036 Future Total Level of Service .....	49
Table 24: 2036 Future Total (Optimized) Level of Service.....	51
Table 25: Airport Rd./Old School Rd./Healey Rd. Roundabout Future Total Level of Service .....	52
Table 26: 2036 Future Total Level of Service – Torbram Sensitivity Analysis .....	54
Table 27: Minimum Zoning By-law Parking and Loading Requirements .....	58
Table 28: Internal Collector Road Network .....	59

## 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 Draft Plan, the TIS was updated and issued for resubmission in December 2021. This Transportation Impact Study Update has also been prepared to reflect new post-pandemic turning movement counts and the inclusion of additional lands within the proposed Draft Plan of Subdivision in addition to addressing the Town and Region's comments dated January 17, 2022, and December 8, 2022. The report has been prepared in accordance with the established Terms of References received from the Town and Region on December 16, 2022, and December 2, 2022, respectively.

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 a total of approximately 4,935,000 sq. ft. **Table 1** summarizes the proposed development statistics. The most recent Draft Plan prepared by Turner Fleisher Architects Inc. dated April 3, 2023, has been provided as **Figure 1**. The Site Plan prepared by Turner Fleisher Architects Inc. dated March 24, 2023, showing the building statistics has been provided in **Appendix B**.

**Table 1: Development Proposal**

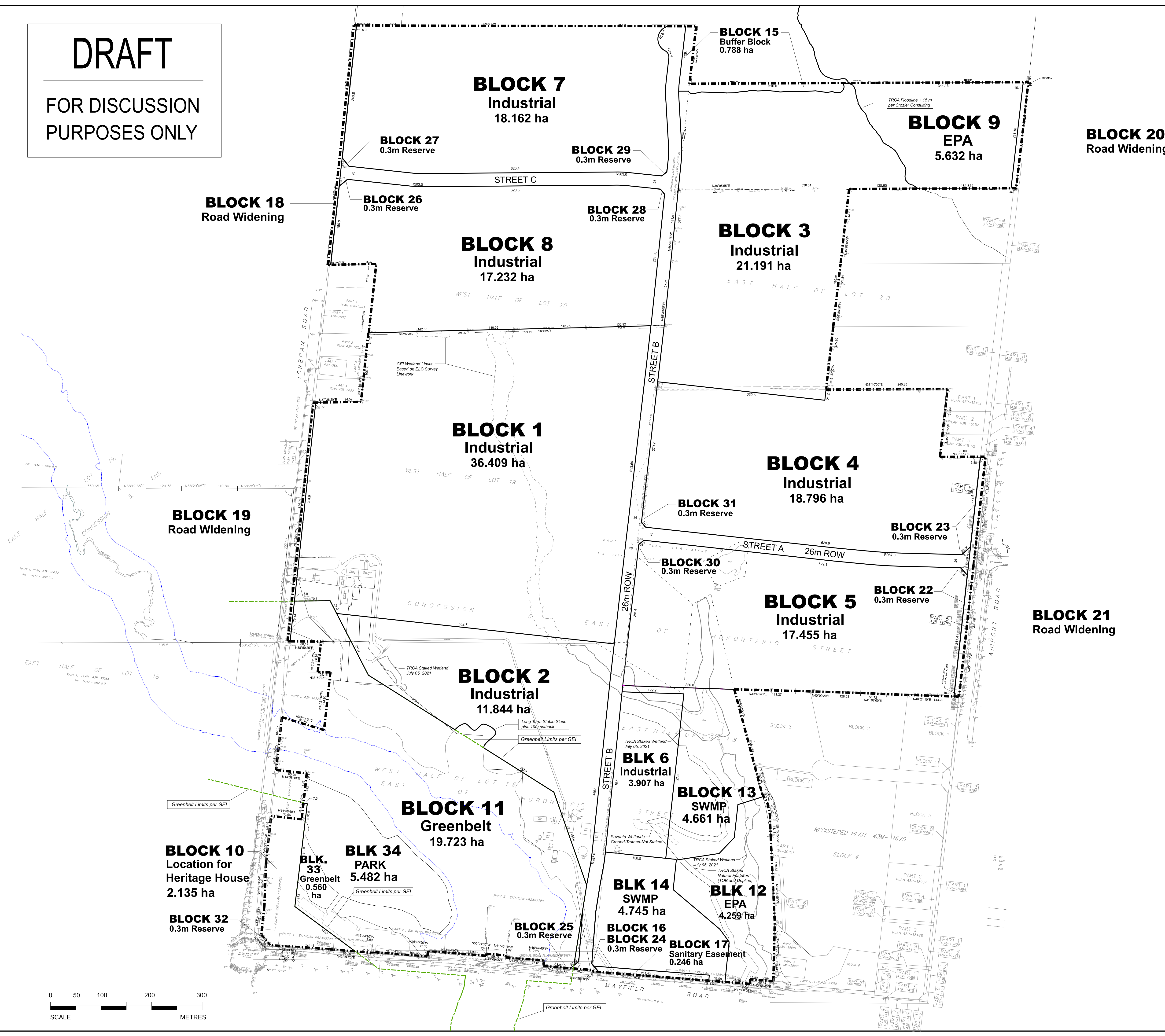
Block	Building(s)	Land Use	Size (SF GFA)	Parking Supply		
				Loading Bays	Car Parking	Trailer Parking
1	Building A	Industrial Warehouse	1,083,946	157	540	505
3	Building C		811,849	81	505	488
4	Building D		1,009,216	209	506	152
7	Building E		1,015,740	100	300	300
8	Building F		797,500	178	528	159
5	Building H		722,768	216	477	236
2	Building I		360,760	74	341	55
2	Building J		99,000	26	140	15
6	Building K		152,640	50	83	27
11	Park Land	Park	590,239	00	214	0
<b>Total</b>			6,053,419	1,091	3,634	1,937

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 7 trips and is therefore considered conservative. The Site Plan statistics shown are from the latest Site Plan (dated, March 24, 2023), provided in **Appendix B**.



DRAFT

FOR DISCUSSION  
PURPOSES ONLY

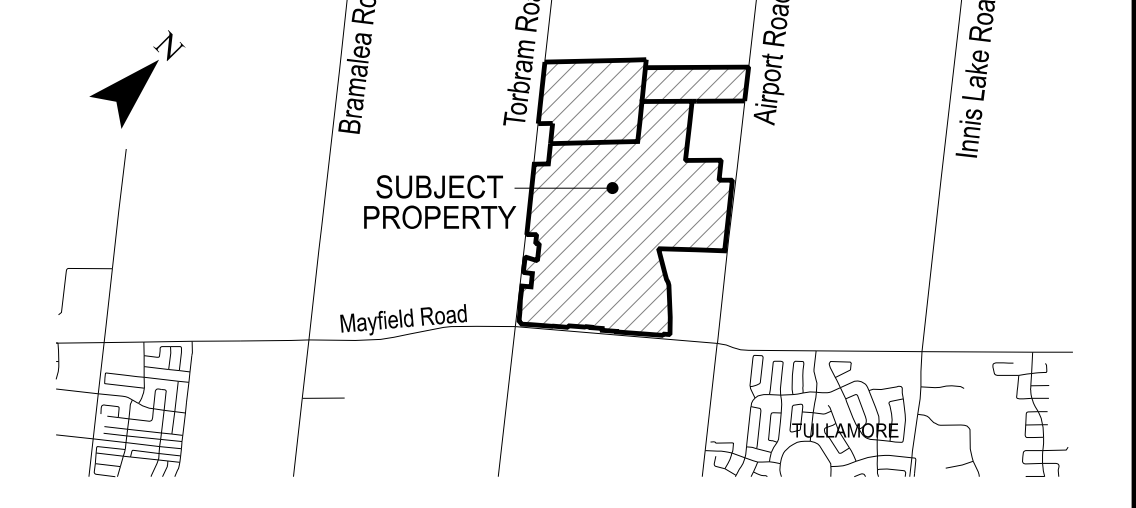


## DRAFT PLAN OF SUBDIVISION

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.

Tullamore Industrial GP Limited  
John McGovern, Senior Vice President, Policy and Planning  
75 Twerton Court, Markham, Ontario L3R 4M8  
TEL: 905.888.1277 x 228  
e: john.mcgovern@tullamoregroup.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.

Name of Surveyor, O.L.P.  
Ontario Land Surveyor  
YOUNG & YOUNG SURVEYING INC.  
2 HOLLAND DRIVE, UNIT 5, BOLTON,  
ONTARIO L7E 1E1  
PHONE: 905.951.6000 FAX: 905.957.4811  
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 29, 2023.  
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 1-8]:	144.996 ha
Future Development Block [Block 10]:	2.135 ha
Greenbelt [Block 11,33]:	20.283 ha
Environmental Protection Area [Block 9,12]:	9.891 ha
SWMP [Block 13-14]:	9.406 ha
Park [Block 34]:	5.482 ha
Buffer Block [Block 15]:	0.788 ha
Block 16:	0.046 ha
Sanitary Easement [Blk 17]:	0.246 ha
Road Widening [Block 18-21]:	1.161 ha
0.3m Reserve [Block 22-32]:	0.035 ha
Roads:	8.445 ha
Total:	202.914 ha

WESTON CONSULTING  
Vaughan: 201 Millway Ave. Suite 19  
Vaughan, Ontario L4K 5K8  
T. 905.738.8060 F. 905.738.6637  
Toronto: 268 Berkeley St.  
Toronto, Ontario M5A 2X1  
T. 416.640.9917 F. 905.738.6637

### REVISIONS LIST

DATE	REVISION
03 APR 2023	Revise block numbering
28 MAR 2023	Revise block limits per Site Plan. Modify Park blk to include parking area & link.
18 JAN 2023	Revise block limits per 2023-01-12 Site Plan & TRCA limits
16 DEC 2022	Revise block limits per Turner Fleischer 2022-12-13 Site Plan
14 DEC 2022	Exclude NE lands - NHS Constraints area. Modify subject lands & Blk 4
13 DEC 2022	Revise per Crozier Street A modifications & 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
12 OCT 2021	Increase channel width, revise street and adjust all blocks accordingly
23-24 AUG 2021	Increased SWMP Revise Street A & B sight triangles
19 JUL 2021	First draft

File Number: 10208  
Drawn By: SM  
Planner: SS  
Scale: 1:3500  
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Drawing Number: D5

### 1.3 Purpose and Scope

The purpose of this study is to evaluate the impacts of the proposed development on the surrounding road network, and to recommend mitigation measures to address the transportation impacts, if warranted.

The study reviews the following key aspects of the proposed development from a transportation engineering perspective:

- Existing, future background, and future total traffic operations on the boundary road network during the weekday a.m. and p.m. peak hours.
- Forecasted trip generation and distribution of the proposed development.
- Mitigation measures to support the proposed development, if required.
- Transportation safety components, including sight distance requirements at the site accesses, access spacing and restrictions, and general safety issues pertaining to road users.
- Feasibility of the proposed site-specific parking rates in lieu of the rates per the Town's By-Laws.
- Transportation Demand Management (TDM) opportunities to reduce single-occupancy vehicle (SOV) trips.

The following intersections were reviewed as part of the study area:

- External Road Network
  - Torbram Road at Old School Road
  - Mayfield Road at Torbram Road
  - Mayfield Road at Street "B"
  - Mayfield Road at Airport Road
  - Airport Road at Davis Lane/ Perdue Crescent
  - Airport Road at 12333 Airport Road/Street "A"
- Internal Road Network
  - Torbram Road at Street "C"
  - Torbram Road at Site Access 1
  - Torbram Road at Site Access 2
  - Street "B" & Street "A"
  - Street "B" & Street "C"



The following horizon timeframes were analyzed in this study, consistent with the Region of Peel Traffic Impact Study guidelines:

- Existing conditions (2022)
- Full-build out horizon (2026) Future Conditions
- Five years horizon (2031) and ten-year horizon (2036) post build-out
- Weekday a.m. and p.m. peak hours

This study has been completed in accordance with the procedures set out by Peel Region's Traffic Impact Study Guidelines, with the associated analysis and findings outlined herein.

The report has been prepared in accordance with the established Terms of References received from the Town and Region on December 16, 2022, and December 2, 2022, respectively. The established Terms of References from the Town and Region are included in **Appendix C**.

## 2.0 Existing Conditions

### 2.1 Development Lands

The development lands encompass a total approximate area of 502 acres (203 ha) and consists primarily of greenfield area. The subject lands are zoned by the Town of Caledon By-Law. The site is located in Zone 4 and classified as Agricultural (A1) and segments of the study lands are zoned as an Environmental Protection Area (EPA2). Relevant zoning map excerpts are included in **Appendix D**.

**Figure 2** illustrates the study area.

### 2.2 Study Road Network

The directional orientation of the study roadways is slightly skewed; however, it is generally understood that to/away from the lake are considered the north/south directions and parallel along the lake are considered the east/west directions. To ensure clarity and consistency in this report, the direction of Airport Road and Torbram Road are designated as north-south roadways while Mayfield Road, Old School Road/Healey Road, and Perdue Court/Davis Lane are designated as east-west roadways.

**Airport Road** (Regional Road 7) is a north-south roadway with a four-lane urban cross-section. Airport Road is under the jurisdiction of Peel Region and is defined as an arterial road. The roadway has a mixed-use path available on one side of the roadway and has a posted speed limit of 80 km/h and 60 km/h north and south of Perdue Court/Davis Lane, respectively.

**Mayfield Road** (Regional Road 14) is an east-west roadway with a four-lane urban cross-section. Mayfield Road is under the jurisdiction of Peel Region and defined as an arterial road. The roadway has a mixed-use road available on one side of the roadway, and has a posted speed limit of 50 km/h.

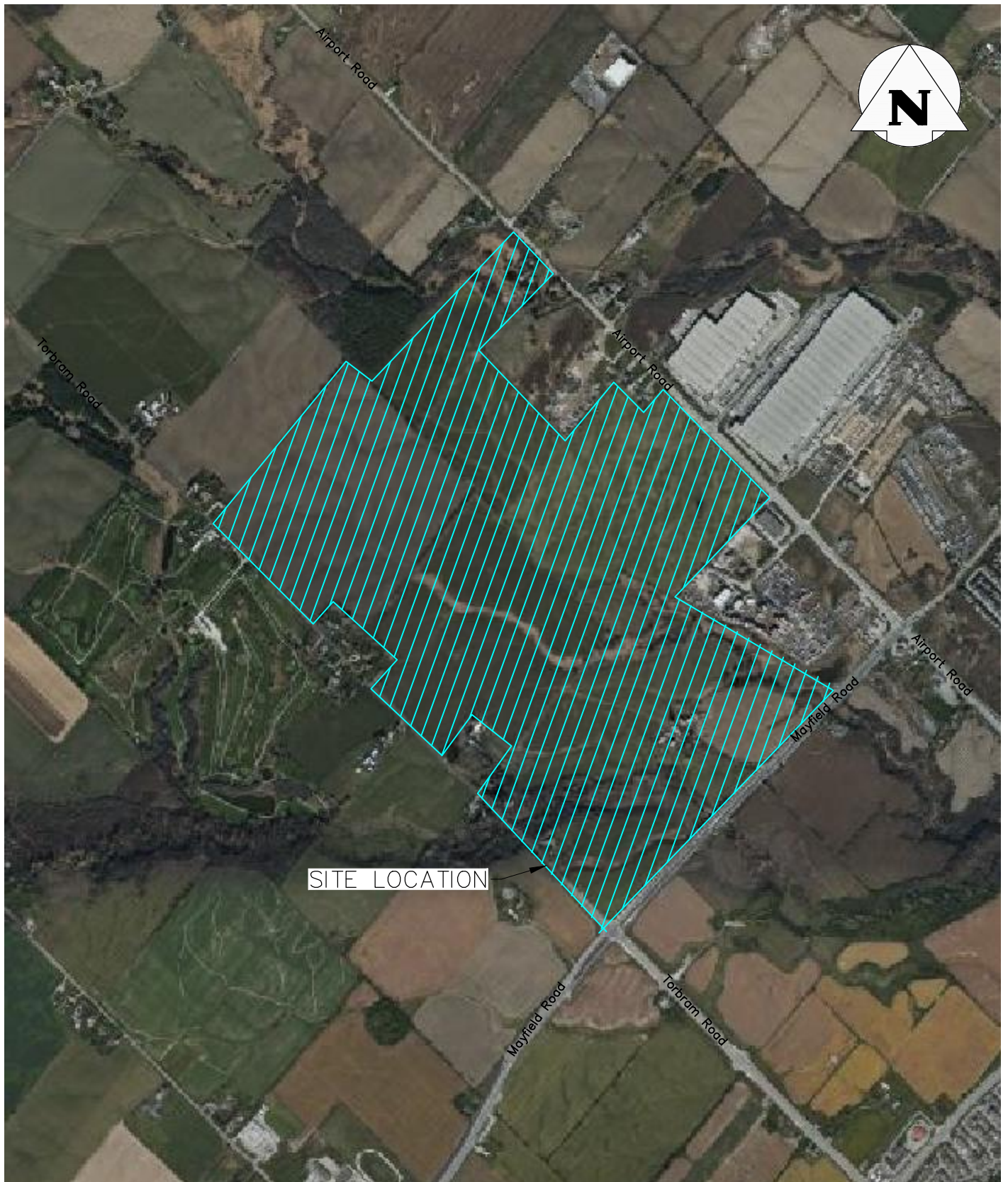
**Torbram Road** is a north-south roadway and is defined as a collector road. Torbram Road is under the jurisdiction of the Town of Caledon and the City of Brampton on the segments north and south of Mayfield Road, respectively. The roadway segment south of Mayfield Road has a four-lane urban cross-section and has a sidewalk and mixed-use path available on either side. The roadway segment north of Mayfield Road has a two-lane rural cross-section and no sidewalks available on either side. The posted speed limit on Torbram Road is 70 km/h throughout the study area.

**Perdue Court/Davis Lane** are east-west roadways, and both are classified as local roads under the jurisdiction of the Town of Caledon. Davis Lane is the roadway segment east of Airport Road and has a two-lane rural cross-section, with no sidewalks available on either side. Perdue Court is the roadway segment west of Airport Road and has a two-lane urban cross-section with a sidewalk available on one side of the road. The speed limit on these roadways is assumed to be 50 km/h.

**Old School Road/Healey Road** is an east-west roadway and is classified as a collector road under the jurisdiction of the Town of Caledon. The road has a two-lane rural cross-section, with no sidewalks available on either side. The posted speed limit on Old School Road is 70 km/h throughout the study area, and the speed limit on Healey Road is assumed to be 70 km/h.

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





TULLAMORE LANDS, 0 & 12245 TORBRAM  
ROAD, TOWN OF CALEDON

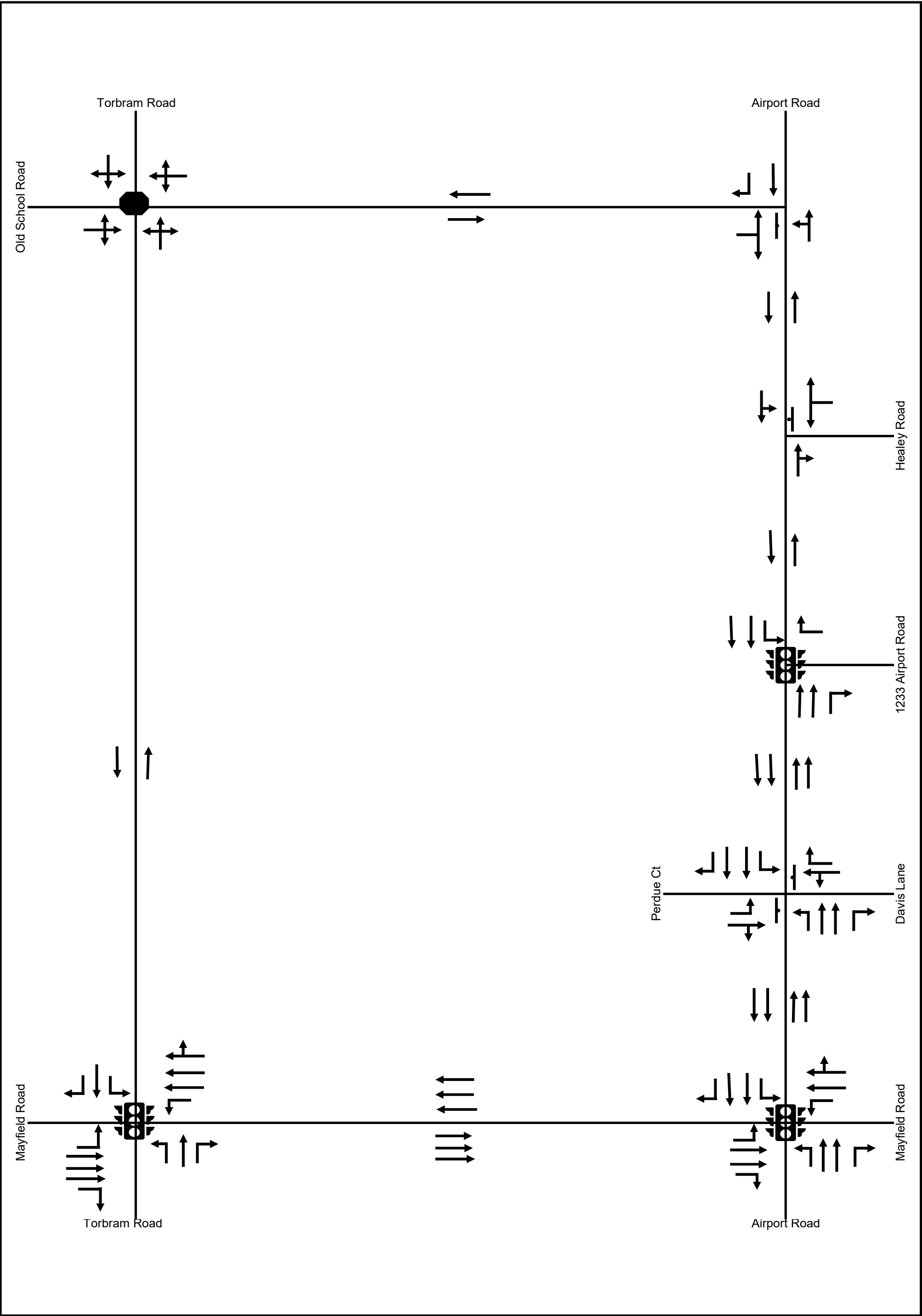
SITE LOCATION



**CROZIER**  
CONSULTING ENGINEERS

211 YONGE STREET  
SUITE 600  
TORONTO, ON M5B 1M4  
416-477-3392 T  
WWW.CFCROZIER.CA

Drawn	I.A.	Design	T.D.S.	Project No.	2022-5842
Date	2023/01/30	Check	M.L.	Scale	N.T.S.
				Dwg.	FIG. 02



Legend

- xx A.M. Peak Hour Traffic Volumes
- (xx) P.M. Peak Hour Traffic Volumes

Tullamore Industrial

Existing Lane Configurations



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Figure 3

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS

## 2.3 Public Transit

The Tullamore Industrial Area is serviced by Brampton Transit Route 30 Airport Road, operating along Airport Road from Westwood Square Terminal to Mayfield Road/AMB Distribution Centre. The route operates on a regular schedule Monday to Sunday, with 6 buses travelling northbound and 6 southbound per day at the stops located adjacent to the study area on Airport Road. The existing stops on Airport Road north of Mayfield Road would provide limited access to the proposed site and would require long walking trips to and from the existing bus stops.

## 2.4 Traffic Data

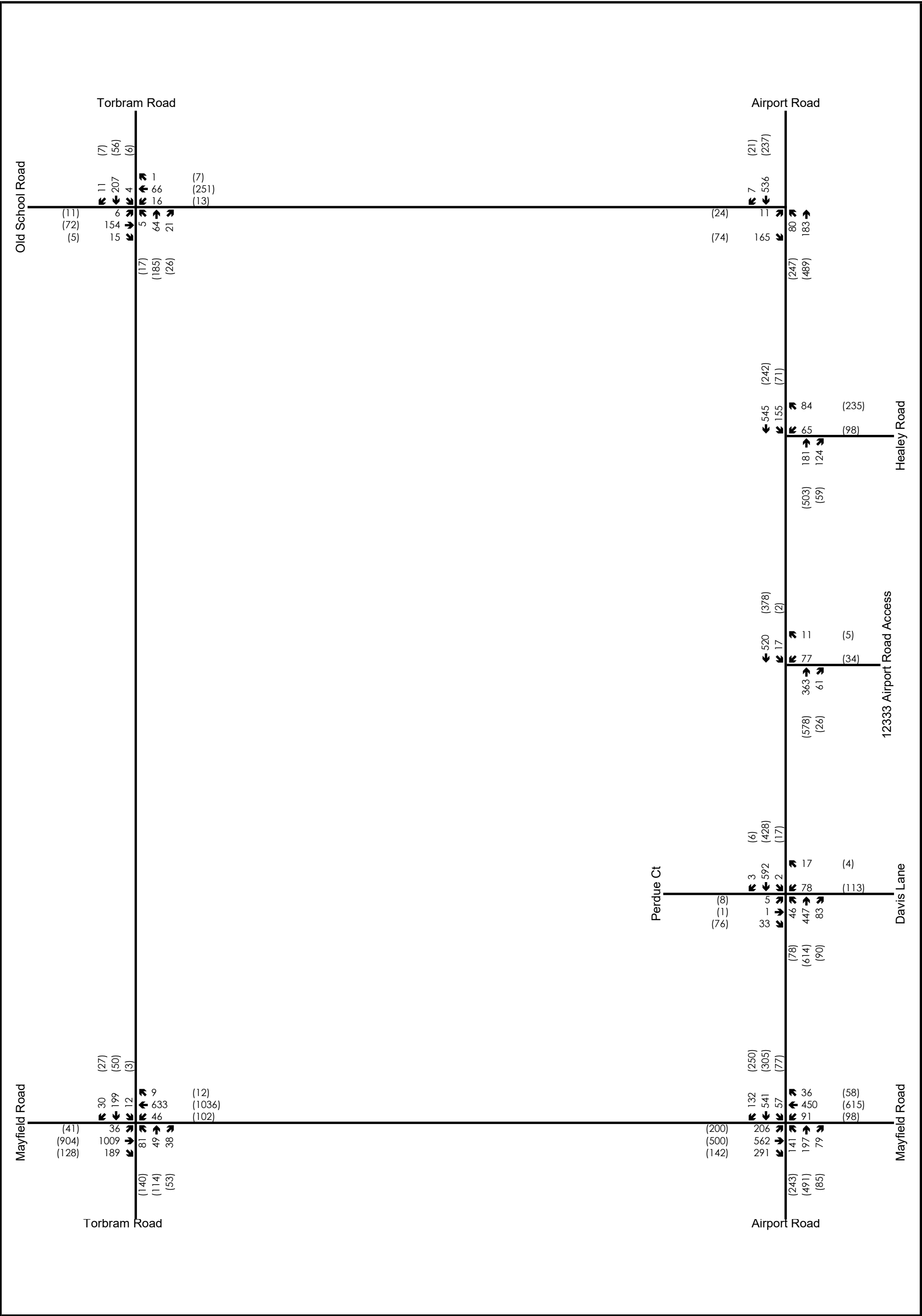
In accordance with the Town and Region Terms of Reference, new turning movement counts for the 2022 were collected at the following intersections by Spectrum Traffic Inc. at the associated timeframes as summarized in **Table 2**.

Signal timing plans for the study intersection were provided by Peel Region staff for modelling purposes. Intersection analysis was conducted utilizing peak hour factors (PHFs) of 1.0 per Region of Peel modelling guidelines.

**Table 2: Traffic Data**

Intersection	TMC Date	Timing Plan Date
Torbram Road at Old School Road	September 13, 2022	N/A
Mayfield Road at Torbram Road	September 13, 2022	June 18, 2021
Mayfield Road at Airport Road	September 13, 2022	June 23, 2021
Airport Road at Davis Lane/Perdue Crescent	September 13, 2022	N/A
Airport Rd & 12333 Airport Rd	September 13, 2022	June 18, 2021
Airport Road at Healey Road	September 13, 2022	N/A
Airport Road at Old School Road	September 13, 2022	N/A

The traffic count data and signal timing plans are provided in **Appendix E**. Existing traffic volumes are illustrated in **Figure 4**.



**Legend**

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

Tullamore Industrial

2022 Existing Traffic Volumes



**Figure 4**

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS

## 2.5 Traffic Modeling

The assessment of intersections is based on the method outlined in the "Highway Capacity Manual, 2000" using Synchro 11 modelling software. Intersections are assessed using the Level of Service (LOS) metric, with ranges of delay designated a letter ranging from "A" to "F". For stop-controlled intersections, a Level of Service "A" or "B" would typically be expected during off-peak hours when there are lower traffic volumes on roadways. Levels of Service "C" to "F" would characteristically be measured during commuter peak hours when greater traffic volumes produce longer travel times. The Level of Service definitions for signalized and stop-controlled intersections is included in **Appendix F**.

Per the Region's modelling guidelines, Peak Hour Factors of 1.0 were used for all horizons. No lost time adjustments or adjustments to saturation flow rates or any other modelling parameters were adopted.

## 2.6 Intersection Operations

The traffic operations at the study intersections were analyzed based on the traffic volumes and signal timing plans as summarized in **Table 2**. Detailed capacity analyses are included in **Appendix G**. The intersection operation was analyzed based on the traffic volumes illustrated in **Figure 4**. **Table 3** outlines the 2022 existing traffic operations.

**Table 3: 2022 Existing Levels of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	9.9 s [A]	None	0.32 (SBLTR)	None
		P.M.	11.1 s [B]	None	0.40 (WBTR)	None
Mayfield Road at Torbram Road	Signal	A.M.	27.0 s [C]	None	0.49 (EBT)	None
		P.M.	26.8 s [C]	None	0.43 (WBTR)	None
Mayfield Road at Airport Road	Signal	A.M.	24.0 s [C]	None	0.60 (EBL)	None
		P.M.	31.3 s [C]	None	0.63 (NBL)	None
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	32.7 s [D]	None	0.38 (WBL)	None
		P.M.	118.2 s [F]	118.2 s [F] (WBL)	0.89 (WBL)	None
Airport Road & 12333 Airport Road/Street "A"	Signal	A.M.	7.8 s [A]	None	0.48 (WBL)	None
		P.M.	4.5 s [A]	None	0.23 (WBL)	None
Airport Road at Healey Road	Stop Control (Minor)	A.M.	28.3 s [D]	None	0.52 (WBLR)	None
		P.M.	62.1 s [F]	62.1 s [F] (WBLR)	0.93 (WBLR)	None
Airport Road at Old School Road	Stop Control (Minor)	A.M.	15.5 s [C]	None	0.34 (EBLR)	None
		P.M.	16.8 s [C]	None	0.24 (EBLR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

All intersections are currently operating acceptably with LOS "C" or better during the weekday a.m. and p.m. peak hours with the exception of Airport Road at Davis Lane/ Perdue Crescent and Airport Road at Healey Road.

The unsignalized intersection of Airport Road at Healey Road is currently operates at LOS "D" and "F" during the weekday a.m. and p.m. peak hours respectively. It is noted that this intersection is to be altered into a roundabout with connections to Old School Road and operations are expected to improve significantly in future horizon years as is discussed in the following sections.

The unsignalized intersection of Airport Road at Perdue Court/Davis Lane currently operates at LOS "D" and "F" during the weekday a.m. and p.m. peak hours respectively. These conditions are due to the stop-controlled conditions, particularly westbound left turn movements intending to travel south on Airport Road. As discussed below, the intersection will likely need to be signalized in the future to address traffic delays to increased traffic on Airport Road.

#### 2.6.1 Traffic Signal Warrant Assessment - Airport Road at Perdue Court/Davis Lane

Traffic signal warrant analysis was conducted using an Ontario Traffic Manual (OTM) Book 12 configured excel sheet based on the average hourly volume approach for the intersection of Airport Road at Perdue Court/Davis Lane.

Based on delays to cross traffic, traffic signals are warranted at the intersection of Airport Road at Perdue Court/Davis Lane under existing conditions. It is recommended that signalization be considered for this intersection to alleviate existing the high levels of delay for minor street movements. Signalization would also increase the safety for left turning vehicles onto Airport Road.

It is noted that Airport Road is to be widened to 4 lanes throughout the study area in 2024 and traffic conditions are expected to improve. Therefore, the intersection of Airport Road and Perdue Court/Davis Lane should be monitored, and signalization should be implemented if warranted.

As discussed in following sections, this study intersection is recommended to be signalized in the future based on this result but has not been modelled as such in this analysis. The intersection serves as an access to two developments not associated with the subject development of this property.

Signal Warrant analysis excerpts are included in **Appendix H**.

### 3.0 **Future Background Conditions**

#### 3.1 **Study Horizons**

Based on the Terms of Reference correspondence included in **Appendix C**, study horizon years of the full build-out (2026), as well as a five-year horizon (2031) and ten-year horizon (2036) post build-out were considered for analysis.

#### 3.2 **Background Developments**

Refer to **Table 4** below for a list of background developments from which traffic volume forecasts were derived to estimate future background traffic volumes.

It is noted that all developments in **Table 4** were initially forecasted to be completed and implemented by 2022. However, a number of the major developments, particularly Block 48-1 and Block 48-2 were only partly built out by the existing 2022 horizon based on a review of aerial imagery. **Section 3.2.1** outlines the methodology of deriving the remaining background assignments for the 2026, 2031 and 2036 horizons.

**Table 4: Background Developments**

No.	Development Address	Proposed Development	Buildout Horizon	Source
1	Block 48-2 Brampton Area 48 Landowners	1,723 single-detached units 240 semi-detached units 1,208 townhouse units 220 Apartment units 9.34 ha District Retail 4.09 ha mixed use 1.0 ha convenience retail 3 Elementary Schools 2 secondary schools 2 Places of Worship	100% Build-out 2026	Block 48-2 TIS (Cole, 2017)
2	Block 48-1 Countryside Villages	1,323 low density residential units 1,324 med-density residential units 11,295 sq. m retail GFA 4 Elementary Schools	50% by 2022 100% by 2026	Block 48-1 TIS (MMM, 2015)
3	Countryside Villages Secondary Plan – Employment Centre	6,080 employees	25% Build-out 2022 Full Build-out 2023	Block 48-1 TIS (MMM, 2015)

### 3.2.1 2022 “Existing” Study Horizon

As of the 2022 existing study horizon, approximately 50% of the Block 48-1 Phase 1 development was built-out and assumed to be occupied based on a review of aerial imagery. The remaining 50% of Block 48-1 was assumed to be completed by the 2026 horizon year.

Additionally, none of Block 48-2 has not been built out based on aerial imagery by the 2022 horizon. The Block 48-2 development is expected to be fully built out by 2026.

Lastly, the Countryside Villages Secondary Plan – Employment Centre was assumed to only be built out 25% by 2022. The remaining 75% of this development would be expected to be built out by 2026.

### 3.2.2 2026 - 2036 Study Horizons

Therefore, the total background assignment for the 2026 horizon comprised of 50% of Block 48-1 site trips, 75% of the Countryside Villages Secondary Plan – Employment Traffic site trips, in addition to site generated traffic associated with the Block 48-2 development.

50% of the site traffic from the Block 48-1 development (extracted from the MMM Report) was subtracted from the volumes from Figure 5-3 of the Cole Report to determine the 2026 background volumes from Block 48-1.

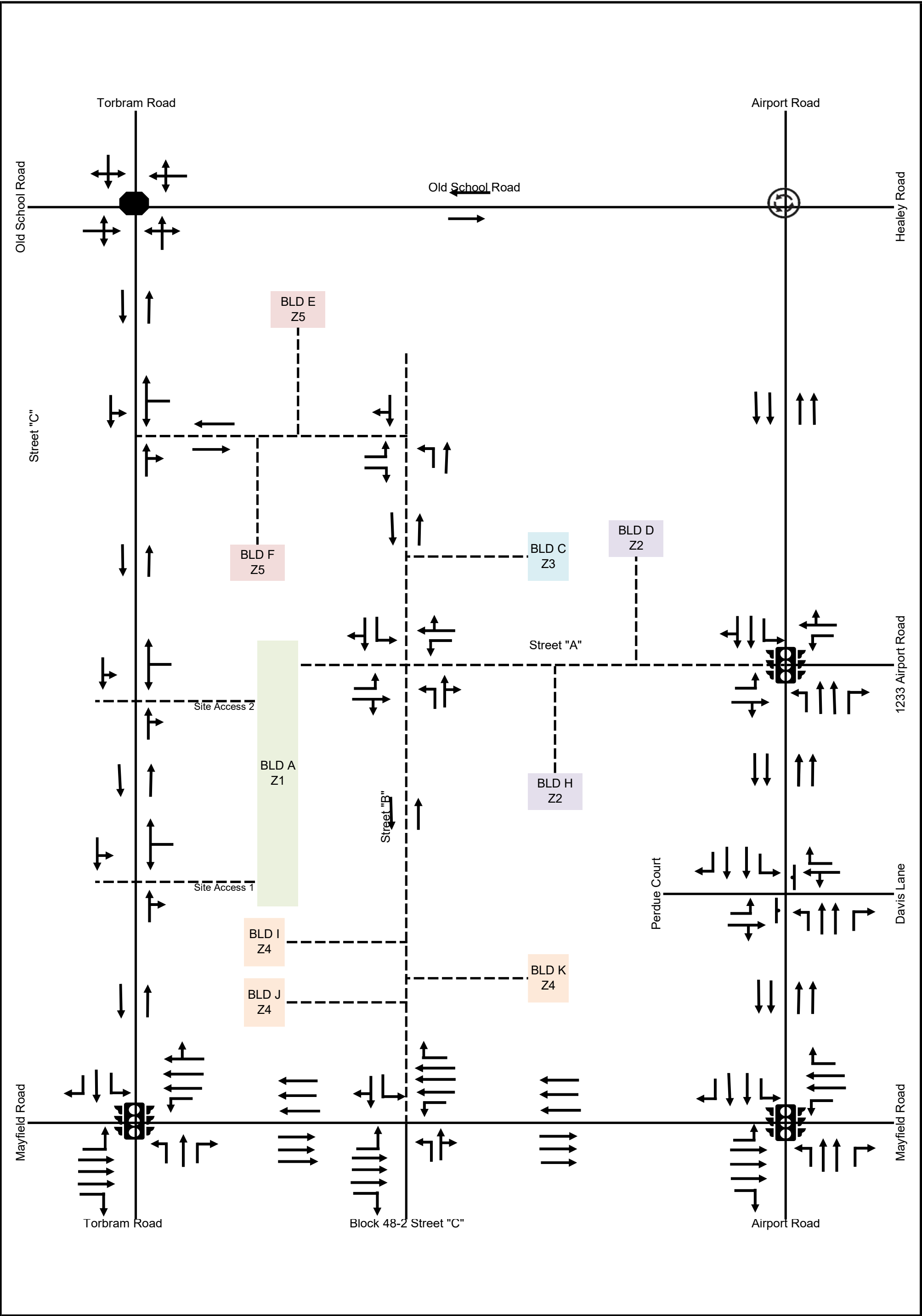


75% of the site traffic from the Countryside Villages Secondary Plan – Employment Traffic was derived by subtracting the 2015 background traffic from the 2020 background traffic in the Block 48-1 TIS (MMM, 2015) and multiplying the volumes by a factor of 1.5. The Block 48-1 TIS (MMM, 2015) provided multiple background development volumes amalgamate into the 2015 horizon years and including 50% of site traffic from Countryside Villages Secondary Plan – Employment Traffic, the 2020 horizon year used the same value and added just the remaining 50% of the Countryside Villages Secondary Plan – Employment Traffic. Therefore, the difference in the two sets of volumes yielded 50% of the background traffic volumes associated with the Countryside Villages Secondary Plan – Employment Traffic. These volumes were then multiplied by a factor of 1.5 to yield 75% of the background traffic volumes associated with the Countryside Villages Secondary Plan – Employment which would be applicable to future horizon years within this analysis.

It is noted that the volumes from the Block 48-1 development presented at the intersection of Mayfield Road at Bramalea Road were assumed to all be through trips going east/west along Mayfield Road in the study area.

The 2026 Future Lane Configurations of the boundary road network are shown in **Figure 5**. The background development volumes are illustrated in and **Figure 6**.

Details on the background developments are included in **Appendix I**.



Legend

- xx A.M. Peak Hour Traffic Volumes
- (xx) P.M. Peak Hour Traffic Volumes
- ⦿ Roundabout (See Appendix K for configuration)

Tullamore Industrial

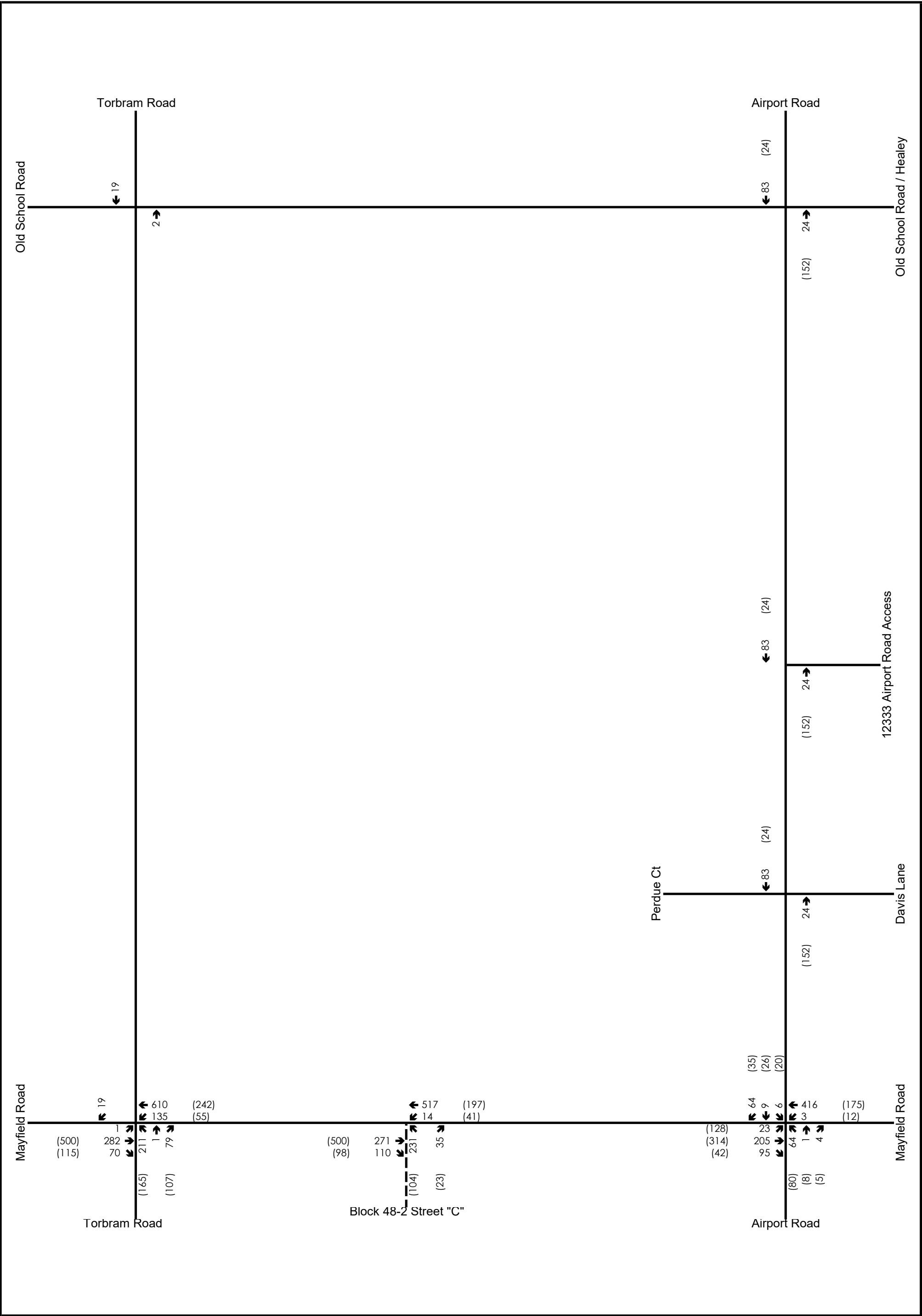
2026 Future Lane Configurations



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Figure 5

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Date. 2023.04.06  
Analyst. TDS



**Legend**

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

**Tullamore Industrial**

**Background Development Volumes**



**Figure 6**

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS

### 3.3 Traffic Growth Rates

As per comments by the Town of Caledon, an industry standard growth rate of 2.0% per annum was applied to Town Collector roads. Growth is not required to be applied to local roads.

Growth rates are extracted from Block 48-2, City's approved Block 48-2 TIS and Sandringham East Plan Traffic Letter Update and are replicated in **Table 5** below:

**Table 5: Background Growth Rates**

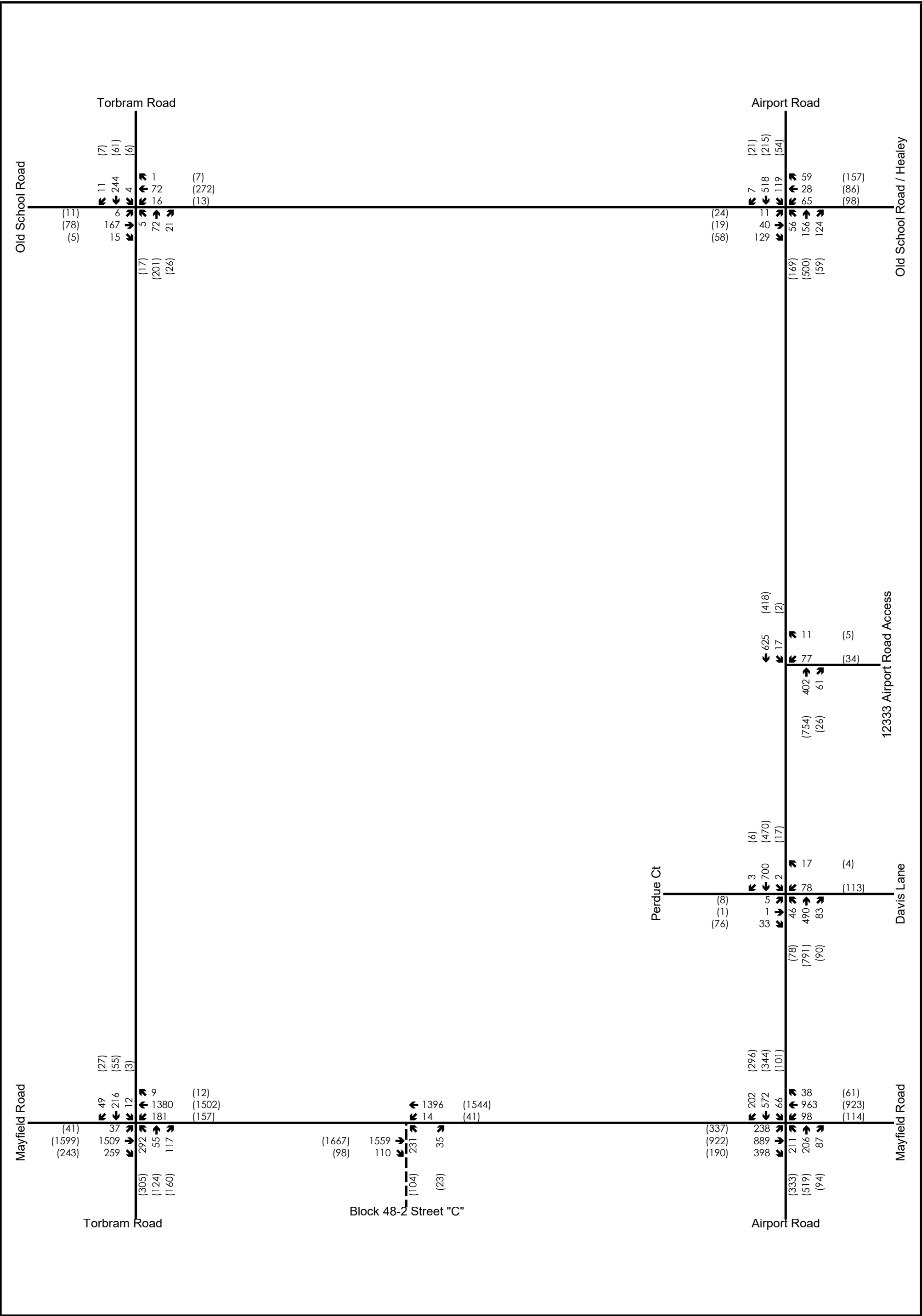
Intersection	Growth Rates	
	2022-2031	2031-2036
Airport Road (Regional Road 7)	1%	
Mayfield Road (Regional Road 14)	5%	2%
Torbram Road	2%	
Perdue Court/Davis Lane	0%	
Old School Road/Healey Road	2%	

Given the high levels of background traffic assigned, a 2% growth rate was applied to Mayfield Road traffic volumes after the 2031 horizon. This was applied as consistent with the Town collector growth rates requested, as a 5% growth rate compounded over a 15-year horizon may result in over-estimates for an extended period.

The 2026, 2031 and 2036 future background traffic volumes are also illustrated in **Figure 7**, **Figure 9** and **Figure 10**, respectively. **Figure 8** summarizes the 2031 & 2036 Future Lane configuration of the boundary road network. Details on background traffic volumes and developments are also included per **Appendix I**.

### 3.4 Future Roadway Improvements

The Region as well as the approved Block 48-2 TIS has identified and recommended several future background roadway improvements in the study area to be accounted for in the in their appropriate horizons. It is noted that with the recent completion of the Mayfield Road widening to a six-lane cross section west Airport Road, a number of the associated improvements recommended in Block 48-2 and per the Region's Transportation Master Plan have been implemented. However, additional planned improvements associated with the buildout of Block 48-2 and Airport Road widening from 1.0 km north of Mayfield Road have also been identified. The improvements are summarized in **Table 6** below.



Legend

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

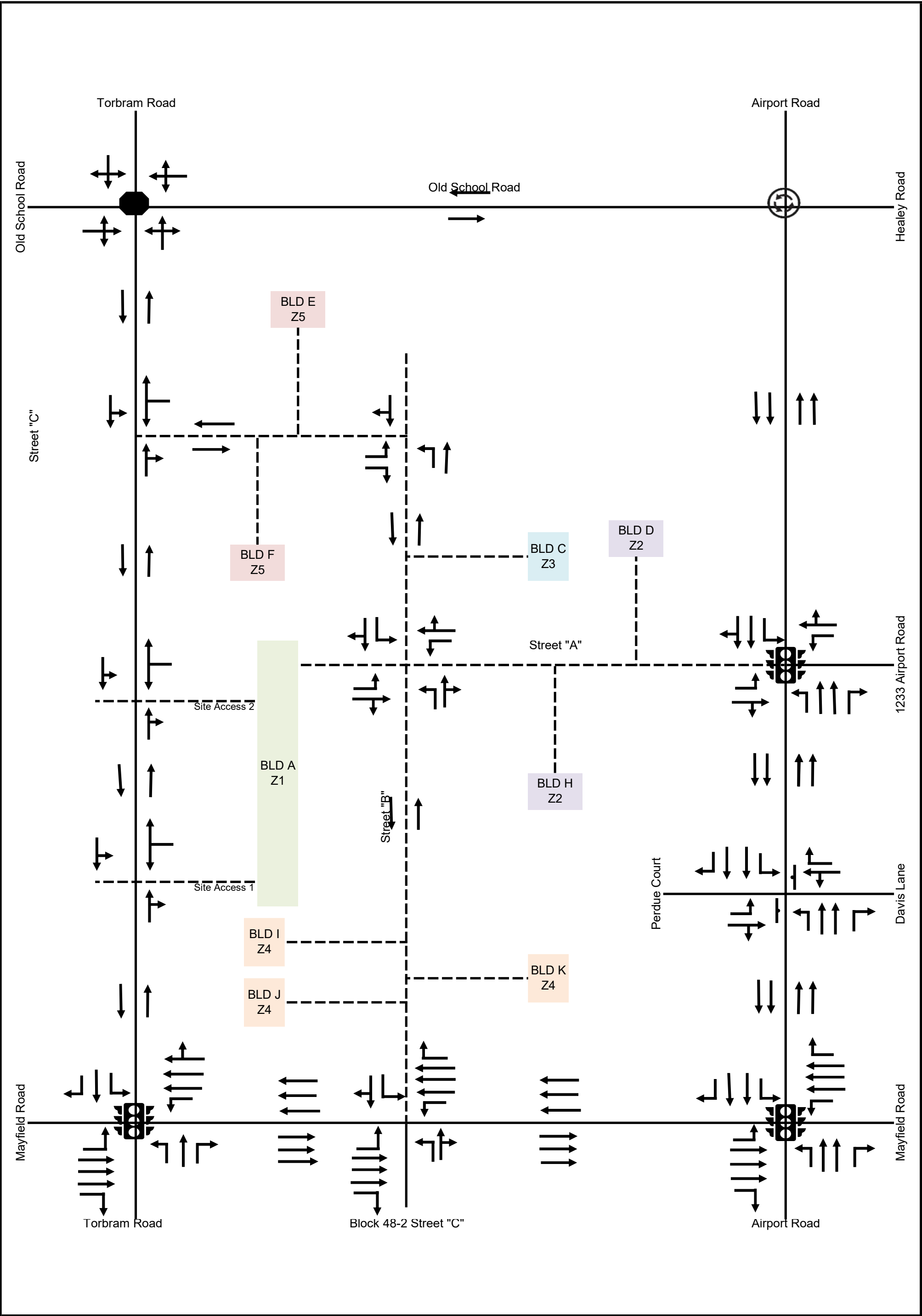
Tullamore Industrial

2026 Future Background Traffic



Figure 7

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



Legend

- xx A.M. Peak Hour Traffic Volumes
- (xx) P.M. Peak Hour Traffic Volumes
- ⦿ Roundabout (See Appendix K for configuration)

Tullamore Industrial

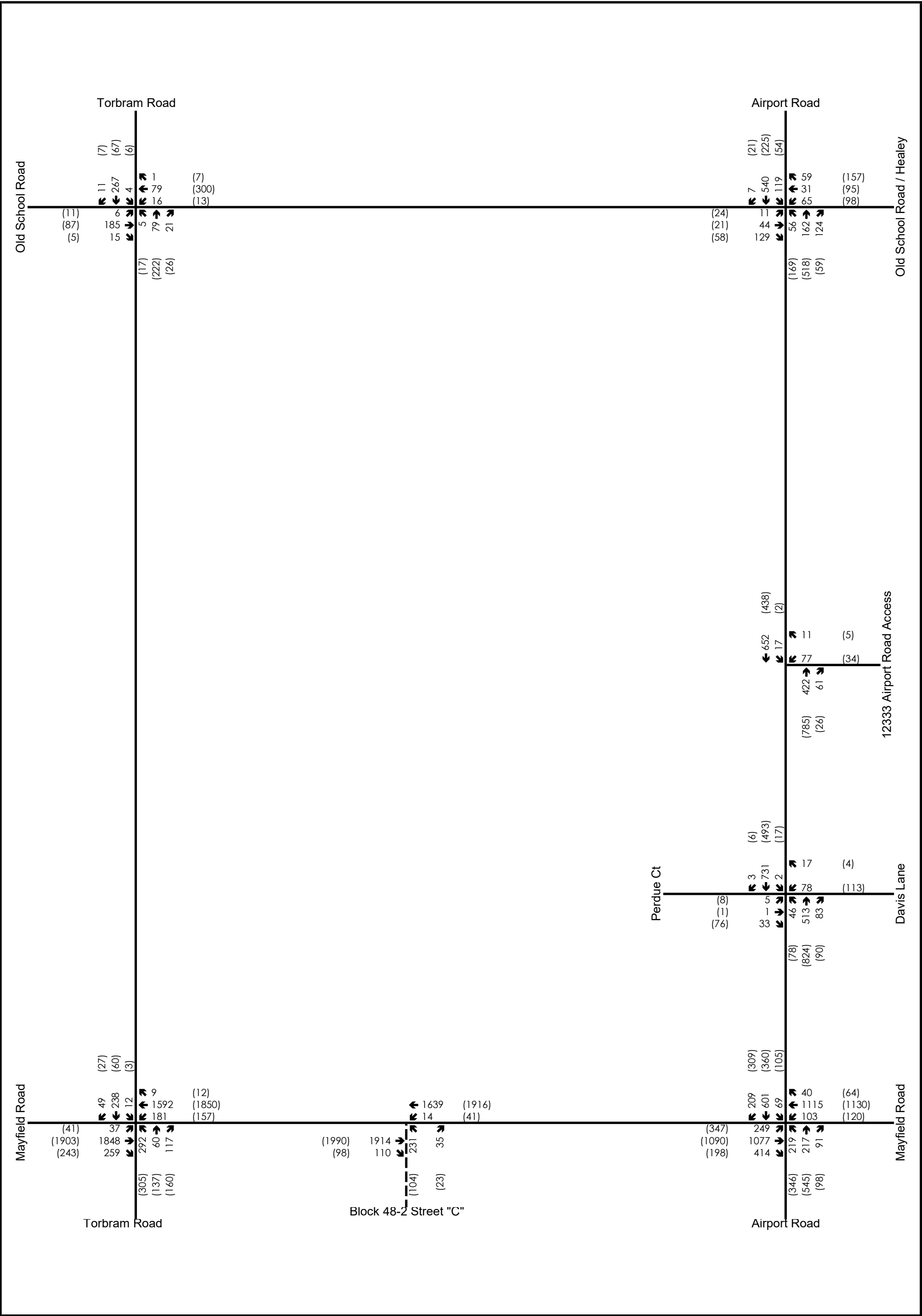
2031 & 2036 Lane Configurations



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Figure 8

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



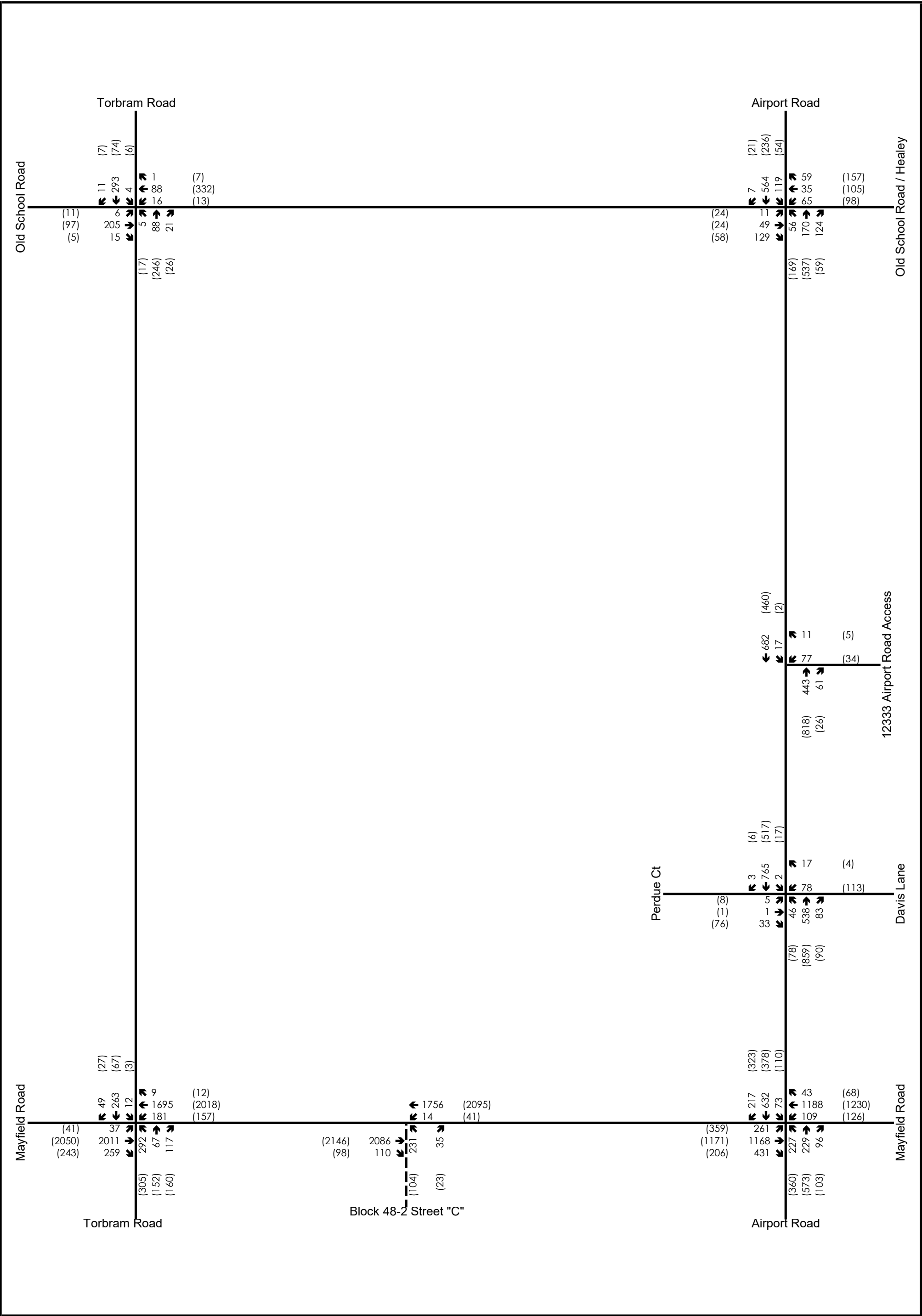
**Legend**  
xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

Tullamore Industrial

2031 Future Background Traffic



**Figure 9**  
Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



Legend

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

Tullamore Industrial

2036 Future Background Traffic



Figure 10

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



**Table 6: Planned Roadway Improvements (Capital Projects)**

Roadway	Segment / Intersection	Improvement	Timeline	Source
Mayfield Road	Bramalea Road to Airport Road (RR 7)	Widening from two (2) lanes to six (6) lanes	Completed <sup>1</sup> (2022)	Region of Peel 2021 Budget / Region of Peel Transportation Master Plan
	Airport Road (RR 7) to The Gore Road (RR 8)	Widening from two (2) lanes to five (5) lanes	2023	
	Airport Road (RR 7) to Clarkway Drive	Widening from five (5) lanes to six (6) lanes	2026-2031	
Airport Road	1 km North of Mayfield Road (RR 14) to King Street (RR 9)	Widening from two (2) lanes to five (5) lanes	2024	Region of Peel Environmental Study Report (October 2015)
	Airport Road (RR 7) and King Street	Traffic calming measures: Implement Roundabout	2024	
	Airport Road (RR 7) and Healey Road / Old School Road	Traffic calming measures: Implement Roundabout	2024	

Note 1: the widening of Mayfield Road from Bramalea Road to Airport Road was included in this analysis as the base condition.

**Appendix J** contains information regarding the planned and recommended background roadway improvements.

### 3.4.1 GTA West Corridor (Highway 413)

Surrounding the study area, the Province of Ontario has plans to develop a GTA West Corridor (also and herein referred to as Highway 413) which would connect Peel, Halton, and York Region. The development of Highway 413 would consist of 400-series highway, a transitway, and potential goods movement priority features.

The implementation of Highway 413 is expected to alleviate existing traffic congestion along the east-west direction, as well as support further population and employment growth within the GTA. Furthermore, the construction of this new highway will provide convenient routing options as an expressway to get to major destinations across the GTA.

The alignment of the future Highway 413 would include several proposed interchanges including with Airport Road north of the site, which would be expected to provide additional connectivity to traffic in the surrounding road network.

The impacts of the implementation of the future Highway 413 with respect to changes in background traffic volumes and trip distribution during the analysis horizon years have not been identified at this time. Moreover, it is understood that the planning for this new connection is still in the early stages and is not expected for completion within the ultimate study horizon. Accordingly, related impacts have not been accounted for in this analysis.

### 3.5 Intersection Modelling

The intersections were modelled per the planned roadway improvements summarized in **Table 6** above. Roundabout analysis at the intersection of Airport Road at Old School Road was completed based on the parameters shown below.

As identified in the Airport Road EA, the intersection of Airport Road and Old School Road is planned for a future roundabout. Similar to the Airport Road EA, the ARCADY model using the ARCADY Junctions 8 analysis software was used to assess the operational performance of the intersection under the future horizon scenarios. The roundabout geometrics inputs used to calibrate the model are outlined in **Table 7**. These geometrics were determined through measurements of the 60% civil design drawings of the Airport Road widening project.

**Table 7: Airport Road at Old School Road – Roundabout Geometry**

Leg/Approach	Approach Road Half-Width (m)	Entry Width (m)	Effective Flare Length (m)	Entry Radius (m)	Inscribed Circle Diameter (m)	Conflict (Entry) Angle (Deg)
Airport Road (North)	7.4	10.0	40.0	30.0	45.0	16.0
Airport Road (South)	7.4	10.0	30.0	29.0	55.0	18.0
Healey Road (East)	7.4	10.0	30.0	24.0	55.0	20.0
Old School Road (West)	3.4	3.4	0.0	31.0	55.0	15.0

Moreover, a y-intercept value of 90% was also used as consistent with the Airport Road EA, which was used to account for the unfamiliarity of roundabouts to motorists in the GTA compared to in the United Kingdom. In subsequent submissions, this intersection along with the Torbram Road at Old School Road intersection will be reviewed.

Relevant Excerpts from the Airport Road EA can be found in **Appendix K**.

### 3.6 Intersection Operations

The future background intersection operations at the study intersections were analyzed using the 2026, 2031 and 2036 future background traffic volumes illustrated previously in **Figure 7**, **Figure 9** and **Figure 10**, respectively.

Due to the various road improvements within the study area as discussed in **Section 4.4**, signal timing plans are expected to change, therefore, optimized signal timings splits were used for analysis in future horizon years following 2022. Furthermore, a protected permissive phase was added for the westbound left turn at Mayfield Road and Airport Road under optimized conditions in the 2026 horizon year and then implemented in all future horizons as the base assumption. Detailed capacity analysis worksheets and tables are included in **Appendix G**.

**Table 8**, **Table 9**, **Table 10**, and **Table 11** outline the 2026, 2026 (optimized) 2031 and 2036 future background traffic operations, respectively. **Table 12** outlines the operations of the proposed roundabout in all three horizon years.

**Table 8: 2026 Future Background Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	10.7 s [B]	None	0.38 (SBLTR)	None
		P.M.	11.9 s [B]	None	0.44 (WBLTR)	None
Mayfield Road at Torbram Road	Signal	A.M.	27.8 s [C]	None	0.86 (EBT)	90m > 80m (NBL)
		P.M.	25.3 s [C]	None	0.82 (EBT)	85m > 80m (NBL)
Mayfield Road at Block 48-2 Street "C"	Signal	A.M.	50.4 s [D]	None	0.75 (EBT)	80m (EBR) <sup>3</sup>
		P.M.	52.0 s [D]	None	0.71 (EBT)	80m (EBR) <sup>3</sup>
Mayfield Road at Airport Road	Signal	A.M.	37.8 s [D]	90.9 s [F] (EBL)	0.92 (EBL)	80m > 60m (EBR) 170m > 95m (NBL)
		P.M.	42.7 s [D]	113.5 s [F] (EBL) 85.9 s [F] (WBL)	0.97 (EBL) <b>0.93 (WBT)</b>	310m > 165m (WBL) 125m > 60m (WBR) 190m > 95m (NBL)
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	42.2 s [E]	None	0.45 (WBL)	None
		P.M.	271.9 s [F]	271.9 s [F] (WBL)	<b>1.27 (WBL)</b>	None
Airport Road & 12333 Airport Road	Signal	A.M.	7.2 s [A]	None	0.44 (WBL)	None
		P.M.	4.4 s [A]	None	0.26 (NBT)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

The signal timing plans at Mayfield Road at Airport Road were optimized under 2026 conditions to add a westbound left protected permissive phase. The westbound left is currently the only left turn phase at the intersection without a protected permissive phase, therefore the protected phase was added based on traffic volumes and delays to improve operations. The protected phase was implemented into the base condition for 2031 and 2036 horizon years.

The comparison of operation with and without the protected westbound left turn lane are shown in **Table 9** below.

**Table 9: 2026 Future Background (Optimized) Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Mayfield Road at Airport Road	Signal	A.M.	37.8 s [D]	90.9 s [F] (EBL)	0.92 (EBL)	80m > 60m (EBR) 170m > 95m (NBL)
		P.M.	42.7 s [D]	113.5 s [F] (EBL) 85.9 s [F] (WBL)	0.97 (EBL) <b>0.93 (WBT)</b>	310m > 165m (WBL) 125m > 60m (WBR) 190m > 95m (NBL)
	Signal (Opt.)	A.M.	37.9 [D]	94.9 s [F] (EBL)	0.93 (EBL)	80m > 60m (EBR) 105m > 95m (NBL)
		P.M.	41.6 [D]	113.5 s [F] (EBL)	0.97 (EBL) <b>0.93 (WBT)</b>	110m > 60m (WBR) 185m > 95m (NBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

**Table 10: 2031 Future Background Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	11.5 s [B]	None	0.42 (SBLTR)	None
		P.M.	13.1 s [B]	None	0.50 (WBT)	None
Mayfield Road at Torbram Road	Signal	A.M.	33.6 s [C]	None	0.92 (EBT)	175m > 80m (NBL)
		P.M.	27.3 s [C]	None	0.87 (EBT)	105m > 80m (NBL)
Mayfield Road at Block 48-2 Street "C"	Signal	A.M.	36.4 s [D]	None	0.76 (EBT)	80m (EBR) <sup>3</sup> 60m (NBL) <sup>3</sup>
		P.M.	39.3 s [D]	None	0.69 (EBT)	70m (EBR) <sup>3</sup>
Mayfield Road at Airport Road	Signal	A.M.	35.9 s [D]	None	0.90 (EBL)	80m > 60m (EBR) 115m > 95m (NBL)
		P.M.	38.1 s [D]	97.1 s [F] (EBL)	0.97 (EBL)	240m > 200m (EBL) 180m > 95m (NBL)
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	47.1 s [E]	None	0.49 (WBL)	None
		P.M.	323.3 s [F]	323.3 s [F] (WBL)	1.39 (WBL)	40m > 30m (WBL)
Airport Road & 12333 Airport Road	Signal	A.M.	7.2 s [A]	None	0.44 (WBL)	None
		P.M.	4.3 s [A]	None	0.27 (NBT)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

**Table 11: 2036 Future Background Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	12.6 s [B]	None	0.47 (SBLTR)	None
		P.M.	15.0 s [B]	None	0.56 (WBLTR)	None
Mayfield Road at Torbram Road	Signal	A.M.	39.2 s [D]	114.4 [F] (WBL)	1.05 (WBL) 0.97 (EBT)	145m > 100m (EBL) 270m > 125m (EBR) 107m > 105m (WBL) 170m > 80m (NBL)
		P.M.	30.6 s [C]	None	0.90 (EBT)	100m > 80m (NBL)
Mayfield Road at Block 48-2 Street "C"	Signal	A.M.	31.4 s [C]	None	0.77 (EBT)	70m (EBR) <sup>3</sup> 60m (NBL) <sup>3</sup>
		P.M.	33.1 s [C]	None	0.70 (EBT)	60m (EBR) <sup>3</sup>
Mayfield Road at Airport Road	Signal	A.M.	36.4 s [D]	82.1 s [F] (EBL)	0.94 (EBL)	80m > 60m (EBR) 220m > 95m (NBL)
		P.M.	41.8 s [D]	97.5 s [F] (EBL)	1.00 (EBL) 0.93 (WBT)	290m > 200m (EBL) 70m > 60m (EBR) 185m > 165m (WBL) 140m > 60m (WBR) 175m > 95m (NBL)
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	53.4 s [E]	53.4 s [F] (WBL)	0.53 (WBL)	None
		P.M.	384.5 s [F]	384.5 s [F] (WBL)	1.52 (WBL)	40m > 30m (WBL)
Airport Road & 12333 Airport Road	Signal	A.M.	7.1 s [A]	None	0.44 (WBL)	None
		P.M.	4.3 s [A]	None	0.28 (NBT)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

**Table 12: Airport Rd./Old School Rd./Healey Rd. Roundabout Future Background Level of Service**

Horizon Year	Weekday A.M. Peak Hour						Weekday P.M. Peak Hour					
	Overall	App. <sup>1</sup>	Delay	LOS	V/C	95 <sup>th</sup> % Queue <sup>1</sup>	Overall	App. <sup>1</sup>	Delay	LOS	V/C	95 <sup>th</sup> % Queue <sup>1</sup>
2026	Delay: 2.72s LOS: A	EB	7.87s	A	0.28	~1	Delay: 2.29s LOS: A	EB	5.34s	A	0.13	~1
		NB	1.91s	A	0.15	~1		NB	2.07s	A	0.30	~1
		WB	1.74s	A	0.07	~1		WB	2.07s	A	0.16	~1
		SB	2.05s	A	0.27	~1		SB	2.11s	A	0.15	~1
2031	Delay: 2.77s LOS: A	EB	8.12s	A	0.29	~1	Delay: 2.32s LOS: A	EB	5.40s	A	0.13	~1
		NB	1.92s	A	0.15	~1		NB	2.10s	A	0.30	~1
		WB	1.75s	A	0.07	~1		WB	2.10s	A	0.17	~1
		SB	2.08s	A	0.28	~1		SB	2.13s	A	0.15	~1
2036	Delay: 2.83s LOS: A	EB	8.42s	A	0.31	~1	Delay: 2.35s LOS: A	EB	5.47s	A	0.14	~1
		NB	1.94s	A	0.16	~1		NB	2.12s	A	0.31	~1
		WB	1.76s	A	0.07	~1		WB	2.13s	A	0.18	~1
		SB	2.12s	A	0.29	~1		SB	2.15s	A	0.16	~1

Note 1: App. – Intersection Approach.

The intersection of Airport Road and Old School Road / Healey Road is projected to operate acceptably under each of the future background scenarios, at a LOS "A" during both the a.m. and p.m. peak hours. Additionally, no queuing or capacity constraints are forecast at the roundabout.

The signalized intersection of Airport Road and Mayfield Road is expected to operate at a level of service (LOS) "D". The intersection's maximum control delay is 36.4 seconds and 41.8 seconds in the weekday a.m. and p.m. peak hours respectively, the maximum volume-to-capacity ratios are 0.94 (EBL) and 1.00 (EBL) in the weekday a.m. and p.m. peak hours, respectively and the maximum 95<sup>th</sup> percentile queue length is 220 metres and 290 metres in the weekday a.m. and p.m. peak hours, respectively.

These metrics indicate that the intersection is operating efficiently with moderate delays in the weekday a.m. and p.m. peak hours. These metrics also indicate that intersection performance is expected to improve materially with the additional widening of Mayfield Road east of Airport Road, to a six-lane cross section as compared to with existing conditions. As we understand that the detailed design of the east approach has not yet been finalized, westbound left turn lane geometry should be designed to accommodate ultimate queues in the 2026 through 2036 study horizons.

The signalized intersection of Mayfield Road and Torbram Road is expected to operate at a level of service (LOS) "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. No critical control delay in the weekday a.m. or p.m. peak hours is expected, the maximum volume-to-capacity ratios are 1.05 (WBL) and 0.90(EBT) in the weekday a.m. and p.m. peak hours, respectively. The maximum 95<sup>th</sup> percentile queue length is 270 metres and 100 metres in the weekday a.m. and p.m. peak hours, respectively. These metrics indicate that the intersection is operating efficiently with acceptable delays and reserve capacity to accommodate future increases in traffic volume.

The unsignalized intersection of Airport Road at Perdue Court/Davis Lane is expected to operate at LOS "E" and "F" during the weekday a.m. and p.m. peak hours respectively. As discussed in **Section 2.6**, this is largely attributed to the stop-controlled movements and westbound left turns, this intersection may need to be signalized in the future as traffic volumes increase along the Airport Road corridor, as signalization is already warranted at this time.

The remaining intersections are operating acceptably at LOS "C" or better in the weekday a.m. and p.m. peak hours.

### 3.7 Summary of Recommended Improvements to Accommodate Background Growth

Based on the growth expected around the boundary road network, the following improvements are recommended for consideration at the noted intersections to accommodate the growth without considerations of site generated traffic.

- **Mayfield Road at Torbram Road (Signalized Intersection)**
  - Eastbound left turn lane with 145m storage (45m increase from existing)
  - Eastbound right turn lane with 270m storage (145m increase from existing)
  - Westbound left turn lane with 110m storage (5m increase from existing)
  - Northbound left turn lane with 170m storage (90m increase from existing)
  - Actuated coordination of the Mayfield Road corridor from Torbram Road to Airport Road including cycle length increases to Mayfield Road at Torbram Road to 120 seconds and 135 seconds in the a.m. and p.m. peak hours, respectively.
- **Mayfield Road at Block 48-2 Street "C" (Signalized Access)**
  - Northbound left turn lane with 60m storage
  - Eastbound right turn lane with 70m storage
  - Actuated coordination of the Mayfield Road corridor from Torbram Road to Airport Road including cycle length of 120 seconds and 135 seconds in the a.m. and p.m. peak hours, respectively, for Mayfield Road at Street "B"/Block 48-2 Street "C".
- **Mayfield Road at Airport Road (Signalized Intersection)**
  - Add Westbound left protected permissive phase in signal timing plan
  - Eastbound left turn lane with 290m storage (90m increase from existing)
  - Eastbound right turn lane with 80m storage (20m increase from existing)
  - Westbound left turn lane with 185m storage (can be accommodated as part of 2026-2031 road widening)
  - Westbound right turn lane with 145m storage (can be accommodated as part of 2026-2031 road widening)
  - Northbound left turn lane with 220m storage (125m increase from existing)
- **Airport Road at Davis Lane/ Perdue Crescent (Minor Stop-Controlled Intersection)**
  - Monitor and implement signalization if warranted
  - Westbound left turn lane with 40m storage (10m increase from existing)



### 3.7.1 Torbram Road Widening

We understand that the Town has additional considerations for the ultimate buildout of Torbram Road as a two-lane or four-lane urban cross section. However, the details of the ultimate ROW considerations, and scheduling of this roadway will be subject to the completion of the ongoing Multimodal Transportation Master Plan currently being undertaken by the Town. In addition, completion of a Class Environmental Assessment may also be required. It is noted that operational analysis was conducted for all horizon years with the current two-lane cross section and no operational issues were noted.

## 4.0 Site Generated Traffic

The proposed development will result in additional vehicles on the surrounding network that previously did not exist, and the following section outlines the methodology used to estimate the generation and distribution of trips expected to be generated by the proposed development.

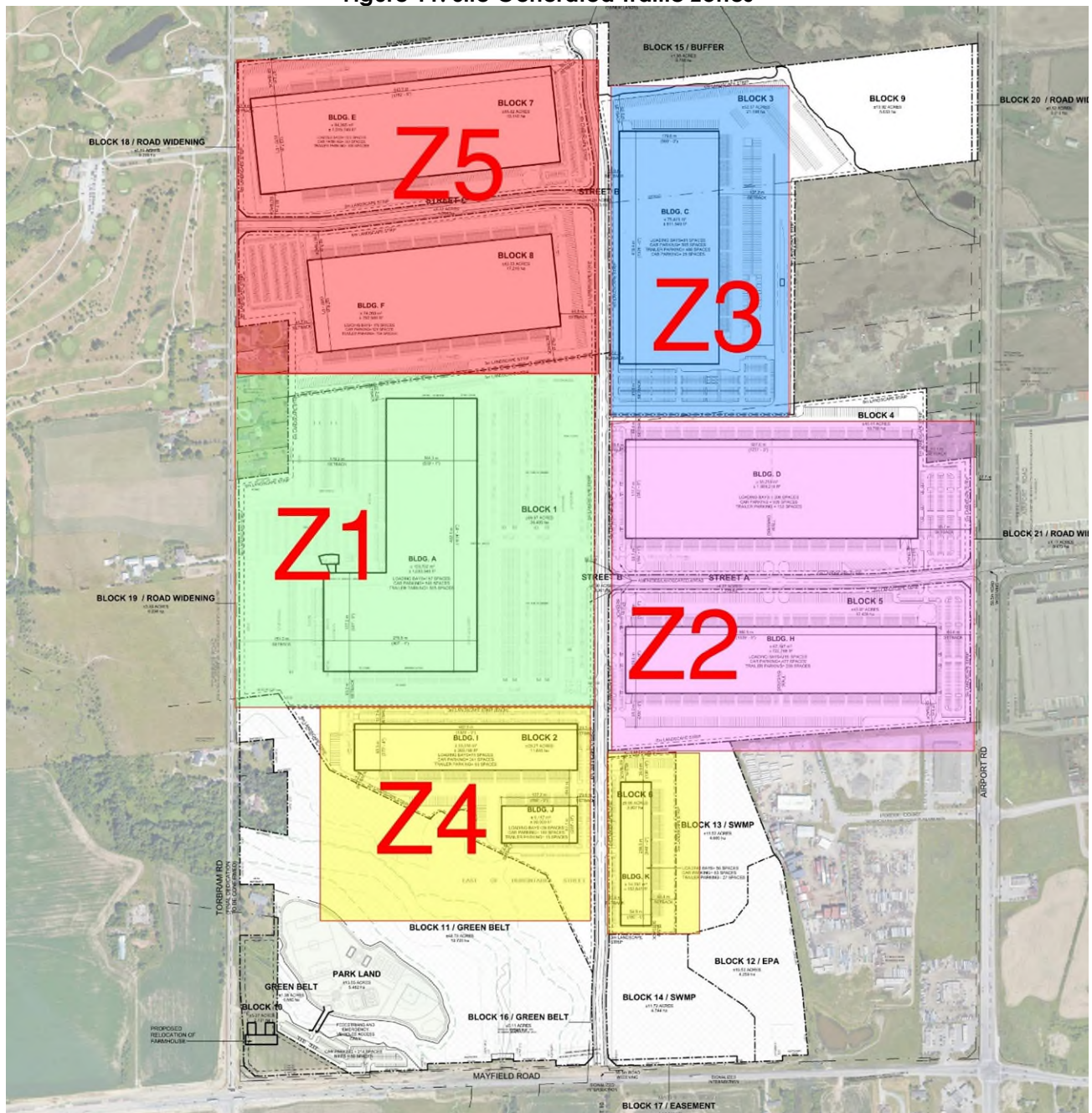
### 4.1 Division of Sites

It is noted the most recent Site Plan (attached in **Appendix B**), eight buildings are proposed for the subject development. For the purpose of transportation analysis within this report, different zones have been assigned to the proposed development for trip distribution purposes, as summarized in **Table 13** below and are illustrated **Figure 11**.

**Table 13: Transportation Zones**

Zone	Building(s)
1	Building A
2	Building D
	Building H
3	Building C
4	Building I
	Building J
	Building K
5	Building E
	Building F

Figure 11: Site Generated Traffic Zones



## 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, 11<sup>th</sup> 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 3<sup>rd</sup> 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 14**, **Table 15**, and **Table 16** 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 14: 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
<b>Zone 1 Total</b>			<b>118</b>	<b>35</b>	<b>154</b>	<b>44</b>	<b>113</b>	<b>157</b>
2	Building D	1,002,240	111	33	144	41	106	147
	Building H	739,200	58	54	112	32	83	115
<b>Zone 2 Total</b>			<b>169</b>	<b>87</b>	<b>256</b>	<b>73</b>	<b>189</b>	<b>262</b>
3	Building C	811,849	93	28	121	35	89	124
<b>Zone 3 Total</b>			<b>93</b>	<b>28</b>	<b>121</b>	<b>35</b>	<b>89</b>	<b>124</b>
4	Building I	360,760	52	15	67	20	50	70
	Building J	99,000	27	8	35	11	28	39
	Building K	210,273	38	11	49	14	37	51
<b>Zone 4 Total</b>			<b>117</b>	<b>34</b>	<b>151</b>	<b>45</b>	<b>115</b>	<b>160</b>
5	Building E	1,015,740	112	33	146	42	107	148
	Building F	797,500	62	57	119	34	88	122
<b>Zone 5 Total</b>			<b>174</b>	<b>91</b>	<b>265</b>	<b>76</b>	<b>195</b>	<b>271</b>
<b>Total</b>		<b>4,307,268</b>	<b>672</b>	<b>275</b>	<b>947</b>	<b>273</b>	<b>700</b>	<b>973</b>

**Table 15: 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	1,002,240	89	26	115	33	85	117
	Building H	739,200	47	43	90	26	66	92
Zone 2 Total			135	70	205	59	151	210
3	Building C	811,849	75	22	97	28	71	99
Zone 3 Total			75	22	97	28	71	99
4	Building I	360,760	42	12	54	16	40	56
	Building J	99,000	22	6	28	9	22	31
	Building K	210,273	30	9	39	11	30	41
Zone 4 Total			94	27	121	36	92	128
5	Building E	1,015,740	90	27	116	33	85	119
	Building F	797,500	50	46	95	27	70	98
Zone 5 Total			139	73	212	61	156	216
Total		4,307,268	538	220	758	219	560	778

**Table 16: 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	1,002,240	22	7	29	8	21	30
	Building H	739,200	11	11	22	6	17	23
Zone 2 Total			34	17	51	14	38	52
3	Building C	811,849	18	6	24	7	18	25
Zone 3 Total			18	6	24	7	18	25
4	Building I	360,760	10	3	13	4	10	14
	Building J	99,000	5	2	7	2	6	8
	Building K	210,273	8	2	10	3	7	10
Zone 4 Total			23	7	30	9	23	32
5	Building E	1,015,740	22	6	30	9	22	29
	Building F	797,500	12	11	24	7	18	24
Zone 5 Total			35	18	53	15	39	55
Total		4,307,268	133	55	189	54	141	196

The proposed industrial warehouse development is expected to generate approximately 898 and 922 two-way trips, inclusive of passenger cars and trucks. A total of 719 and 737 two-way passenger car trips are expected during the weekday a.m. and p.m. peak hours, respectively; and approximately 179 and 186 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 14**, **Table 15**, and **Table 16** slightly differ from the statistics found in the latest Site Plan. The overall trip generation for the site has reduced by 7 trips in the latest Site Plan in comparison to the trip generation used at the time of this analysis and is therefore considered conservative. Similarly, the public Park Lands portion of the development was not included in the Site Trip Generation due to the Site Plan being in development at the time this analysis was being conducted. The Site Plan statistics shown are from the latest Site Plan (dated, March 24, 2023), 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.

The subject property is located in 2006 GTA Zone 3014, with primarily agricultural and some existing industrial buildings. The adjacent zone, (GTA Zone 3015) also consists of industrial facilities and was included in the trip distribution analysis to determine more accurate results as representative proxy sites. As such, the TTS results were filtered to reflect auto trips within the two zones during the weekday a.m. and p.m. periods. From this query, trip origins were determined, and the percentage of trips assigned from each origin was accounted for.

**Appendix L** includes the TTS data. The resulting trip distribution is summarized in **Table 17**.

**Table 17: Trip Distribution**

Arriving From / Departing To	Inbound	Outbound
North	20%	10%
South	35%	45%
East	10%	20%
West	35%	25%

The distribution of trips outlined in **Table 17** were further divided based on the most convenient travel route expected for each gateway to each zone, as further elaborated upon in the following sections.

#### 4.3.2 Passenger Trips

The passenger trip distributions for each zone, summarized in **Table 18** were derived based on the most convenient travel route expected from each gateway based on the proximity of passenger vehicle entrance/exits expected to be used for buildings situated in each zone. Zone-based site-generated trips were then distributed to the study road network based on the distributions outlined below.

For instance, the majority of northbound/southbound traffic destined for Zone 2 (Buildings C, D, or H) are expected to use the Airport Road access to the site via Airport Road. As such, the distribution of northbound/southbound-destined inbound and outbound traffic for Zone 2 would be expected to wholly use Airport Road, as demonstrated in **Table 18** below.

**Table 18: Passenger Trip Zone Directional Distributions**

Direction	North		East		South		West	
Zone/via	Torbram	Airport	Mayfield	Healey	Torbram	Airport	Mayfield	Old School
1	100%	0%	90%	10%	100%	0%	90%	10%
2	0%	100%	80%	20%	0%	100%	90%	10%
3	0%	100%	100%	0%	30%	70%	100%	0%
4	0%	100%	100%	0%	30%	70%	100%	0%
5	0%	100%	100%	0%	30%	70%	100%	0%

The total distribution of the passenger trips is represented in **Table 19** below.

**Table 19: Passenger Trip Inbound and Outbound Total Distributions**

Table 17: Passenger Trip Inbound and Outbound Total Distributions									
Direction	North		East		South		West		Total
Zone/via	Torbram	Airport	Mayfield	Healey	Torbram	Airport	Mayfield	Old School	
A.M.									
Inbound	4%	16%	9%	1%	12%	23%	33%	2%	100%
Outbound	1%	9%	18%	2%	13%	32%	24%	1%	100%
P.M.									
Inbound	3%	12%	11%	1%	15%	29%	28%	1%	100%
Outbound	5%	25%	9%	1%	7%	13%	38%	2%	100%

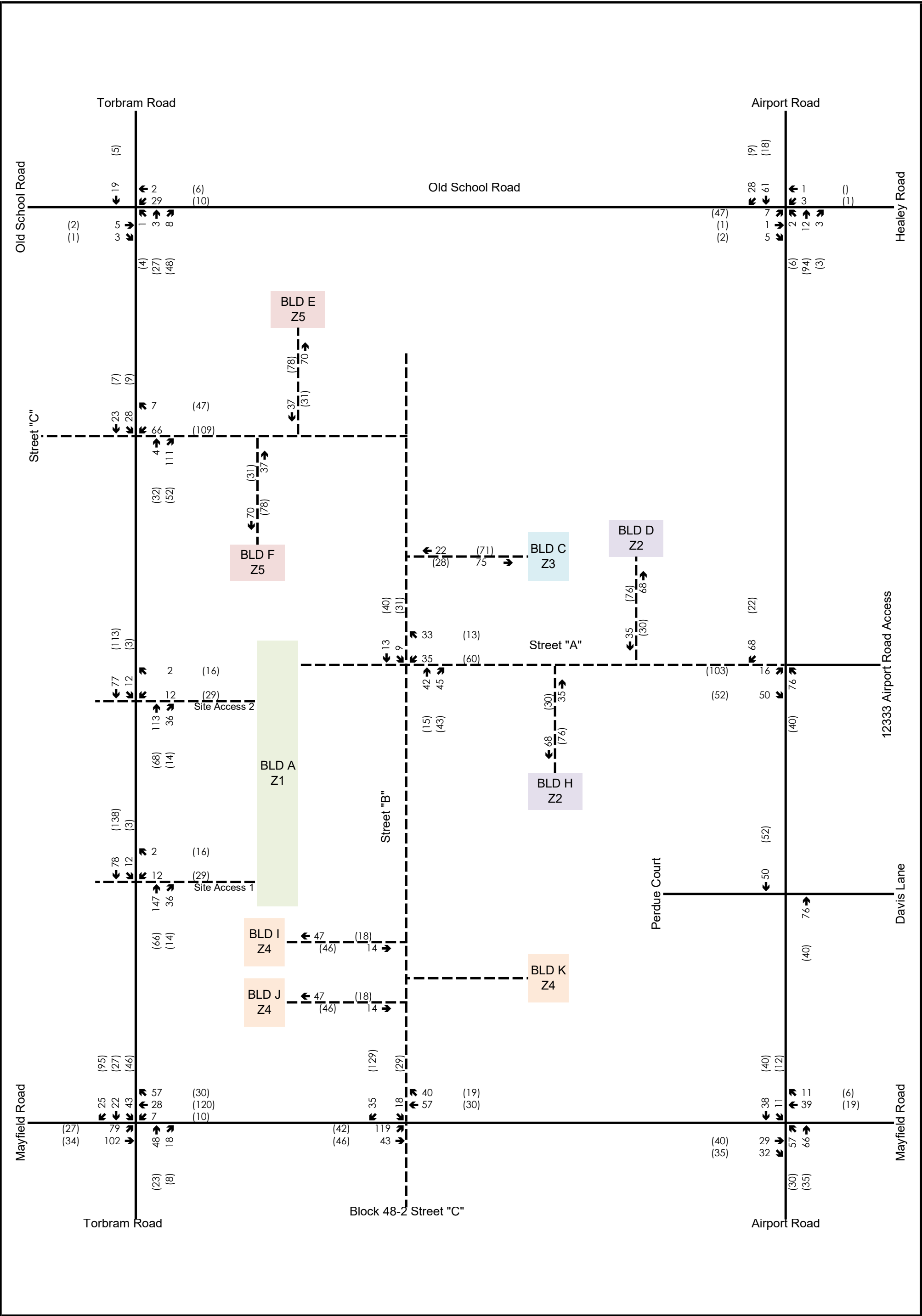
We understand that it is the intent of the Town to either reconstruct Torbram to a two-lane urban cross section, or a four-lane urban cross section. However, details on Torbram Road plans will result from the Town's ongoing Multimodal Transportation Master Plan (MMTMP) and additional commentary will be provided at such time.

Additionally, a sensitivity analysis was conducted to analyze operations under the assumption that all Zone 5 traffic only uses the internal road network via Mayfield Road and Airport Road. The results are shown in **Section 5.0** and conclude that the traffic operations can function adequately under this assumption.

#### 4.3.3 Heavy Trucks

The heavy vehicle trips generated by the proposed development were distributed to the boundary road network for each zone based on expected travel routes for heavy truck traffic, and roadways which permit heavy truck traffic. Truck trip volumes on the existing road network and the Region's Goods Movement Strategy were also reviewed. It was determined that the distribution of trucks would primarily rely on Airport Road for north-south connectivity, and Mayfield Road for east-west connectivity, as Torbram Road, Old School Road and Healey Road are not expected to provide sufficient capacity for heavy vehicle traffic. As such, all heavy vehicle trips were distributed to Airport Road for north-south trips, and Mayfield Road for east-west trips. The site trips were assigned similarly to the passenger vehicle distributions, using the most logical routes expected for each gateway to the nearest site access(es).

**Appendix M** contains detailed trip distribution worksheets. The total passenger, truck and overall trip assignments have been provided in **Figure 12**, **Figure 13**, and **Figure 14**.



Legend

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

Tullamore Industrial

Trip Assignment (Car)

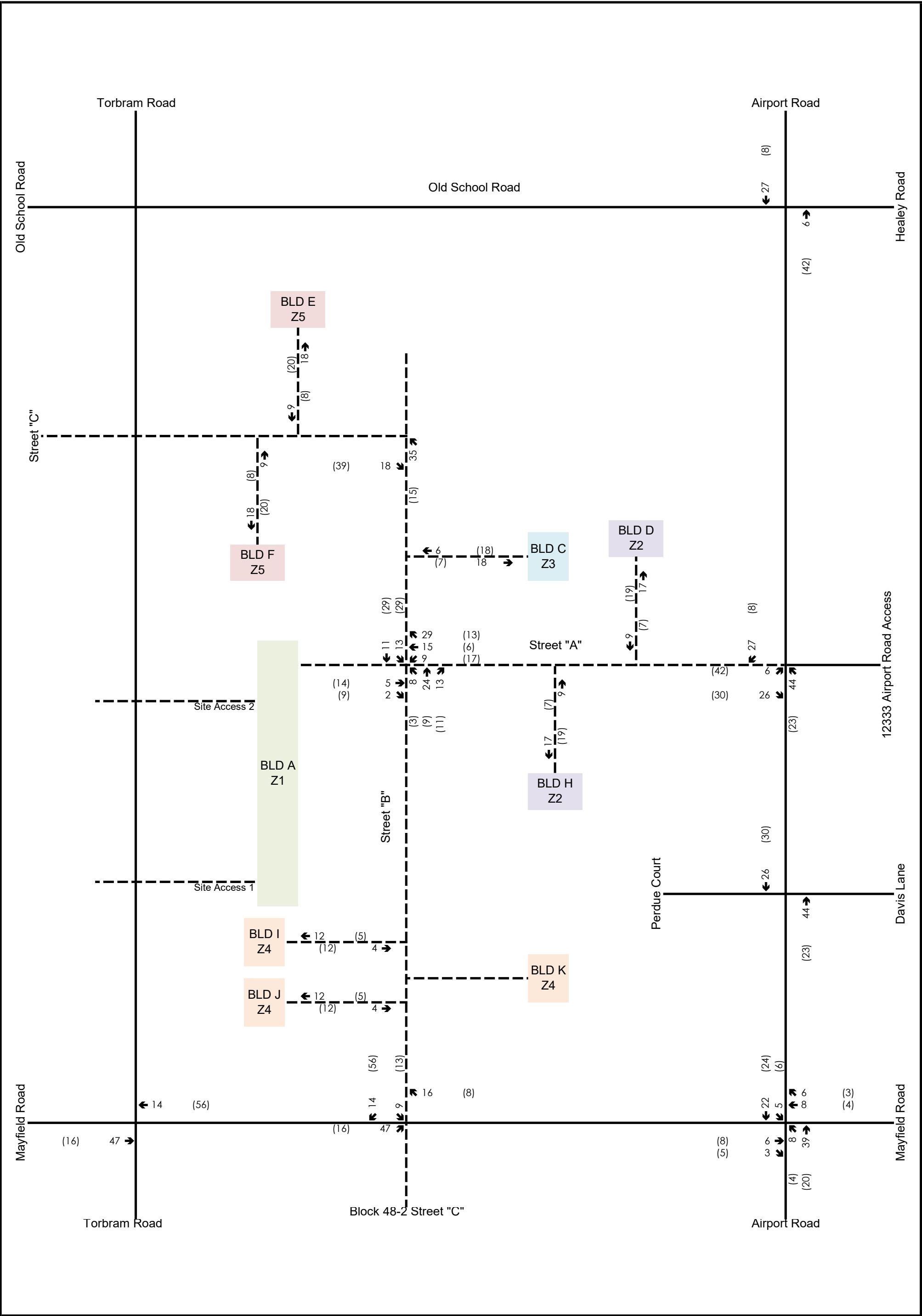


**CROZIER**  
CONSULTING ENGINEERS

Figure 12

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS





Legend

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

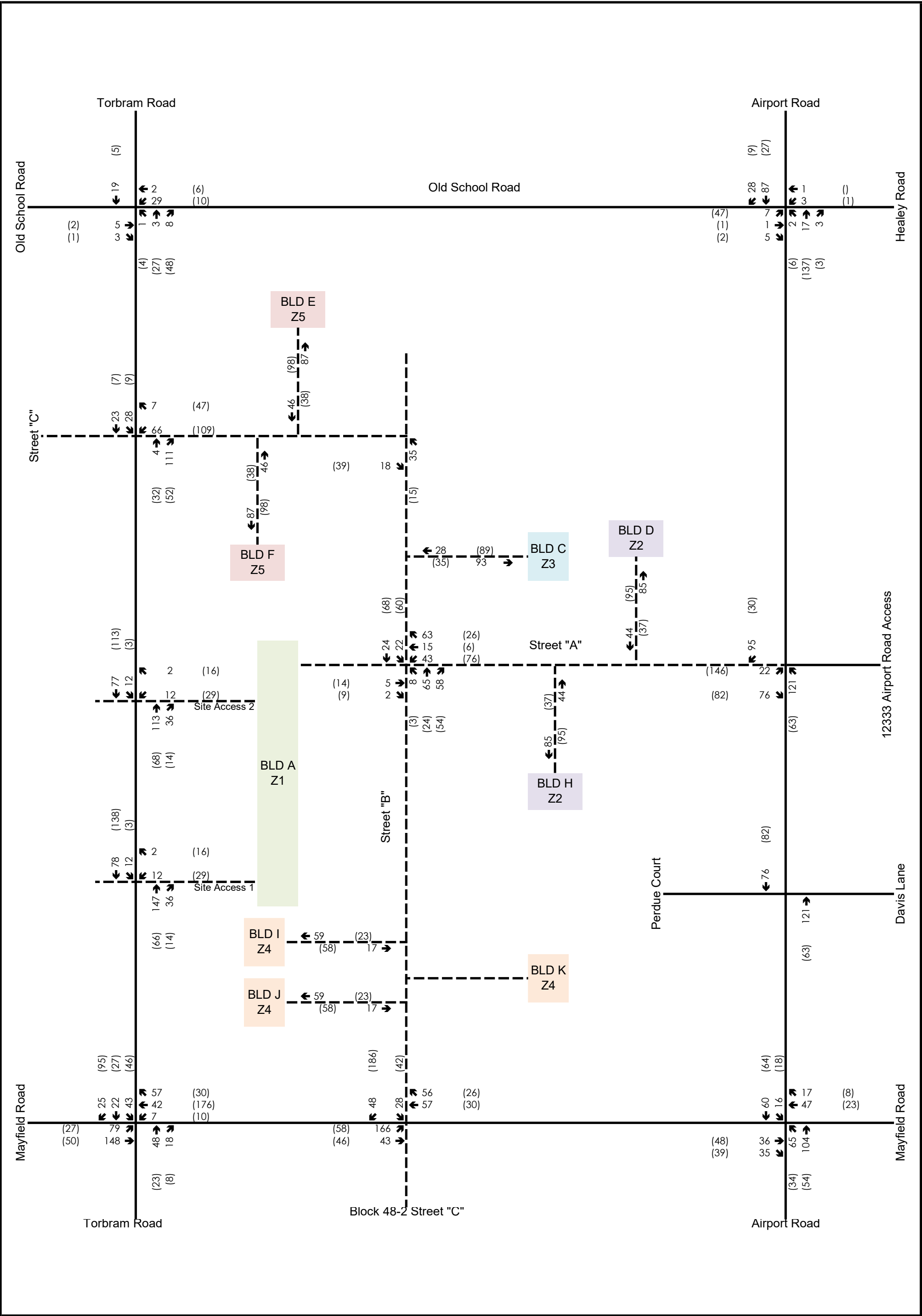
Tullamore Industrial

Trip Assignment (Trucks)



Figure 13

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



Legend

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

Tullamore Industrial

Trip Assignment (Total)



Figure 14

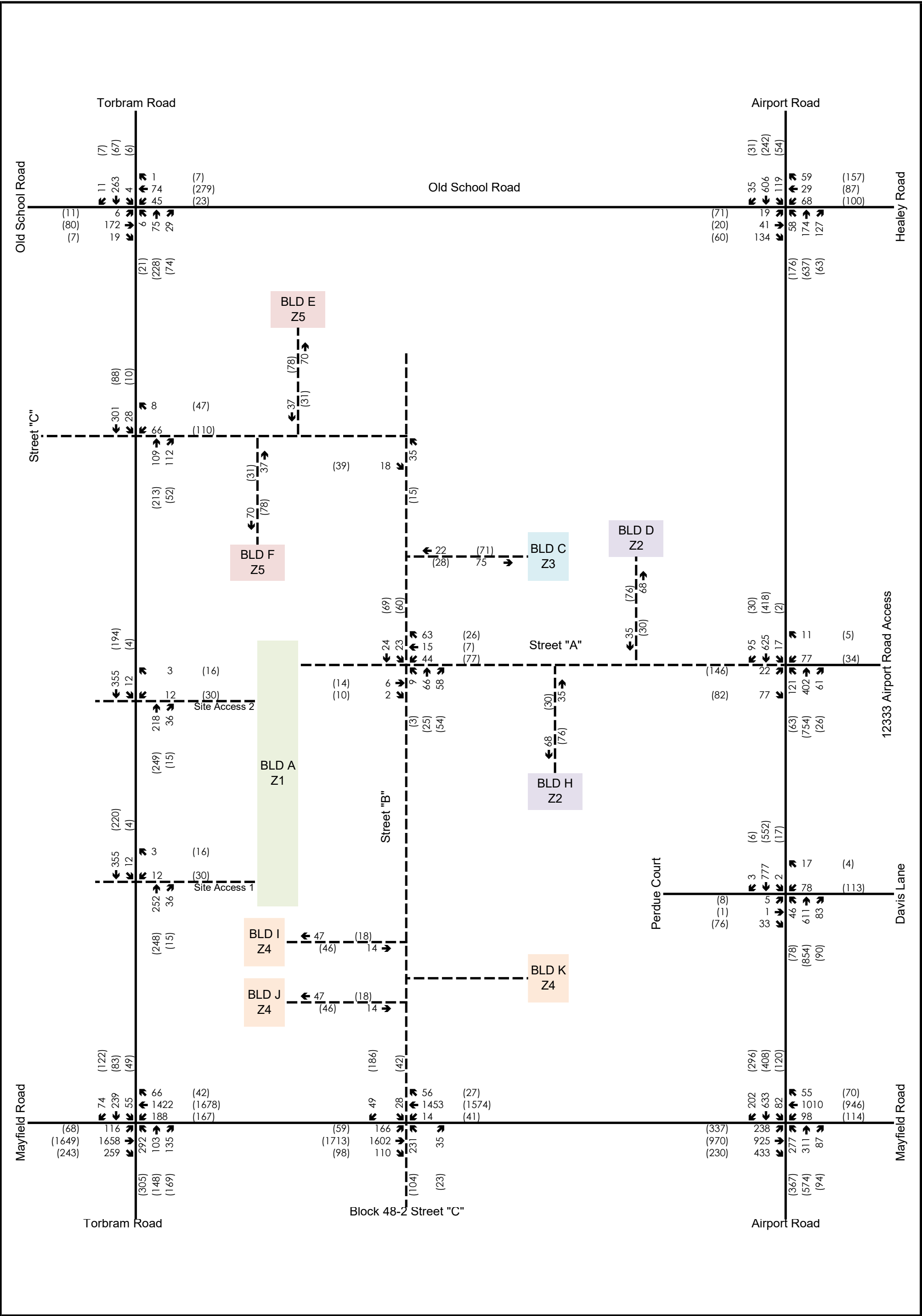
Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS

## 5.0 Total Traffic Conditions

### 5.1 Intersection Operations

Traffic operations at the study intersections were analyzed following the addition of site generated traffic volumes. The total traffic volumes for 2026, 2031 and 2036 future total traffic are illustrated in **Figure 15**, **Figure 16**, and **Figure 17**, respectively. **Table 20**, **Table 21**, **Table 22**, **Table 23** and **Table 24** the 2026, 2026 (optimized), 2031, 2036, and 2036 (optimized) future total traffic operations, respectively. In addition, **Table 25** outlines the operations of the proposed roundabout in all three horizon years. the Detailed capacity analysis worksheets are included in **Appendix G**.

Due to the Draft Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Draft Plan differs from the naming convention used in this analysis. The internal roads listed as Steet "A", Street "B", and Street "C" in the latest Draft Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to **Appendix G**, the accurate street names have been updated in **Table 20**, **Table 21**, **Table 22**, **Table 23** and **Table 24** for convenience.



**Legend**

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

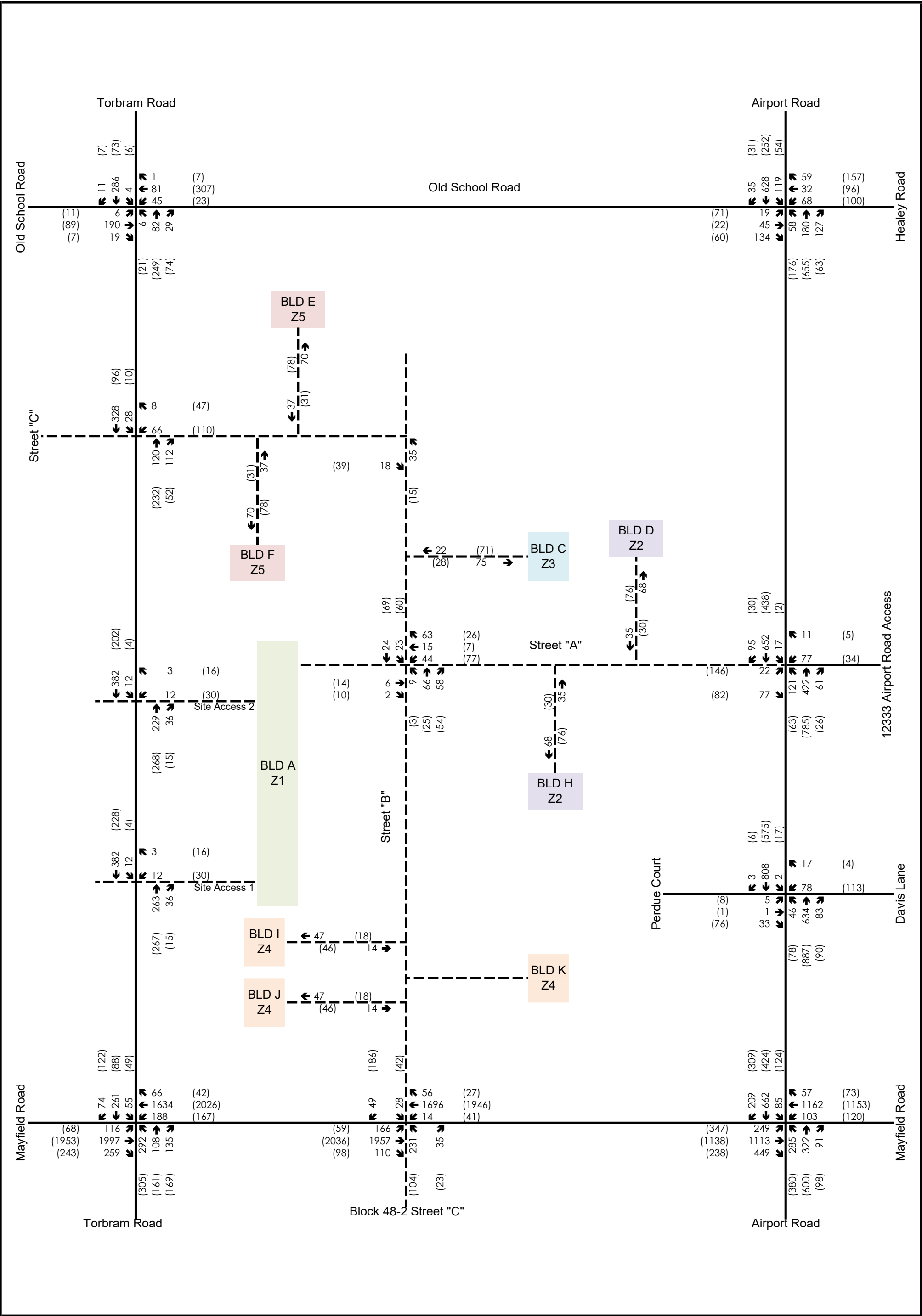
Tullamore Industrial

2026 Future Total Traffic



**Figure 15**

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



Legend

xx A.M. Peak Hour Traffic Volumes  
(xx) P.M. Peak Hour Traffic Volumes

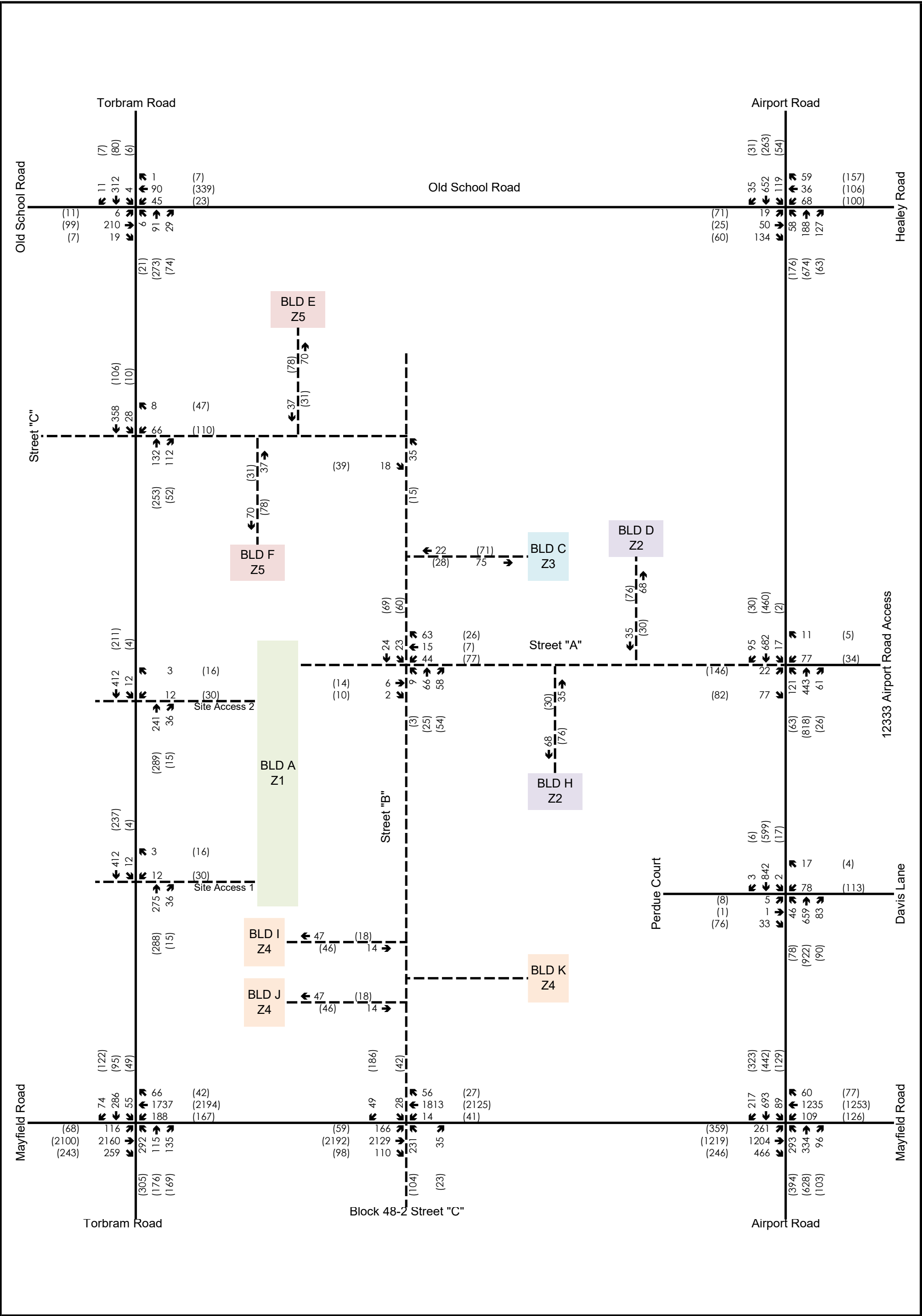
Tullamore Industrial

2031 Future Total Traffic



Figure 16

Project No. 2022-5842  
Date. 2023.04.06  
Analyst. TDS



**Table 20: 2026 Future Total Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	11.6 s [B]	None	0.42 (SBLTR)	None
		P.M.	13.6 s [B]	None	0.51 (NBLTR)	None
Torbram Road at Street "C" <sup>4</sup>	Stop Control (Minor)	A.M.	13.9 s [B]	None	0.15 (WBL)	None
		P.M.	12.2 s [B]	None	0.19 (WBL)	None
Mayfield Road at Torbram Road	Signal	A.M.	35.6 s [D]	None	0.90 (EBT)	140m > 80m (NBL)
		P.M.	23.1 s [C]	None	0.76 (NBL)	140m > 80m (NBL)
Mayfield Road at Street "B" <sup>4</sup>	Signal	A.M.	43.1 s [D]	None	0.83 (WBT)	100m (EBL) <sup>3</sup> 75m (EBR) <sup>3</sup> 60m (WBR) <sup>3</sup> 60m (NBL) <sup>3</sup>
		P.M.	48.3 s [D]	None	0.72 (WBT)	90m (EBL) <sup>3</sup> 75m (EBR) <sup>3</sup>
Mayfield Road at Airport Road	Signal	A.M.	40.8 s [D]	95.7 s [F] (EBL)	0.96 (EBL) 0.92 (WBT)	250m > 200m (EBL) 80m > 60m (EBR) 125m > 60m (WBR) 205m > 95m (NBL)
		P.M.	44.6 s [D]	129.6 s [F] (EBL) 87.8 s [F] (WBL)	1.05 (EBL) 0.92 (WBT)	215m > 200m (EBL) 320m > 165m (WBL) 95m > 60m (WBR) 180m > 95m (NBL)
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	68.3 s [F]	68.3 s [F] (EBL)	0.60 (WBL)	None
		P.M.	406.6 s [F]	406.6 s [F] (EBL)	1.56 (WBL)	40m > 30m (WBL)
Airport Road at 12333 Airport Road/Street "A" <sup>4</sup>	Signal	A.M.	8.1 s [A]	None	0.55 (WBL)	None
		P.M.	12.1 s [B]	None	0.70 (EBL)	40m > 30m (WBL)
Torbram Road at Site Access 1	Stop Control (Minor)	A.M.	13.5 s [B]	None	0.18 (NBTR)	None
		P.M.	11.8 s [B]	None	0.17 (NBTR)	None

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Site Access 2	Stop Control (Minor)	A.M.	13.1 s [B]	None	0.16 (NBTR)	None
		P.M.	11.6 s [B]	None	0.17 (NBTR)	None
Street "B" <sup>4</sup> & Street "A" <sup>4</sup>	Stop Control (All Way)	A.M.	7.7 s [A]	None	0.10 (WBTR)	None
		P.M.	8.3 s [A]	None	0.13 (WBL)	None
Street "B" <sup>4</sup> & Street "C" <sup>4</sup>	Stop Control (All Way)	A.M.	7.4 s [A]	None	0.05 (NBL)	None
		P.M.	7.0 s [A]	None	0.05 (EBL)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

Note 4: Due to the Draft Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Draft Plan differs from the naming convention used in this analysis. The internal roads listed as Street "A", Street "B", and Street "C" in the latest Draft Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to Appendix G.

The signal timing plans at Mayfield Road at Airport Road were optimized under 2026 conditions to add a westbound left protected permissive phase. The westbound left is currently the only left turn phase at the intersection without a protected permissive phase, therefore the protected phase was added based on traffic volumes and delays to improve operations. The protected phase was implemented into the base condition for 2031 and 2036 horizon years.

The comparison of operation with and without the protected westbound left turn lane are shown in **Table 21** below.



**Table 21: 2026 Future Total (Optimized) Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Mayfield Road at Airport Road	Signal	A.M.	40.8 s [D]	95.7 s [F] (EBL)	0.96 (EBL) 0.92(WBT)	250m > 200m (EBL) 80m > 60m (EBR) 125m > 60m (WBR) 205m > 95m (NBL)
		P.M.	44.6 s [D]	129.6 s [F] (EBL) 87.8 s [F] (WBL)	1.05 (EBL) 0.92(WBT)	215m > 200m (EBL) 320m > 165m (WBL) 95m > 60m (WBR) 180m > 95m (NBL)
	Signal (Opt.)	A.M.	41.8 s [D]	91.7 s [F] (EBL)	0.94 (EBL) 0.93 (WBT)	80m > 60m (EBR) 250m > 165m (WBL) 125m > 60m (WBR) 190m > 95m (NBL)
		P.M.	43.5 s [D]	121.1 s [F] (EBL) 87.8 s [F] (NBL)	1.02 (EBL) 1.02 (NBL)	315m > 200m (EBL) 110m > 60m (WBR) 175m > 95m (NBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

**Table 22: 2031 Future Total Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	12.6 s [B]	None	0.47 (SBLTR)	None
		P.M.	15.2 s [C]	None	0.56 (WBLTR, NBLTR)	None
Torbram Road at Street "C" <sup>4</sup>	Stop Control (Minor)	A.M.	14.6 s [B]	None	0.16 (WBL)	None
		P.M.	12.6 s [B]	None	0.20 (WBL)	None
Mayfield Road at Torbram Road	Signal	A.M.	39.3 s [D]	80.4 s [F] (WBL)	0.98 (EBT)	170m > 100m (EBL) 165m > 125m (EBR) 155m > 80m (NBL)
		P.M.	31.2 s [C]	None	0.89 (EBT)	115m > 80m (NBL)
Mayfield Road at Street "B" <sup>4</sup>	Signal	A.M.	36.4 s [D]	None	0.85 (WBT)	105m (EBL) <sup>3</sup> 75m (WBL) <sup>3</sup> 65m (WBR) <sup>3</sup> 60m (NBL) <sup>3</sup>
		P.M.	35.6 s [D]	None	0.73 (WBT)	70m (EBR) <sup>3</sup>
Mayfield Road at Airport Road	Signal	A.M.	40.1 s [D]	90.2 s [F] (EBL)	0.96 (EBL)	240m > 200m (EBL) 80m > 60m (EBR) 185m > 95m (NBL)
		P.M.	42.7 s [D]	104.0 s [F] (EBL)	0.99 (EBL)	205m > 200m (EBL) 75m > 60m (EBR) 175m > 95m (NBL)
Airport Road at Davis Lane/Perdue Crescent	Stop Control (Minor)	A.M.	78.3 s [F]	78.3 s [F] (WBL)	0.65 (WBL)	None
		P.M.	474.0 s [F]	474.0 s [F] (WBL)	1.70 (WBL)	44.5 > 30.0 (WBL)
Airport Road at 12333 Airport Road/Street "A" <sup>4</sup>	Signal	A.M.	8.1 s [A]	None	0.55 (WBL)	None
		P.M.	12.0 s [B]	None	0.70 (EBL)	55.6m > 55m (EBL)
Torbram Road at Site Access 1	Stop Control (Minor)	A.M.	14.0 s [B]	None	0.19 (NBTR)	None
		P.M.	12.1 s [B]	None	0.18 (NBTR)	None

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Site Access 2	Stop Control (Minor)	A.M.	13.5 s [B]	None	0.17 (NBTR)	None
		P.M.	11.9 s [B]	None	0.18 (NBTR)	None
Street "B" <sup>4</sup> & Street "A" <sup>4</sup>	Stop Control (All Way)	A.M.	7.7 s [A]	None	0.17 (NBTR)	None
		P.M.	8.3 s [A]	None	0.13 (WBL)	None
Street "B" <sup>4</sup> & Street "C" <sup>4</sup>	Stop Control (All Way)	A.M.	7.2 s [A]	None	0.05 (NBL)	None
		P.M.	7.0 s [A]	None	0.02 (NBR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

Note 4: Due to the Draft Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Draft Plan differs from the naming convention used in this analysis. The internal roads listed as Street "A", Street "B", and Street "C" in the latest Draft Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to Appendix G.

**Table 23: 2036 Future Total Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Old School Road	Stop Control (All Way)	A.M.	12.2 s [B]	None	0.52 (SBLTR)	None
		P.M.	17.8 s [C]	None	0.63 (WBLTR, NBLTR)	None
Torbram Road at Street "C" <sup>4</sup>	Stop Control (Minor)	A.M.	15.3 s [B]	None	0.17 (WBL)	None
		P.M.	13.0 s [B]	None	0.21 (WBL)	None
Mayfield Road at Torbram Road	Signal	A.M.	48.8 s [D]	None	1.06 (EBT)	200m > 100m (EBL) 260m > 125m (EBR) 170m > 80m (NBL)
		P.M.	34.9 s [C]	None	0.91 (EBT)	130m>80m (NBL)
Mayfield Road at Street "B" <sup>4</sup>	Signal	A.M.	36.6 s [D]	None	0.87 (WBT)	95.0m (EBL) <sup>3</sup> 75.5m (EBR) <sup>3</sup> 62.0m (WBR) <sup>3</sup> 57.5m (NBL) <sup>3</sup>
		P.M.	18.1 s [B]	None	0.79 (WBT)	None
Mayfield Road at Airport Road	Signal	A.M.	42.3 s [D]	92.1 s [F] (EBL)	0.98 (EBL)	210m>200m(EBL) 75m>60m(EBR) 210m>95m (NBL)
		P.M.	47.9 s [D]	80.6 s [F] (NBL)	0.98 (EBL) 0.98 (WBT) 1.01 (NBL)	255m>60m(EBL) 85m>60m(EBR) 230m>165m (WBL) 160m>60m(WBR) 175m>95m (NBL)
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	63.1 s [F]	63.1 s [F] (WBL)	0.47 (WBL)	None
		P.M.	553.2 s [F]	553.2 s [F] (WBL)	1.86 (WBL)	40m>30m (WBL)
Airport Road at 12333 Airport Road/Street "A" <sup>4</sup>	Signal	A.M.	8.1 s [A]	None	0.55 (WBL)	None
		P.M.	12.0 s [B]	None	0.70 (EBL)	None
Torbram Road at Site Access 1	Stop Control (Minor)	A.M.	14.5 s [B]	None	0.20 (NBTR)	None
		P.M.	12.4 s [B]	None	0.19 (NBTR)	None

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Torbram Road at Site Access 2	Stop Control (Minor)	A.M.	14.0 s [B]	None	0.18 (NBTR)	None
		P.M.	12.2 s [B]	None	0.19 (NBTR)	None
Street "B" <sup>4</sup> & Street "A" <sup>4</sup>	Stop Control (All Way)	A.M.	7.7 s [A]	None	0.17 (NBTR)	None
		P.M.	8.3 s [A]	None	0.13 (WBL)	None
Street "B" <sup>4</sup> & Street "C" <sup>4</sup>	Stop Control (All Way)	A.M.	7.4 s [A]	None	0.05 (NBL)	None
		P.M.	7.0 s [A]	None	0.05 (EBR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

Note 4: Due to the Draft Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Draft Plan differs from the naming convention used in this analysis. The internal roads listed as Street "A", Street "B", and Street "C" in the latest Draft Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to Appendix G.

In the ultimate condition, further optimized signal timing plans were evaluated at the intersections of Mayfield Road at Torbram Road and Mayfield Road at Airport Road. Walk times at both intersections were reduced to 3 seconds. Furthermore, Mayfield Road at Torbram Road is currently a pre-timed signalized intersection, it was updated to be actuated-coordinated with the same cycle length as other intersections along the Mayfield Road corridor. Additionally, a LOS time adjust of -2 was applied to westbound left turns at Mayfield Road at Torbram Road to account for inter-green left turn movements given the high left turn volumes and opposing through traffic.

The comparison of operation with and without the protected westbound left turn lane are shown in **Table 24** below.

**Table 24: 2036 Future Total (Optimized) Level of Service**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Mayfield Road at Torbram Road	Signal	A.M.	48.8 s [D]	None	1.06 (EBT)	200m > 100m (EBL) 260m > 125m (EBR) 170m > 80m (NBL)
		P.M.	34.9 s [C]	None	0.91 (EBT)	130m>80m (NBL)
	Signal (Opt.)	A.M.	45.5 s [D]	None	0.98 (EBT)	160m > 100m (EBL) 230m > 125m (EBR) 130m > 105m (WBL) 150m > 80m (NBL)
		P.M.	37.1 s [D]	None	0.92 (EBT)	135m >80m (NBL)
Mayfield Road at Airport Road	Signal	A.M.	42.3 s [D]	92.1 s [F] (EBL)	0.98 (EBL)	210m>200m(EBL) 75m>60m(EBR) 210m>95m (NBL)
		P.M.	47.9 s [D]	80.6 s [F] (NBL)	0.98 (EBL) 0.98 (WBT) 1.01 (NBL)	255m>60m(EBL) 85m>60m(EBR) 230m>165m (WBL) 160m>60m(WBR) 175m>95m (NBL)
	Signal (Opt.)	A.M.	39.3 s [D]	None	0.98 (EBL)	275m > 200m (EBL) 85m > 60m (EBR) 205m > 95m (NBL)
		P.M.	48.5 s [D]	90.5 s [F] (EBL) 80.6 s [F] (NBL)	0.98 (EBL) 0.98 (WBT) 1.01 (NBL)	230m > 60m (EBL) 85m > 60m (EBR) 200m > 165m (WBL) 135m > 60m(WBR) 185m > 95m (NBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

The signalized intersection of Airport Road and Mayfield Road is expected to operate at a level of service (LOS) "D" during the weekday a.m. and p.m. peak hours. The intersection's maximum control delay is 42.3 seconds and 47.9 seconds in the weekday a.m. and p.m. peak hours respectively, the maximum volume-to-capacity ratios are 0.98 (EBL) and 1.01 (NBL) in the weekday a.m. and p.m. peak hours, respectively and the maximum 95<sup>th</sup> percentile queue length is 210 metres and 255 metres in the weekday a.m. and p.m. peak hours respectively. These metrics indicate that the intersection is expected to operate efficiently with acceptable delays and reserve capacity to accommodate future increases in traffic volume.

Compared to the future background conditions, site generated traffic is expected to increase the control delay by 5.9s and 6.1s during the weekday a.m. and p.m. peak periods, respectively. From an overall perspective, site-generated traffic is not expected to materially impact the main intersection of Mayfield Road and Airport Road.

After applying the optimized signal timing plan to Airport Road and Mayfield Road with the existing conditions, the intersection is expected to operate at LOS "D" during the weekday a.m. and p.m. peak hours. The intersection's maximum control delay is by 39.3 seconds and 48.5 seconds in the weekday a.m. and p.m. peak hours, the maximum volume-to-capacity ratios are 0.98 (EBL) and 1.01 (NBL) in the weekday a.m. and p.m. peak hours respectively, and the maximum 95<sup>th</sup> percentile queue length is 275 metres and 230 metres in the weekday a.m. and p.m. peak hours respectively.

The signalized intersection of Mayfield Road and Torbram Road is expected to operate at a level of service (LOS) "D" and "C" during the weekday a.m. and p.m. peak hours respectively. The intersection's maximum control delay is 48.8 seconds in weekday a.m. and 34.9 seconds in the weekday p.m. peak hours respectively, with no critical control delays. The maximum volume-to-capacity ratios are 1.06 (EBT) and 0.91 (EBT) in the weekday a.m. and p.m. peak hours respectively, and the maximum 95<sup>th</sup> percentile queue length is 260 metres and 130 metres in the weekday a.m. and p.m. peak hours respectively.

The unsignalized intersection of Airport Road at Perdue Court/Davis Lane is expected to operate at LOS "F" during the weekday a.m. and p.m. peak hours. As discussed in **Section 2.6**, this is largely attributed to the stop-controlled movements and westbound left turns, this intersection will likely need to be signalized in the future, as signalization is warranted at this time.

The signalized intersection of Mayfield Road at the Street "B" is expected to operate acceptably with LOS "D" and "B" during the weekday a.m. and p.m. peak hours, respectively. Furthermore, no queuing or capacity constraints are forecast at the intersection.

All proposed site accesses, as well as internal north-south and east-west collector roadways are expected to operate with a LOS "B" or better with the exception of Mayfield Road and Street "B" which is expected to operate at a LOS "D" in the weekday a.m. peak hour. The two internal stop-controlled intersections are expected to operate at a LOS "A". Therefore, all site accesses are expected to operate satisfactorily.

**Table 25: Airport Rd./Old School Rd./Healey Rd. Roundabout Future Total Level of Service**

Horizon Year	Weekday A.M. Peak Hour						Weekday P.M. Peak Hour					
	Overall	App. <sup>1</sup>	Delay	LOS	V/C	95 <sup>th</sup> % Queue <sup>1</sup>	Overall	App. <sup>1</sup>	Delay	LOS	V/C	95 <sup>th</sup> % Queue <sup>1</sup>
2026	Delay: 2.96s LOS: A	EB	9.13s	A	0.33	~1	Delay: 2.61s LOS: A	EB	5.81s	A	0.19	~1
		NB	1.95s	A	0.16	~1		NB	2.41s	A	0.37	~1
		WB	1.76s	A	0.07	~1		WB	2.30s	A	0.18	~1
		SB	2.27s	A	0.32	~1		SB	2.16s	A	0.16	~1
2031	Delay: 3.02s LOS: A	EB	9.47s	A	0.34	~1	Delay: 2.64s LOS: A	EB	5.87s	A	0.20	~1
		NB	1.96s	A	0.17	~1		NB	2.45s	A	0.38	~1
		WB	1.76s	A	0.07	~1		WB	2.33s	A	0.19	~1
		SB	2.30s	A	0.33	~1		SB	2.18s	A	0.17	~1
2036	Delay: 3.10s LOS: A	EB	9.89s	A	0.36	~1	Delay: 2.68s LOS: A	EB	5.97s	A	0.20	~1
		NB	1.97s	A	0.17	~1		NB	2.48s	A	0.39	~1
		WB	1.77s	A	0.07	~1		WB	2.37s	A	0.19	~1
		SB	2.34s	A	0.34	~1		SB	2.20s	A	0.18	~1

Note 1: App. – Intersection Approach.

The intersection of Airport Road and Old School Road / Healey Road is projected to operate acceptably under each of the future total scenarios, at a LOS "A" during both the a.m. and p.m. peak hours. Compared to future background conditions, the intersection is expected to operate with no more than one second of additional control delay per vehicle during the peak hours as a result of development traffic. Furthermore, no queuing or capacity constraints are forecast at the roundabout.

#### 5.1.1 Traffic Signal Warrant Assessment – Mayfield Road at Street "B"

Traffic signal warrant analysis was conducted using an Ontario Traffic Manual (OTM) Book 12 configured excel sheet based on the average hourly volume approach for the intersection of Mayfield Road at Street "B".

Based on minimum vehicular traffic and delays to cross traffic, traffic signals are warranted at the intersection of Mayfield Road at Street "B" under full-build out conditions. The intersection has been modelled as such for this analysis.

Signal Warrant analysis excerpts are included in **Appendix H**.

#### 5.1.2 Traffic Signal Warrant Assessment – Torbram Road at Street "C"

Traffic signal warrant analysis was conducted using an Ontario Traffic Manual (OTM) Book 12 configured excel sheet based on the average hourly volume approach for the intersection of Torbram Road at Street "C".

Based on minimum vehicular traffic, delays to cross traffic, and 4-hour volumes associated with the intersection, traffic signals are not technically warranted at the intersection of Mayfield Road at Street "B" under full-build out conditions. As such the intersection has been modelled with stop control for this analysis.

Although signalization is not warranted at this approach based on vehicle volumes, it may be considered in the future to increase pedestrian mobility and safety in the area, particularly in the future once development west of Torbram Road occurs.

Signal Warrant analysis excerpts are included in **Appendix H**.

#### 5.1.3 Auxiliary Right and Left-Turn Lane Analysis – Unsignalized Torbram Road Intersections

Ultimate auxiliary southbound left-turn lane and auxiliary northbound right-turn lane requirements were analyzed at the proposed Torbram Road Connections at Street "C", Site Access 1, and Site Access 2. Under 2026 and 2036 Future Total conditions no auxiliary left or right turn lanes are warranted.

Auxiliary Left-Turn Lane and Right-Turn Warrant analysis excerpts are included in **Appendix H**.

## 5.2 **Torbram Road Sensitivity Analysis**

As discussed in **Section 3.7.1**, we understand that the Town has additional considerations for the ultimate buildout of Torbram Road as a two-lane or four-lane urban cross section. However, the details of the ultimate ROW considerations, and scheduling of this roadway will be subject to the completion of the ongoing Multimodal Transportation Master Plan currently being undertaken by the Town. In addition, completion of a Class Environmental Assessment may also be required for ultimate delivery of an upgraded Torbram Road.



Therefore, a sensitivity analysis was conducted where traffic is generally diverted away from Torbram Road so that Street "C" roadway is not utilized by any of the site generated traffic. Instead, all the traffic is modelled so that the traffic enters and exits via the Street "A" and Street "B" accesses with exception of some of Zone 1's passenger vehicle traffic, which has proposed a direct access to Torbram to serve passenger vehicles. The purpose of this sensitivity analysis is to determine if the full buildout of the development can be supported prior to the formal upgrading of Torbram Road, and if any modifications to the Mayfield and Airport Road intersections would be required to do so.

**Table 26: 2036 Future Total Level of Service – Torbram Sensitivity Analysis**

Intersection	Control	Peak Hour	Intersection Control Delay - LOS <sup>1</sup>	Critical Individual Movement Delays	Critical V/C Ratio <sup>2</sup>	95 <sup>th</sup> Percentile Queue > Storage Length
Mayfield Road at Torbram Road	Signal (Optimized)	A.M.	46.4 s [D]	80.8 s [F] (WBL)	1.01 (EBT)	170m > 100m (EBL) 270m > 125m (EBR) 225m > 105m (WBL) 150m > 80m (NBL)
		P.M.	37.5 s [D]	None	0.93 (EBT)	155m > 80m (NBL)
Mayfield Road at Street "B" <sup>4</sup>	Signal	A.M.	14.7 s [B]	None	0.91 (EBL)	90m (EBL) <sup>3</sup> 70m (EBR) <sup>3</sup> 60m (NBL) <sup>3</sup>
		P.M.	27.2 s [C]	None	0.74 (WBT)	65m (EBR) <sup>3</sup>
Mayfield Road at Airport Road	Signal (Optimized)	A.M.	37.9 s [D]	None	0.98 (EBL)	85m > 60m (EBR) 60m > 60m (WBR) 125m > 95m (NBL)
		P.M.	48.3 s [D]	91.5 s [F] (EBL)	0.98 (EBL, NBL) 0.97 (WBT)	215m > 60m (EBL) 85m > 60m (EBR) 290m > 165m (WBL) 175m > 60m (WBR) 210m > 95m (NBL) 130m > 100m (SBL)
Airport Road at Davis Lane/ Perdue Crescent	Stop Control (Minor)	A.M.	50.6 s [F]	50.6 s [F] (EBL) 76.8 s [F] (WBL)	0.53 (WBL)	None
		P.M.	640.9 s [F]	50.9 s [F] (EBL) 640.9 s [F] (WBL)	2.04 (WBL)	45m > 30m (WBL)
Airport Road at 12333 Airport Road/Street "A" <sup>4</sup>	Signal	A.M.	9.3 s [A]	None	0.57 (WBL)	None
		P.M.	14.6 s [B]	None	0.77 (EBL)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road movement (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.90 for through or shared through/turning movements, as well as greater than 1.00 for exclusive movements are highlighted.

Note 3: The intersection of Mayfield Road at Street "B" has not been constructed yet. Therefore, these queues indicate higher than standard storage distances for auxiliary turn lanes and serve as a recommendation for the storage lengths the intersection should be constructed with.

Note 4: Due to the Draft Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Draft Plan differs from the naming convention used in this analysis. The internal roads listed as Street "A", Street "B", and Street "C" in the latest Draft Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to Appendix G.

The sensitivity analysis indicates that the widening of Torbram Road is not required to support full buildout since the resulting operations of the major intersections and remaining site accesses remain similar when compared to the base case analysis. While we understand that Torbram Road will require widening, the results indicate that the full buildout can be supported prior to the completion of the widening works.

This sensitivity analysis also provides a worst-case assessment for the queuing assessment at the Mayfield Road and Airport Road site accesses. Therefore, the associated 95<sup>th</sup> percentile queues shown in **Table 26** have been used as the basis of the storage length recommendations for the Mayfield Road and Airport Road accesses.

### **5.3 Summary of Recommended Improvements to Accommodate Site-Generated Traffic**

In addition to the background improvements proposed in the road network as summarized in **Section 3.4** and **Table 6**, as well as the improvements to accommodate background growth summarized in **Section 3.7**, the following improvements are recommended for consideration at the noted intersections to accommodate the site generated traffic.

- **Airport Road at 12333 Airport Road/Street “A” (Signalized Access)**
  - Construct a northbound left turn lane with at least 80m storage
  - Construct an eastbound left turn lane with at least 65m of storage
  - Construct a westbound left turn lane with at least 50m of storage
- **Mayfield Road at Street “B” (Signalized Access)**
  - Construct an eastbound left turn lane with at least 95m of storage
  - Construct a westbound right turn lane with min. 45m of storage. This length is proposed to accommodate projected queues and potential LCVs.
  - Construct a southbound left turn lane with at least 45m of storage. This length is proposed to accommodate projected queues and potential LCVs.
- **Torbram Road and Street “C” (Unsignalized Access)**
  - Construct a westbound left turn lane with 15m of storage
- **Internal Road Network**
  - The internal road network should be constructed with one lane in each direction as well as a two-way-left-turn lane to facilitate left turn movements for an overall three lane cross section.
  - All way stop-controlled intersections are proposed for the two internal intersections.
  - Sidewalks on both sides of all internal roadways.

- **Airport Road at Davis Lane/ Perdue Crescent**

- Consider signalization of the intersection to reduce minor street left-turn delays. It is noted that the long delays are generally associated with background traffic volumes and not as a result of the site traffic.
- Increase Westbound left turn lane to 45m storage (5m increase from future background).

- **Mayfield Road at Torbram Road**

- Eastbound left turn lane with 175m storage (30m increase from Future Background)
- Westbound left turn lane with 230m storage (120m increase from Future Background)

- **Mayfield Road at Airport Road**

- Eastbound right turn lane with 85m storage (5m increase from Future Background).
- Westbound left turn lane with 290m storage (can be accommodated as part of 2026-2031 road widening, 105m increase from Future Background).
- Westbound right turn lane with 180m storage (can be accommodated as part of 2026-2031 road widening, 35m increase from Future Background).
- Southbound left turn lane with 135m storage (35m increase from Existing & Future Background).
- Implement a protected WBL turn phase in both peak hours and optimize the signal timing. This includes reducing the pedestrian walk times to 3 seconds, the pedestrian do not walk times remain unchanged from existing.

- **Mayfield Road Corridor**

- Implement coordination of the Mayfield Road corridor from Torbram Road to Airport Road including cycle length increases throughout the corridor to 120 seconds and 135 seconds in the a.m. and p.m. peak hours, respectively to match the Airport Road and Mayfield Road intersection. Recommended for Future Background conditions as well.

- **Torbram Road Corridor**

- It is understood that the Town has additional considerations for the ultimate buildout of Torbram Road as either a two-lane or four-lane urban cross section. The Town's Official Plan indicates Torbram will be a Town Arterial Road with a 30m ROW, as such, this study has assumed a two-lane urban cross section to ensure a conservative assessment until additional details are available. The details of the ultimate ROW considerations, and scheduling of this roadway will be subject to the completion of the ongoing Multimodal Transportation Master Plan currently being undertaken by the Town. Relevant excerpts from the Town's Official Plan can be found in **Appendix N.**

## 6.0 Sight Distance Review

The available sightlines at the future intersections of Airport Road at 12333 Airport Road/Street "A" and Mayfield Road at Street "B" were measured and compared to the standards set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017.

Per Case D of the TAC GDGCR, at signalized intersections the first vehicle stopped on one approach should be visible to drivers of the first vehicle stopped at the other approaches. These conditions are satisfied and therefore sight distance is not expected to be an issue. In addition, as these proposed connections represent the fourth leg of an existing or planned intersection, final design of these intersections will be required to ensure adequate sight distance exists and that proposed lane configurations can accommodate the swept paths of the design vehicles (WB-20 trucks).

Per Town and Region's comments, the intersection angles are required to be within 85-95 degrees. The proposed connections to Mayfield Road, Torbram Road, and Airport Road also satisfy these requirements.

As the internal public roadways are relatively straight with little horizontal curvature, no issues with sight distance are expected for the proposed accesses to the north-south collector and east-west collectors. Moreover, individual Site Plans are expected to be further refined and final designs will ensure that site accesses provide adequate sight distance and facilitate safe internal circulation.

## 7.0 Parking & Loading Review

Per the Town of Caledon's Zoning By-Law minimum parking requirements, the proposed development can be categorized as "Warehouse". The requirements per the Town's Zoning By-law are noted below:

If accessory office and retail net floor areas are 15% or less of the total net floor area:

- 78 spaces + 1 space per 145 m<sup>2</sup> of net floor area or portion thereof over 7,000 m<sup>2</sup>
- 168 spaces + 1 space per 170 m<sup>2</sup> of net floor area or portion thereof over 20,000 m<sup>2</sup>

Per the Town of Caledon's Zoning By-Law minimum loading space requirements, industrial buildings with similar land use to the proposed development with a net floor area of 7,441 m<sup>2</sup> or greater are required to provide:

- 3 loading spaces + 1 space/9,300 m<sup>2</sup> or portion thereof in excess of 7,441 m<sup>2</sup>

Given that, all of the proposed buildings exceed the 7,441 m<sup>2</sup> threshold, this requirement was used to evaluate the loading supply for all buildings in the proposed industrial park.

The above parking requirements assume that the gross floor areas equal net floor area as the Draft Plans are not sufficiently advanced to identify net floor area for each building. The statistics also assume that office areas do not exceed more than 15% of the total net floor area warehouse building.

Per the Town's Zoning By-law for the Park Lands portion can be categorized as "Park", the requirements are listed below:

- 5 parking spaces per hectare or portion thereof
  - Note this is equivalent to 5 parking spaces per 10,000 m<sup>2</sup> or portion thereof.

Accordingly, the loading and parking space requirement and supply by building is outlined is outlined in **Table 27** below.

**Table 27: Minimum Zoning By-law Parking and Loading Requirements**

Building(s)	Size (SM GFA)	Parking Supply				Required Parking
		Loading Bays	Required Loading	Car Parking	Trailer Parking	
A	100,702	157	14	540	505	643
C	75,423	81	11	505	488	495
D	93,759	209	13	506	152	602
E	94,365	100	13	300	300	606
F	74,090	178	11	528	159	487
H	67,147	216	10	477	236	446
I	33,516	74	6	341	55	248
J	9,197	26	4	140	15	94
K	14,181	50	4	83	27	128
Park Land	545,835	0	0	214	0	273
<b>Total</b>	<b>562,381</b>	<b>1,091</b>	<b>86</b>	<b>3,634</b>	<b>1,937</b>	<b>4,022</b>

As outlined above, the Town's Zoning By-Law requires the proposed development to provide a total of 86 loading spaces and 4,022 parking spaces. Since the Site Plan proposes the use of 1091 loading spaces and 3,634 parking spaces, the development proposed of a loading surplus of 1,005 spaces and a parking deficit of 388 spaces. Therefore, the proposed loading supply satisfies the Zoning By-law requirements for the site while the proposed parking supply does not. It is noted that the parking and loading requirements have been assessed on a high level and the parking and loading supply for each building will be assessed in detail on an individual basis during the Site Plan Application stage.

The Town By-Law excerpts are included in **Appendix O**.

## 8.0 Proposed & Potential Mobility Network

At the Town's request, this section reviews the potential for a mobility road network from a wider context, for lands beyond the proposed industrial subdivision. The proposed mobility network provides details for proposed internal infrastructure in the Subject Development, as well as potential collector roadways and transit routes to service the Town of Caledon from a wider context.

This section herein highlights additional considerations for a transportation network beyond the subject lands, per request by the Town. It is underscored that while lands beyond the proposed development are **not** the subject of this development application, the Town has requested a review of a potential transportation network beyond the lands to ensure that policy objectives can be met, and that the proposed development does not preclude the development of an extended collector road network. The purpose of this review, therefore, is to illustrate that a future transportation network beyond the subject lands could be implemented, while satisfying the City and Region's policy objectives.

***It is underscored that any visualization of a potential road network beyond the development proposal represents a potential road network that could be established as part of future development process and is not intended to represent a specific proposal of collector road alignments through adjacent lands. Moreover, illustrations of collector roadways represent a connection in-principle, and not specific alignment proposals. Further study by the Town and/or relevant landowners would be required to refine locations of collector roadways where required.***

### 8.1 Internal Collector Road Network

The subject development will be supported by 3 collector roadways. Street "A", Street "B", and Street "C" connect to Airport Road, Mayfield Road, and Torbram Road, respectively. Street "A" and Street "C" will function as east-west collector roadways which connect to the proposed north-south collector roadway, Street "B", which acts as a spine through the development lands. The internal collector roadways are represented on the Draft Plan attached as **Figure 1**.

The proposed specifications for the internal collector roadways can be shown in **Table 28** below.

**Table 28: Internal Collector Road Network**

Street	Direction	External Road Network Connection	Control	Spacing to Closest Intersection	Proposed Right of Way
Street "A"	East-West	Airport Road	Signal	>400m to Airport Road at Davis Lane/ Perdue Crescent	26m
Street "B"	North-South	Mayfield Road	Signal	>650m to future Mayfield Road and Torbram Road	26m
Street "C"	East-West	Torbram Road	Stop	>500m to future Site Access 1	26m

### **Intersection Spacing**

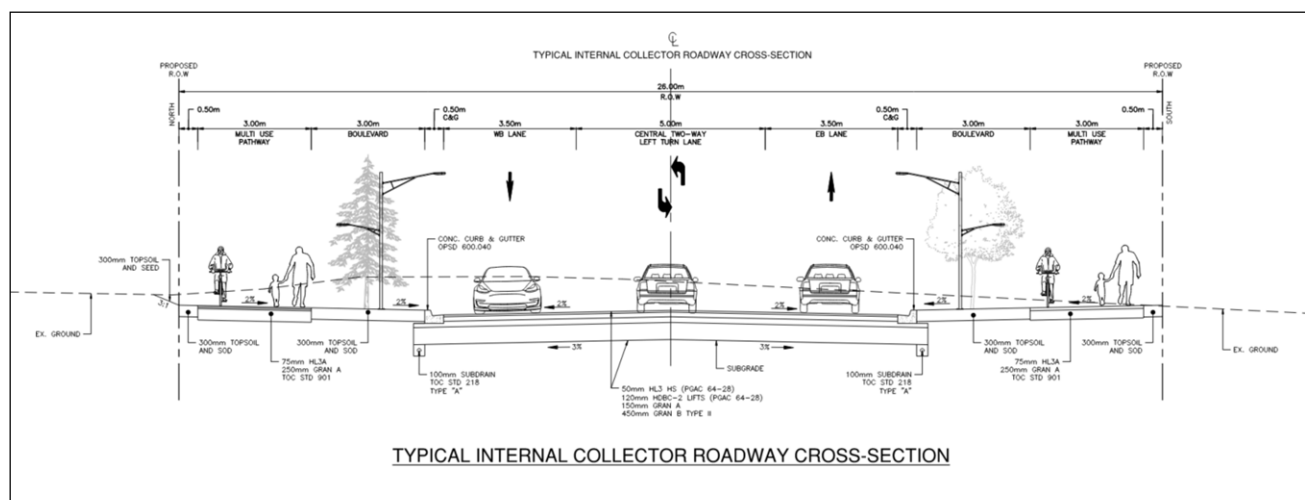
Within the study area per the Region's Road Characterization Study, Airport Road is classified as a Suburban Connector which requires a spacing of 300m between full moves intersections. Similarly, Mayfield Road is classified as an Industrial Connector which required a 400m spacing between full moves intersections.

Per discussion with Town staff, the desired spacing for collector road intersections is 400m. Since the proposed internal collector roadways all have a spacing of 400m or greater to the nearest intersection, spacing requirements for both the Region and Town are satisfied. The proposed intersection locations therefore do not preclude future signalization opportunities, if warranted.

Per **Section 5.1.1**, the intersection of Mayfield Road at Street "B" is warranted for signalization and has been proposed as such, consistent with the future requirements of the Block 48-2 road network. The intersection Airport Road at Street "A" proposed to be signalized as the existing intersection is already signalized, and Street "A" will form the fourth (western) leg of this existing T-intersection. The intersection of Torbram Road at Street "C" is proposed to be stop controlled but has the required access spacing to be signalized in the future, should it be warranted. It should be noted that a signal is not warranted at the intersection within our study horizon; however, in the future as development to the west occurs and Street "C" extends west of Torbram Road, signalization may be explored to provide safe pedestrian crossing opportunities in the future. Signal Warrant analysis excerpts are included in **Appendix H**.

## 8.2 Cross Section Requirements

Per correspondence with the Town of Caledon, an urban cross section similar to what is used at George Bolton Parkway in the Town is preferred for the Subject Development's internal collector roadways. The Subject Development will adopt this cross section for all three internal collector roadways, Street "A", Street "B", and Street "C". This cross section proposes two 3.5m curb lanes, a 5.0m two-way left turn lane, and 3.0m multiuse pathways (MUPs) on both sides of the roadway. The MUPs will also be separated from the roadway by 3.0m boulevards. This cross section supports all modes of transportation, and provides added separation between active transportation and vehicular traffic, which is of increased importance to a development such as the subject proposal that anticipates frequent heavy truck traffic. Details for the cross section can be found in **Figure 18**.



**Figure 18: Proposed 26m Cross-Section**

The Town of Caledon official drawings for the cross section can be found in **Appendix P**.

## 8.3 Mobility from a Wider Context

### 8.3.1 Considerations for Continuous Collector Roadways

At the Town's request, this section reviews the potential for a collector road network from a wider context, for lands beyond the proposed industrial development. It should be noted that a potential road network beyond the subject lands represents a potential collector network only and is not being proposed as part of this development application. The potential collector network illustrated should serve as a concept that could potentially be implemented, which builds upon the mobility network proposed in the Subject development application. Prior to proposing a detailed collector road network, further review and study from the Town or relevant landowners will be required. The illustrations of potential road network concepts beyond these lands do not represent proposed locations, or crossings. The illustrations, however, represent one of many potential concepts that could be implemented with the future buildout of the surrounding area. Moreover, the illustrated network does not preclude the addition of further collector and local roadways that would otherwise contribute to the creation of a modified grid system.

Per discussion with the Town of Caledon, continuous east-west connectivity is desired as the Town looks to establish a wider mobility network beyond the Subject Lands. However, in the southern part of Caledon within the study area it should be noted that there are several Natural Heritage System constraints that may impact the feasibility of ultimately implementing continuous network, without conducting further review. Such constraints are also compounded by intersection spacing requirements discussed in **Section 8.1**, property constraints, as well as practical grading considerations of how existing roadways currently cross these constraints.

Further to the above, the Town's Draft Official Plan (2022) describes collector roads as follows:

- Roadways under the Town's jurisdiction
- Serve low to moderate volumes of short distance traffic between local and arterial roads
- Provide individual property access with some limitations
- Will have a 20 to 26 metre road allowance with 2 to 4 lane capability
- On-street parking may be permitted
- Require the provision of pedestrian facilities on both sides of the road, as deemed feasible

The proposed internal network satisfies all these requirements and can be achieved for lands beyond the subject development.

In reviewing the opportunities for a connected collector road network beyond the Subject Lands, opportunities were reviewed from a number of perspectives including:

- Property constraints
- Natural Heritage System constraints
- Grading considerations
- Intersection spacing considerations



With these considerations in mind, opportunities for a potential collector network have been identified, that demonstrates the ability for both east-west and north-south connectivity beyond the Subject Lands in a modified grid pattern. Per discussion with the City, an expanded study area generally bound by Mayfield Road, Bramalea Road, Old School Road and Innis Lake Road was considered. The sections that follow.

The Potential Future of Caledon Network was evaluated based on multiple criteria to optimise the network. The preference of the Town of Caledon is for the collector roadway network to feature continuous roadways; while the Subject Lands are able to provide the foundation for a continuous north-south collector, environmental and grading constraints limit opportunities for multiple continuous east-west collectors within the extended study area.

### 8.3.2 Collector Roadway Considerations

The subject lands propose a foundation for a continuous north-south collector through the lands, beyond which there are opportunities for extended east-west collector roadways. However, within the subject lands, the proposed east-west collector network is based on local constraints and design requirements for each block.

Street "A" forms the west approach of the existing Airport Road intersection with 12333 Airport Road access. It is noted that the east approach of this intersection is a private roadway and does not provide connectivity east of Airport Road. Moreover, this road does not extend beyond Salt Creek and therefore there would be no opportunity to provide continuous east-west connection to Innis Lake Road.

Similarly, due to the Environmental Policy Area 1 Zone in the northeast corner of the site fronting Airport Road, Street "C" is limited in the extent of its east-west connectivity beyond its current eastern terminus at Street "B". Street "C" however has the potential to extend west of Torbram Road; but an extension to Bramalea Road will be subject to further review, given the Natural Heritage constraints within this area west of Torbram Road.

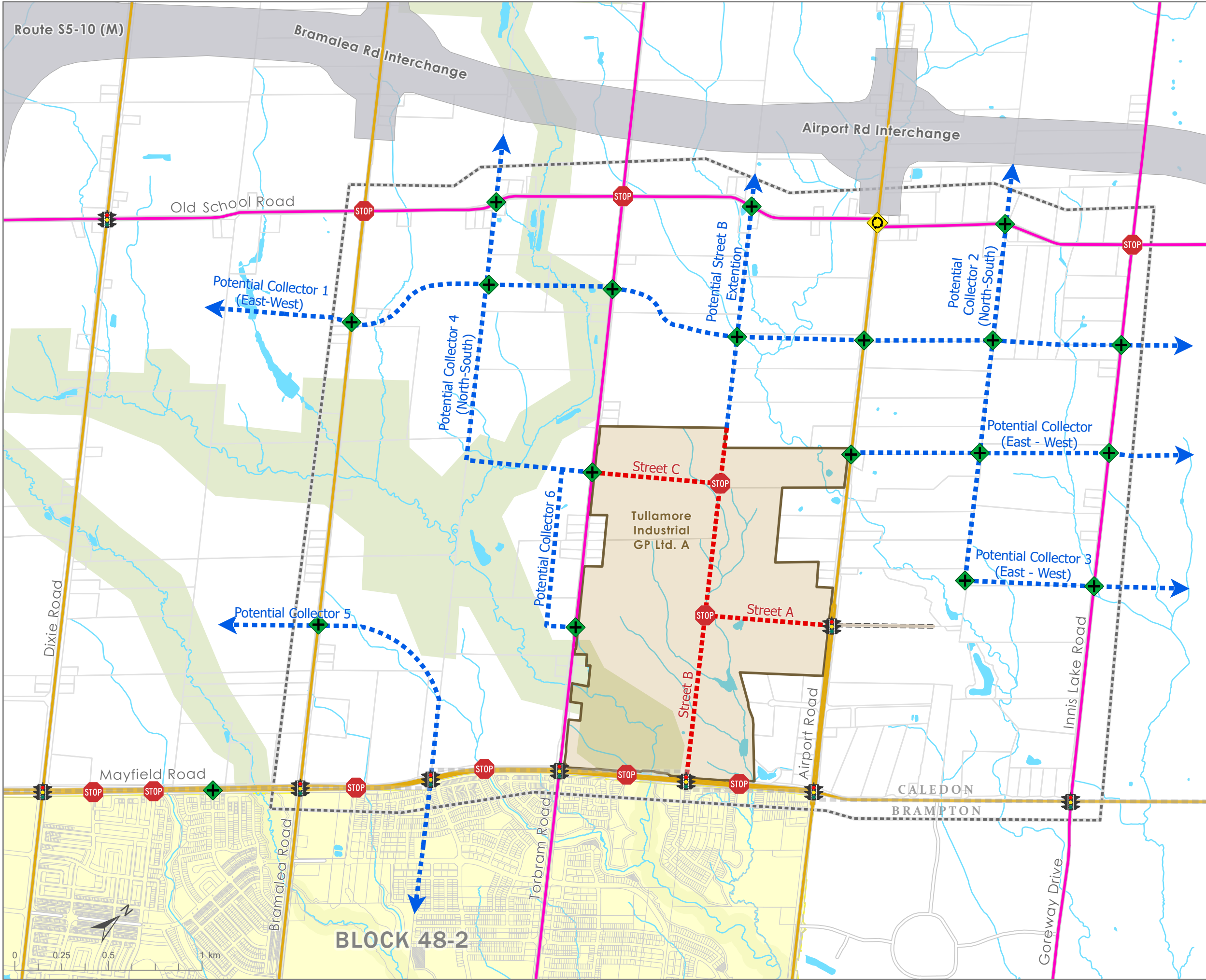
In addition to the above, grading constraints for crossing opportunities have been cited along the north-south arterials of Innis Lake Road, Airport Road, Torbram Road, and Bramalea Road. As these roadways do not cross the Natural Heritage Systems in the same locations, opportunities for continuous east-west collectors over larger distances within the extended study area will be subject to additional study.

Relevant excerpts from the Town's Zoning By-Law Maps can be found in **Appendix D**.

### 8.3.3 Potential Collector Network Opportunities

An illustration showing a potential Town of Caledon collector roadway network is shown in **Figure 19**. It is noted that additional collector connections beyond those illustrated in Figure 19 are possible, subject to the requirements for individual parcel and/or land assembly access, within a similar or modified mobility framework. As previously noted, the presence of Natural Heritage Systems west of Torbram Road may result in constraints to achieving multiple continuous east-west collectors between Innis Lake Road and Bramalea Road; however, east-west connectivity is provided as part of this potential network, and the collector functions can operate consistent with the functional requirements identified per the Town's Draft Official Plan (2022) as discussed in **Section 8.3**.

The Potential Future Town of Caledon Collector Road Network is represented in **Figure 19**.



1. This drawing is the exclusive property of C.F. Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.
2. Any visualization of a potential road network beyond the Subject Lands represents a potential road network that could be established as part of plans and is not intended to represent a specific proposal of collector road alignments through adjacent lands.
3. The potential collector road network illustrated is intended to show the capability of establishing a network of collector roads beyond the Subject Lands.
4. The illustration of a potential collector roadway on this map is not intended to represent a specific alignment, but represents a connection in principle, subject to additional review. Alignments and crossings of Natural Heritage Systems or Highway 413 Corridor would be assessed as part of future study.
5. Further study by the Town and/or adjacent landowners will be required to support collector road network proposals for lands beyond the subject lands, as part of future development applications and planning efforts.
6. Please be advised, the drawing is prepared based on public information available at the time of the drawing and is to be used for discussion and illustration purposes only.
7. The preferred route outline of Highway 413 is based on current preliminary alignments illustrated by the MTO at the time of preparing this drawing and are subject to change.
8. Proposed Traffic controls at Mayfield Road are based on approved reports associated with Block 48-2 development applications.
9. Future Intersection controls at potential collector road network intersections would be subject to further review and warrant analyses.

- Potential Future Collector Roadway
- Tullamore Lands Proposed Internal Collector Roadway
- Existing Major Arterial
- Existing Minor Arterial
- Private Access Road to 12333 and 12203 Airport Rd
- Signalized Intersection
- STOP Stop-Controlled Intersection
- Roundabout Controlled Intersection
- Future Intersection (Control type to be confirmed in the future)
- Highway 413 Preferred Route
- Extended Study Area
- Municipal Boundary
- Tullamore Lands
- Block 48-2 Residential
- Watercourse
- Waterbody
- Greenbelt Outer Boundary
- Parcels



Tullamore Lands  
**Potential Collector Road  
Network Opportunities**

Figure 19

The Town's Transportation Master Plan and Draft Official Plan (2022) defines collector roads as roads which "serve low to moderate volumes of short distance traffic between local and arterial roads.". Streets A, B and C within the Subject Lands allow for connectivity to the boundary arterial network in an efficient manner and provides pedestrian facilities on both sides of the roadway. As illustrated in **Figure 19**, collector road connectivity from a wider context beyond the subject lands is not precluded with the establishment of the proposed collector road network within the development. As it is expected that active transportation facilities will be supported on both sides of future roadways, and future collector roads will support future transit service, there is potential to establish a wider collector road network that serves the needs of all road users including pedestrians, cyclists, transit riders and motorists.

In addition, due to the scale of industrial development being proposed, it is expected that passenger car and truck traffic utilizing Streets A, B and C would be destined to the subject site and potential future development abutting the lands to the north, instead of using the collector roads as a thoroughfare to bypass surrounding arterials. This is not atypical for more modern large scale business parks, which require much larger blocks due to larger GFA requirements for industrial warehouses and distribution centres. This trend can be seen in similar existing developments within the Town that are surrounded by Natural Heritage Systems such as the as the Employment Lands at within the Coleraine West Employment Area – within which George Bolton Parkway is the only east-west collector road between Mayfield Road and Healy Road.

Notwithstanding the above, the Town's vision for more continuous east-west collectors is achievable. We recommend further study by the Town and/or adjacent landowners to assess local constraints and further develop a wider collector network beyond the subject lands.

#### **8.4 Potential Collector Network Policy Conformance Opportunities**

It is re-iterated that any visualization of a potential road network beyond the development proposal represents a potential road network that could be established as part of future study by the Town or adjacent landowners. It is recognized that the establishment of any potential network will be required to demonstrate its abilities to meet the Town's transportation policy objectives per the Town's prevailing Official Plan and Draft Official Plan (2022). Key aspects of the potential collector network's conformance with these Official Plans are highlighted in a checklist provided in **Appendix Q**, which demonstrate that the proposed development does not preclude the establishment of a wider collector road network that satisfies the Town's transportation policy objectives.

The Potential Future of Caledon Network was evaluated based on multiple criteria to optimise the network. The preference of the Town of Caledon is for the collector roadway network to feature continuous roadways; while the Subject Lands are able to provide the foundation for a continuous north-south collector, multiple environmental and grading constraints prohibit a continuous east-west collector through the lands.

#### **8.5 Potential Collector Roadway Network Policy Conformance**

It is re-iterated that any visualization of a potential road network beyond the development proposal represents a potential road network that could be established as part of future block plan, secondary plan or LOG work and is not intended to represent a specific proposal of collector road alignments through adjacent lands.

The potential future network has been evaluated and designed to meet transportation policies in the prevailing Town of Caledon Official Plan, key aspects of the Official Plan conformance within the potential collector roadway network are highlighted in a checklist provided in **Appendix Q**.

A future secondary plan or LOG work would be required to establish a wider transportation network, the checklist provides rational to support that the potential collector roadway network can achieve the Town's policy objectives.

## 9.0 Transportation Demand Management Considerations

To reduce single-occupant vehicle (SOV) use, the following Transportation Demand Management (TDM) Plan proposes several low-impact opportunities to promote alternative modes of transportation for the overall industrial area. The considerations are generally high-level for the entire area and will be refined in greater detail as part of refinements to the Draft Plan and as part of the individual Site Plan Applications for each building in the future.

### 9.1 Active Transportation Plan

As discussed in **Section 8.2**, the subject lands will adopt a 26.0m urban cross section including a 3.0 metre multi-use path on both sides of all internal collector roadways. The multi-use path's enable pedestrian and cyclist mobility and connectivity with the surrounding lands.

The existing boundary road networks use mixed-use pedestrian cyclist paths to provide access for active transportation. As such, the proposed multi-use paths connecting between buildings in the site and connecting to the existing path network will promote active transportation in the area. Further pedestrian and cyclist friendly design standards should also be employed with the paths, such as the provision of proper lighting, avoiding steep grades or stairwells, or narrow hallways.

The latest Draft Plan also envisions a park for the southwest corner of the development. There are opportunities for future road trail paths with connections to the park from the development and surrounding community.

The Subject Lands' Active Transportation Plan is illustrated in **Figure 20**.






## NOTES:

1. This drawing is the exclusive property of C.F Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.
2. Please be advised, the active transportation features beyond the subjects lands illustrated have been prepared based on public information available at the time of the drawing and is to be used for discussion and illustration purposes only.
3. This figure is not to be scaled.



TULLAMORE LANDS  
TOWN OF CALEDON

# ACTIVE TRANSPORTATION PLAN



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Check By	T.D.S.	Check By	M.L.	Scale	N.T.S.	Drawing
					FIG 20	



### 9.1.1 Active Transportation Future Considerations

Several initiatives can be implemented at the site to promote active transportation within the proposed development area.

Specifically, for pedestrians, weather protection may also be provided at high-pedestrian volume areas such as main intersections, building entrances, and other major locations within the site. Street furniture such as benches and facilities may also be provided for refuge and creating distinct pedestrian zones, though the positioning of these facilities should not impede accessibility. The materials, colors, and styles of these fixtures should ideally be complementary to the architectural style of the proposed development and overall community.

For cyclists, secure bicycle parking facilities may be considered for employees. Additionally, the addition of showering, changing and clothing storage facilities on-site would ease the use of cycle commuting for employees.

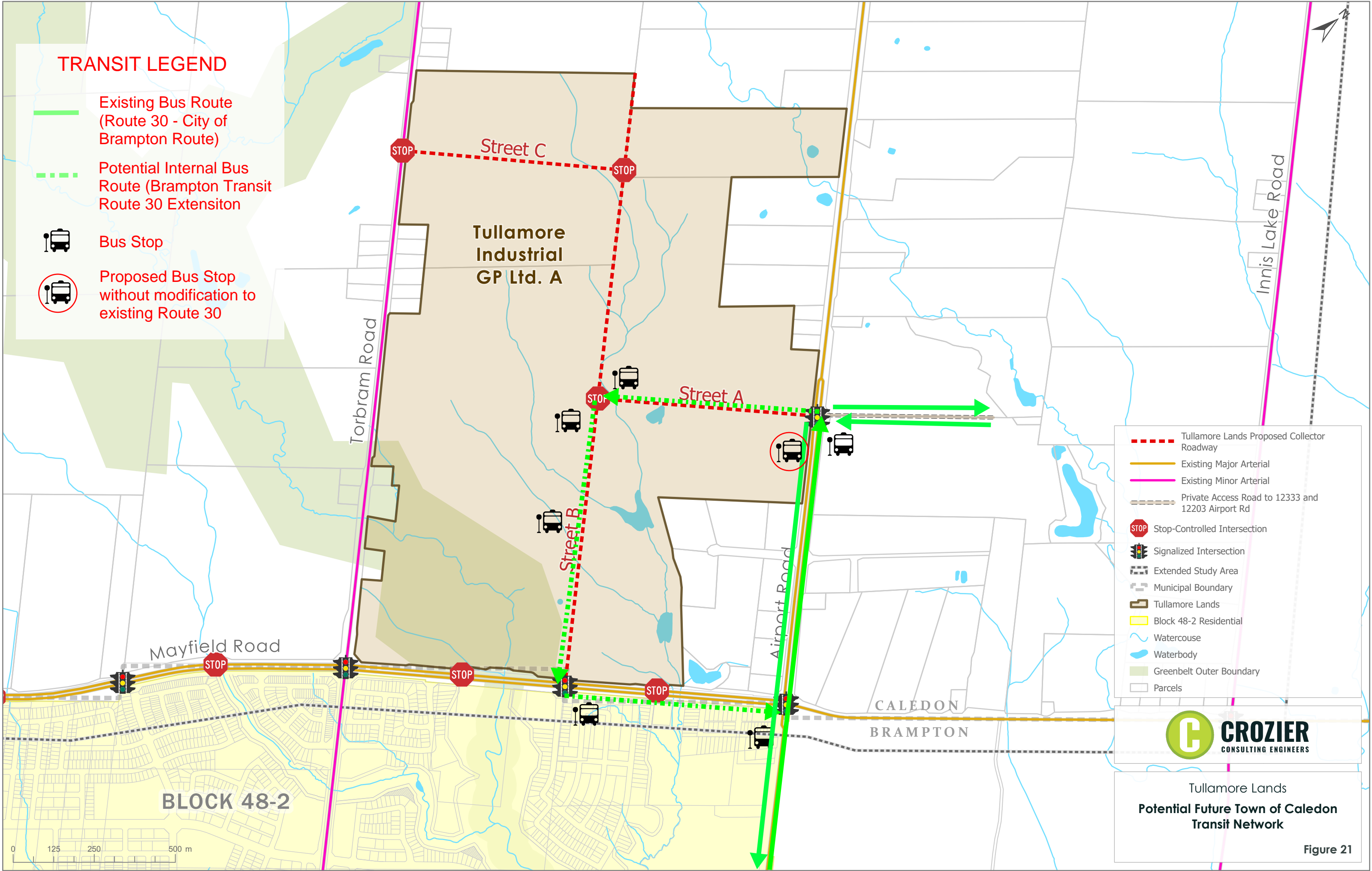
The Town of Caledon currently does not have minimum bicycle parking requirements. However, the minimum bike parking facilities for industrial use per the Peel Region Health Study Framework is 0.06 units per 100 sq. m. for occupants, and 0.1 for 100 sq. m. for visitors. This therefore would require 338 employee and 563 visitor bike spaces at the proposed development from this perspective. It is recommended that bicycle parking be provided for the subject site to support cycling as primary mode share, particularly for future employees that reside within a reasonable cycling distance from the development (e.g., within Block 48-1 and Block 48-2). However, final cycling supply requirements should be discussed with the Town as the Draft Plan and individual building Site Plans advance in lieu of Zoning By-law requirements from the Town.

## 9.2 **Future Transit Considerations**

The implementation of transit TDM measures are to promote public transit as an accessible and desirable mode of transit to the proposed site. While limited transit is available to the subject site along Mayfield Road and Airport Road, the development is expected to accommodate a number of employees in the future that would benefit from increased transit service availability.

The internal north-south and east-west collector roadways propose a 26.0m ROW as discussed in **Section 8.2**. This cross section can accommodate future transit vehicles along the internal roadways, and the ROW is adequate to accommodate future transit stops/bus pads internal to the site once transit routes are further established. The site's orientation offers opportunities for a bus loop route internal to the site for existing transit routes (e.g., Brampton Transit Route 30), as is similarly existing with the industrial development east of Airport Road (12333 Airport Road). It is recommended that the existing Route 30 be extended into the subject lands to facilitate the development. **Figure 21** illustrates a potential transit route to service the site, this route would serve as extension to the existing Brampton Transit Route 30.

It is noted that the Town of Caledon prefers bus stops located within 300-400m walking distance of the principal entrances to each building. Given the proposed 26m ROW and cross section discussed in **Section 8.2**, ample opportunities to ensure bus stops are located close to the intersections and building entrances are available. As Street "B" is the main north-south spinal road servicing the developments, it should be adequately equipped to provide bus stops spaced less than 400m away with mid-block bus stops provided as necessary.



Based on discussions with Brampton Transit and the Town of Caledon there are multiple opportunities to service the Subject Lands. It should be noted that further discussions with the transit agencies are recommended to identify and plan for future transit routes within the site. Three potential routes to servicing the Subject Lands were discussed:

- Option 1: In the interim condition a bus stop should be provided at the southwest corner of the intersection of Airport Road at Street "B". The current Brampton Transit route would be maintained as it services the properties at 12333 Airport Road and can service the Subject Lands as it turns left onto Airport Road before continuing south. Since, Buildings D and H are planned to be built out first among the buildings proposed for the Subject Lands, the bus stop in the southwest corner would be an immediate and implementable transit solution as it would not require any modification to the existing Route 30 and would be within 400m of entrances to Buildings D and H as required by the Town of Caledon. This bus stop is depicted in **Figure 21** outlined with a red circle.
- Option 2: As shown in **Figure 21**, a route extension to Route 30 which forms a loop in the southern half has been discussed as a preferred route to service the lands as they are built out further. It is noted that the Buildings C, F, and E in the northern portion of the subject lands are planned as the last phase of the buildings within the subject development and this route would not adequately service those buildings. The Route is illustrated in the figure so that it continues the regular route before turning left onto Street A, turning left onto Street B, and turning left onto Mayfield Road before turning right onto Airport Road and continuing south. It is noted that this loop can be flipped so that the bus would turn left onto Mayfield Road with proceeding right turns through the Subject Lands before returning to Airport Road to continue south. This would reduce delays as right-turns are generally preferred to left-turns, but the orientation of the route is subject to review by operational planning team at Brampton Transit.
- Option 3: It is expected that as the area is built out there will be opportunities to service the northern portion of the lands (Buildings C, F, and E) through the north-south spinal road, Street "B", through further discussion with Town of Caledon.

Implementation of transit service is expected to contribute to reduced automobile mode share, which was not accounted for in the preceding analysis as implementation of transit within the site has not been confirmed at this time.

Additionally, further consultation can be undertaken with Brampton Transit to provide additional facilities at the transit stops servicing the site, including weather-protection shelters and benches.

### 9.3 Electric Vehicle Parking and Carpooling

The focus of parking and carpooling related TDM measures would be to reduce SOV commuting patterns and avoid parking surplus.

- Electric Vehicle (EV) Infrastructure
  - There is an opportunity to include energized outlets capable of providing charging for electric vehicle spaces. These parking spaces are recommended to be priority spaces for electric vehicles. This will be evaluated during the individual building Site Plan Approval process.



- Carpooling Opportunities
  - As the site is not located with access to significant transit opportunities, the provision of carpool opportunities is recommended to provide reasonable TDM opportunities for employees to reduce SOV trips. The provision of dedicated or priority carpool parking spots may also be implemented to promote carpooling. These carpooling spots should offer benefits such as being located in favorable locations (close to main entrances or buildings). As referenced in the following section, resources to access carpooling may be facilitated through resources such as Smart Commute or through the employer(s) at the proposed site.

## 9.4 Smart Commute

Smart Commute is a not-for-profit Transportation Management Association (TMA) committed to acting on climate change, mitigating traffic congestion, and improving air quality. The proposed industrial development is situated in the Smart Commute Brampton-Caledon division. Smart Commute collaborates with various organizations and employers across 13 regions of the Greater Toronto and Hamilton Area (GTHA) to provide resources and tools to promote alternative transportation modes. Smart Commute offers the following services:

- Evaluate workplaces to determine willingness of employees to change commute patterns and work with places of employment to assess existing active transportation facilities and TDM measures and working on areas of improvement.
- Online tools providing easy access to carpooling opportunities, carpooling locations, and providing information on the benefits of carpooling.
- Online tools to help employees set walking and cycling goals, and access resources such as cycling maps and handbooks.
- Promote flexible work arrangements through adjusting shift times and providing remote work options via Telework, overall reducing gridlock and boosting productivity in situations such as road closures.
- Support transit pass programs and accessibility, as well as providing education on transit options.

Smart Commute Peel will work with various organizations and employers in the region to reduce SOV trips and promote active transportation. As such, collaboration between Smart Commute and the place(s) of employment situated at the proposed development poses the opportunity to promote alternative modes of transit and reduce automobile dependency. The new Smart Commute trip planning tool is currently undergoing upgrades and currently only operational for Durham Region, City of Hamilton and York Region; however, upon completion of the upgrades the tool will allow future employees to efficiently plan carpool routes and provide alternative commute options.

## 9.5 Operational Planning

It is recommended that the proponents of the buildings implement off-peak shift changes to reduce automobile traffic demand during the regular weekday a.m. and p.m. peak hours.

## 9.6 Education/Resources and Wayfinding

Other educational materials and resources may be provided at the site, including way planning and travel planning resources.

Including maps on the employer's website of nearby transit access points will encourage visitors to use public transit to access the site. Similarly, marketing of employment can be highlighted with the TDM measures implemented at the site, such as access to transit, safe cycling and pedestrian facilities, carpooling facilities, and other incentives offered with employment.

Furthermore, these initiatives can be supplemented on site using effective wayfinding signage on site, clearly illustrating directions to walking/cycling pathways, and the directions to transit stop(s) near the site.

## 10.0 Conclusion and Recommendations

The conclusions of our analysis are summarized below:

- The intersection of Airport Road with Mayfield Road is currently operating at LOS "C" during the weekday a.m. and p.m. peak hours. The intersection's maximum control delay is 24.0 seconds and 31.3 seconds in the weekday a.m. and p.m. peak hours respectively.
- The remaining signalized intersections are operating at a LOS "C" or better during the peak hours.
- The unsignalized intersections of Airport Road at Perdue Court/Davis Lane is currently operating at LOS "F". Based on existing volumes, signalization is warranted at this time based on current volumes, it should be considered due to increased traffic expected on Airport Road.
- A total of 3 background developments have been reviewed and added to the boundary road network. In addition, growth rates were also applied to the base traffic volumes to forecast 2026, 2031 and 2036 future background conditions.
- During the peak hours in the future background traffic conditions for the ultimate 2036 horizon year, all intersections will continue to operate at LOS "D" or better with the exception of Airport Road at Davis Lane/ Perdue Crescent.
- The unsignalized intersection of Airport Road and Perdue Court/Davis Lane is expected to continue operating at LOS "F". However, as previously mentioned to maintain acceptable traffic operations, signalization should be considered.
- The development is expected to generate approximately 719 and 737 total two-way passenger car trips during the weekday a.m. and p.m. peak hours, respectively, and approximately 179 and 186 total two-way heavy truck trips during the weekday a.m. and p.m. peak hours, respectively.

- In the Future Total horizon, the signalized intersection of Airport Road and Mayfield Road is expected to operate at a level of service (LOS) "D" during the weekday a.m. and p.m. peak hours. Compared to the future background conditions, site generated traffic is expected to increase the control delay by 5.9s and 6.1s during the weekday a.m. and p.m. peak periods, respectively. From an overall perspective, site-generated traffic is not expected to materially impact the main intersection of Mayfield Road and Airport Road. The maximum volume-to-capacity ratios for individual movements are 0.98 (EBL) and 1.01 (NBL) in the weekday a.m. and p.m. peak hours, respectively. These ratios indicate that the intersection is expected to operate at capacity during the weekday a.m. and p.m. peak hours.
- The proposed signalized site access to Airport Road is expected to operate at LOS "A" and "B" in the weekday a.m. and p.m. peak hours, respectively.
- The proposed signalized site access to Mayfield Road is expected to operate at LOS "D" and "B" in the weekday a.m. and p.m. peak hours, respectively.
- The remaining proposed unsignalized site accesses are expected to operate at LOS "B" or better the weekday a.m. and p.m. peak hours. The proposed development can be supported from a traffic operations perspective with the recommended improvements as the site-generated traffic is not expected have a material effect on the operations of the existing roadway network. The internal roadways can facilitate future transit routes, and coordination with transit agencies are recommended to plan and protect for the implementation of future transit services internal to the site.
- Furthermore, the sensitivity analysis indicates that the widening of Torbram Road is not required to support full buildout of the development lands. Specifically, the full buildout of the lands can be supported prior to the widening of Torbram Road, with the recommendations noted below on the Airport Road and Torbram Road intersections.
- Based on an overall review, the parking and loading supply proposed at the site will satisfy the Town's Zoning By-law requirements. Furthermore, the loading and parking supplies provided at each building will be reviewed in greater detail as part of their individual Site Plan Applications.
- A number of TDM opportunities including transit implementation, provision of priority carpool parking, Smart Commute integration and promotion, and bicycle parking should be explored and further refined through subsequent submissions.
- The Town of Caledon currently does not have minimum bicycle parking requirements. However, the minimum bike parking facilities for industrial use per the Peel Region Health Study Framework is 0.06 units per 100 sq. m. for occupants, and 0.1 for 100 sq. m. for visitors. This therefore would require 338 employee and 563 visitor bike spaces at the proposed development from this perspective. It is recommended that bicycle parking be provided for the subject site to support cycling as primary mode share, particularly for future employees that reside within a reasonable cycling distance from the development (e.g., within Block 48-1 and Block 48-2). However, final cycling supply requirements should be discussed with the Town as the Town as the individual building Site Plans advance in lieu of Zoning By-law requirements from the Town.

## 10.1 Recommendations

As a result of the above operations and site generated traffic several recommended improvements have been made to support the proposed development. It is noted that these improvements are in addition to the background improvements identified and recommended per the Airport Road and Mayfield Road EAs, the Region's Transportation Master Plan and the approved Block 48-2 TIS. The ultimate auxiliary lane storage lengths recommended below are based on the sensitivity analysis prior to completion of Torbram Road widening.

The following additional capacity improvements are recommended to accommodate expected future total volumes in the ultimate 2036 horizon year:

- **Airport Road at 12333 Airport Road/Street "A" (Signalized Access)**
  - Construct a northbound left turn lane with at least 80m storage
  - Construct an eastbound left turn lane with at least 65m of storage
  - Construct a westbound left turn lane with at least 50m of storage
- **Mayfield Road at Street "B" (Signalized Access)**
  - Construct an eastbound left turn lane with at least 95m of storage
  - Construct a westbound right turn lane with 45m of storage. This length is proposed to accommodate projected queues and potential LCVs.
  - Construct a southbound left turn lane with at least 45m of storage. This length is proposed to accommodate projected queues and potential LCVs.
- **Torbram Road and Street "C" (Unsignalized Access)**
  - Construct a westbound left turn lane with 15m of storage
- **Internal Road Network**
  - Sidewalks are recommended to be provided on both sides of all internal roadways
  - Thought not warranted from a traffic control perspective, All-Way Stop Controls are recommended to provide safe pedestrian crossings at the internal collector road intersections of:
    - Street "B" and Street "A"
    - Street "B" and Street "C"
  - Subject Development will adopt an urban cross section for all three internal collector roadways, Street "A", Street "B", and Street "C". This cross section proposes two 3.5m curb lanes, a 5.0m two-way left turn lane, and 3.0m multiuse pathways (MUPs) on both sides of the roadway. The MUPs will also be separated from the roadway by 3.0m boulevards. This cross section supports all modes of transportation.

- **Airport Road at Davis Lane/ Perdue Crescent**

- Consider signalization of the intersection to reduce minor street left-turn delays. It is noted that the long delays are generally associated with background traffic volumes and not as a result of the site traffic.
- Increase Westbound left turn lane to 45m storage (5m increase from future background).

- **Mayfield Road at Torbram Road**

- Eastbound left turn lane with 175m storage (30m increase from Future Background)
- Westbound left turn lane with 230m storage (120m increase from Future Background)

- **Mayfield Road at Airport Road**

- Eastbound right turn lane with 85m storage (5m increase from Future Background)
- Westbound left turn lane with 290m storage (can be accommodated as part of 2026-2031 road widening, 105m increase from Future Background)
- Westbound right turn lane with 180m storage (can be accommodated as part of 2026-2031 road widening, 35m increase from Future Background)
- Southbound left turn lane with 135m storage (35m increase from Existing & Future Background)
- Implement a protected WBL turn phase in both peak hours and optimize the signal timing. This includes reducing the pedestrian walk times to 3 seconds, the pedestrian do not walk times remain unchanged from existing.

- **Mayfield Road Corridor**

- Implement coordination of the Mayfield Road corridor from Torbram Road to Airport Road including cycle length increases throughout the corridor to 120 seconds and 135 seconds in the a.m. and p.m. peak hours, respectively to match the Airport Road and Mayfield Road intersection. Recommended for Future Background conditions as well.

- **Torbram Road Corridor**

- It is understood that the Town has additional considerations for the ultimate buildout of Torbram Road as either a two-lane or four-lane urban cross section. The Town's Official Plan indicates Torbram will be a Town Arterial Road with a 30m ROW, as such, this study has assumed a two-lane urban cross section to ensure a conservative assessment until additional details are available. The details of the ultimate ROW considerations, and scheduling of this roadway will be subject to the completion of the ongoing Multimodal Transportation Master Plan currently being undertaken by the Town. Relevant excerpts from the Town's Official Plan can be found in **Appendix N.**

- **Transit Routes**

- The site's orientation offers opportunities for a bus loop route internal to the site for existing transit routes (e.g., Brampton Transit Route 30), as is similarly existing with the industrial development east of Airport Road (12333 Airport Road). Further discussions with the transit agencies are recommended to identify and plan for future transit routes within the site.
- It is also recommended that bus stops adjacent to the internal intersections Street "B" at Street "A" and Street "B" at Street "C" be projected for, to permit installation when transit routes are finalized. Additionally, in the interim condition a bus stop should be provided at the southwest corner of the intersection of Airport Road at Street "B" to provide connectivity to the existing Brampton Transit Route 30 without modification the route required as the current route services the properties at 12333 Airport Road and can service the Subject Lands as it turns left onto Airport Road before continuing south.
- Any proposed bus stops should be located within 300-400m walking distance of principal entrances to each building. As Street "B" is the main north-south spinal road servicing the developments, it should be adequately equipped to provide bus stops spaced less than 400m away from all building entrances with mid-block bus stops provided as necessary.

- **Proposed and Recommended Mobility Network**

- Per discussion with the Town of Caledon, a network of continuous collector roadways is preferred as the Town looks to establish a collector road network. A potential collector roadway network beyond the subject lands is capable of meeting the objectives set out by the Town.
- It is re-iterated that any visualization of a potential road network beyond the development proposal represents a potential road network that could be established as part of future block plan, secondary plan or LOG work and is not intended to represent a specific proposal of collector road alignments through adjacent lands. A future secondary plan or LOG work would be required to establish a wider transportation network.
- The development will adopt a 26m ROW urban cross section for the internal collector roadways including a 3.0m multi-use path on both sides of the roadway. This cross-section can adequately support future transit along the internal roadways and facilitate safe and connected active transportation in the area.

- **Transportation Demand Management Strategies**

- A number of TDM Strategies have been recommended for consideration at the overall development lands and future individual building Site Plan Application level including:
  - Protect for future transit routes along the internal collector network and potential bus stop locations at the internal collector intersections.
- Encourage bicycle parking during the future development of individual building Site Plans.

- o Encourage off-peak shift changes to reduce automobile traffic demand during the roadway peak hours.
- o Encourage implementation of EV charging during the individual building Site Plan development process.
- o Encourage future tenants to join Smart Commute.
- o Encourage implementation of priority carpool spaces near building entrances etc.
- o Provide direct pedestrian connections from bus stops to adjacent blocks where possible. Provide direct pedestrian connections from the collector road sidewalks where possible.

We trust that this review satisfies any transportation concerns associated with the Site Plan for this development. Please feel free to contact any of the undersigned for any further information required.

Respectfully submitted,

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# Appendix A

## Town and Region Comment Response Matrix



TOWN OF CALEDON: SUMMARY OF COMMENTS (TRAFFIC)			
Department/Agency	Comment	Assigned to	Status/Response
Comments to be Addressed Prior to Official Plan Amendment			
Town of Caledon, Engineering Services Department, Transportation Engineering	25. Transportation Engineering has the following comments related to the Traffic Impact Study:		
	a) Please see attached TMCs for the Old School Road at Torbram Road intersection	CROZIER - TRAFFIC	Noted. Old School Road at Airport and Tobram will be evaluated in future submissions. Update: 2022 TMC's have been used in the third submission.
	b) Please note that Airport Road has a posted speed limit of 60 km/h north of Mayfield and posted 80 km/h north of Davis Lane.	CROZIER - TRAFFIC	Noted.
	c) Please note that Airport Road has a posted speed limit of 60 km/h in the study area	CROZIER - TRAFFIC	Noted, except for in the area North of Davis Lane as mentioned above.
	d) Please note that Torbram Road has a posted speed limit of 70 km/h south of Mayfield Road and posted 80 km/h north of Mayfield Road.	CROZIER - TRAFFIC	According to 2021 Google Maps imagery, the speed limit is posted at 70km/h north of Mayfield as well for the entire segment to Old School Road.
	e) The TIS should illustrate existing active transportation facilities within the study area.	CROZIER - TRAFFIC	Noted. There are generally very few existing facilities besides the MUP on the east side of Airport Road.
	f) More details such as frequency and route map should be provided for the transit services in the study area.	CROZIER - TRAFFIC	Noted. Frequency is discussed in the latest submission but existing transit services are very limited in the study area.
	g) It is unclear how the volumes illustrated in Figures 5 and 6 were calculated; please provide detailed descriptions of the methodology adopted for calculating these volumes. The description provided in Section 4.0 is insufficient. The difference between the 2019 volumes and the 2021 volumes is almost double for the major intersections.	CROZIER - TRAFFIC	It is noted that the 2019 volumes were generally not used for the analysis outside of providing turning movement volumes at the existing site driveways on Airport Road since construction was present at the time of 2019 counts, which significantly reduced traffic volumes. Therefore, the 2016 volumes were used for the intersections along Mayfield Road to ensure a conservative assessment in addition to trip assignments associated with full or partial buildout of known developments since the 2016 TMCs, as well as corridor growth rates per the approved Block 48-2 TIS south of the subject lands. Table 2 shows what

TOWN OF CALEDON: SUMMARY OF COMMENTS (TRAFFIC)			
Department/Agency	Comment	Assigned to	Status/Response
			<p>volumes were used for which intersection. It is also noted that flow balancing was conducted to positively adjust any flow discrepancies.</p> <p>Further description of the development of 2021 existing traffic volumes is included in the December 2021 TIS.</p> <p>Update: Updated 2022 TMC's are used in the third submission.</p>
	h) Please provide a figure illustrating the existing lane configurations for the studied intersections.	CROZIER - TRAFFIC	This will be included in future submission.
	i) Optimizing signals or analyzing stop-controlled intersections as signalized under existing conditions is not an appropriate form of model calibration. The Synchro model should be calibrated to match existing conditions by adjusting synchro parameters such as lane utilization factors, lost time adjustments, saturation flow rate, etc. with appropriate justification.	CROZIER - TRAFFIC	<p>Considering that the traffic counts at the intersections along Mayfield were conducted in 2016 (since 2019 data was deemed not appropriate due to construction as mentioned), and that the signal timing plans are from 2020 and 2021 for the Mayfield intersections, there is a mismatch between the capacity currently provided at the intersection versus what was provided at the time of the traffic counts. Calibration factors in Synchro would not be sufficient to address this mismatch, instead it should be addressed through the collection of new traffic counts at the Mayfield intersections.</p> <p>For the unsignalized intersection of Davis/Perdue and Airport, the counts were conducted in 2019 when volumes along Airport Road and Mayfield Road were reduced due to construction. This reduction in through volumes along the corridors provided additional capacity to the turning movements on Perdue/Davis since additional gaps in traffic were present. However, after the</p>

TOWN OF CALEDON: SUMMARY OF COMMENTS (TRAFFIC)			
Department/Agency	Comment	Assigned to	Status/Response
			<p>traffic volumes were balanced upwards using the 2016 link volumes, this capacity was reduced but the turning movement demand was not. It is again suggested that new traffic counts be collected at this intersection to accurately model existing conditions. However, we understand that constraints with new data collection during Covid-19 restrictions since 2020 may yield non-typical turning movement counts.</p> <p>Update: This has been changed as per comment for the third submission.</p>
	j) Queue lengths of critical movements at stop-controlled intersections should be included in the traffic operations tables for all analyzed horizons. Additionally, when the 95th percentile queue lengths are forecasted to extend beyond the available storage lengths, average queues should also be noted in the traffic operations tables.	CROZIER - TRAFFIC	Noted. This will be included as part of the future submission.
	k) Please include the comments provided by the Town and Region on the TOR in Appendix F.	CROZIER - TRAFFIC	Noted, the full comment thread will be included in future submissions.
	l) Figures 14 and 17 are blank with no rationale in the text of the report.	CROZIER - TRAFFIC	This will be addressed in future submissions, but no additional background traffic was identified between these horizons shown in figure 14 and 17 outside of the background growth rates.
	m) Please provide details on the site trips from each background development in Appendix G. This submission only includes volumes for Developments 1, 6 and a figure for the Sandringham East Plan Development. Considering the number of background developments, please provide a figure illustrating the locations of the development to	CROZIER - TRAFFIC	This additional information will be provided as part of future submissions to aid in review.

TOWN OF CALEDON: SUMMARY OF COMMENTS (TRAFFIC)			
Department/Agency	Comment	Assigned to	Status/Response
	help with the review along with volume figures illustrating the traffic from each development.		
	n) Please confirm if the growth rates were applied to just the through movements or also the turning volumes. Corridor growth should typically be applied to through movements to account for traffic traveling through the study area with T-intersections being the exception.	CROZIER - TRAFFIC	Growth rates were applied to turning movements as well, this will be adjusted in future submission to remove growth for turning movements, except at T intersections.
	o) Please provide lane configuration figures for the future road network differentiating between planned improvements by the Region/Town and recommendations from the Background developments.	CROZIER - TRAFFIC	This will be provided as part of future submissions.
	p) In Table 7, the geometry of the east leg (Healey Road) doesn't match that presented in Appendix G.	CROZIER - TRAFFIC	This will be reviewed and adjusted accordingly as part of future submissions.
	q) Considering the Torbram at Mayfield intersection is signalized with more residual capacity than the major intersections, it would be likely that passenger vehicles will utilize the Torbram Road connection to access the site. The Torbram Road connection should be included in the trip assignment exercise.	CROZIER - TRAFFIC	Given the current design of Torbram Road with the associated spring weight and truck restrictions, it was conservatively assumed that there is no Torbram Road connection to the site to show the worst-case scenario where all the site traffic uses the other accesses. The site's orientation compared to the general distribution also is not expected to result in significant Torbram Road usage as backtracking along the road network would have to be assumed for accessing the relevant buildings within the site.
	r) Further analysis is required to determine the number of lanes and intersection control required for the internal roadways/intersections.	CROZIER - TRAFFIC	This will be conducted for future submissions.
	26. The Town is undertaking a Multi Modal Transportation Master Plan (MMTMP) in support of the Official Plan Review. The MMTMP will identify right-of-way (ROW) widths required for Torbram	CROZIER - TRAFFIC	Noted. Once the MMTMP has been completed, adjustments to the assumptions in this study regarding access and trip assignment can be made to reflect the ultimate ROW.

TOWN OF CALEDON: SUMMARY OF COMMENTS (TRAFFIC)			
Department/Agency	Comment	Assigned to	Status/Response
	Road to support future growth expected in the Town; comments on the ROW will be provided in subsequent submissions.		
	27. The TIS should also include a review of the accessible parking requirements contained within Schedule K of the Town's Traffic By-Law 2015-058.	CROZIER - TRAFFIC	Noted, this will be conducted as part of future submissions.
	28. Please provide an illustration of future active transportation connections from the site to the existing and future boundary AT network.	CROZIER - TRAFFIC	Noted, this will be provided as part of future submissions.
Comments to be Addressed Prior to Draft Plan Approval			
Town of Caledon, Engineering Services Department, Development Engineering)	29. Development Engineering requires that the following comments be resolved prior to Draft Plan Approval:		
	a) The Town is undertaking a Multi Modal Transportation study in support of the Official Plan Review that will ultimately identify right of way widths for Torbram Road to support future growth expected in the Town. The right of way widths determined by the Multi Modal Transportation Study are to be conveyed as dedicated road allowance to the Town as a requirement of this application, gratuitously and free of encumbrances, along the Torbram Road frontage. The Multi Modal Transportation study will also assist in determining the required road cross-section and whether an Environmental Assessment is required for the future reconstruction and urbanization of Torbram Road adjacent to the subject lands. This requirement should be included in all proposed Council reports associated with the above noted applications.	CROZIER - TRAFFIC	Noted. Once the MMTMP has been completed, adjustments to the assumptions in this study regarding access and trip assignment can be made to reflect the ultimate ROW.
	b) Additional consideration is required relating to the provision of connections to the surrounding municipal road network and the subject	CROZIER - TRAFFIC	The accesses proposed as part of the development have considered existing

TOWN OF CALEDON: SUMMARY OF COMMENTS (TRAFFIC)			
Department/Agency	Comment	Assigned to	Status/Response
	development's role in providing connections to neighbouring proposed employment lands.		industrial/employment accesses on the east side of Airport Road and aligned with them as a result.
Town of Caledon, Engineering Services Department, Transportation Engineering	30. Barrier-free accessible spaces should be designed according to the requirements contained within Schedule K of the Town's Traffic By-Law 2015-058.	CROZIER - TRAFFIC	Noted.
	31. An AutoTURN assessment should be provided for all new intersections, access driveways and on-site circulation.	CROZIER - TRAFFIC	Noted. AutoTURN assessments will be conducted as part of site plan applications and as part of any future design work for the intersections.
	32. An AutoTURN assessment should be provided for all critical parking spaces.	CROZIER - TRAFFIC	Noted. AutoTURN assessments will be conducted as part of site plan applications for critical parking spaces.

Department/Agency	Comment	Assigned to	Status/Response
	<b>Traffic Development</b>		
	Prior to registration of the subdivision, property dedication will be required as per Section 7.7 of the Region of Peel Official Plan. Property dedication will be 45.0 metres, 22.5 metres from the centreline of Regional Road 7 (Airport Road). An additional 5.5 metres (for a total Right of Way width of 50.5 metres, 25.25 metres from the centreline) will be required within 245 metres of intersections to protect for the provision of, but not limited to; utilities, sidewalks, multiuse pathways and transit bay/shelters.	CROZIER-TRAFFIC	Noted.
		TFAI	
	Prior to registration of the subdivision, property dedication will be required as per Section 7.7 of the Region of Peel Official Plan. Property dedication will be 50.0 metres, 25.0 metres from the centreline of Regional Road 14 (Mayfield Road). An additional 5.5 metres (for a total Right of Way width of 55.5 metres, 27.75 metres from the centreline) will be required within 245 metres of intersections to protect for the provision of, but not limited to; utilities, sidewalks, multiuse pathways and transit bay/shelters.	CROZIER-TRAFFIC	Noted.
		TFAI	
	A 15m x 15m daylight triangles at any new approved intersection along Regional Road 7 (Airport Road) and Regional Road 14 (Mayfield Road) will be required;	CROZIER-TRAFFIC	Noted.
		TFAI	

Department/Agency	Comment	Assigned to	Status/Response
	A satisfactory Traffic Impact Study is to be provided to the Region for approval.	CROZIER-TRAFFIC	Noted.
	Any proposed access/roadway connection is to align with the road network of the approved Secondary Plan Block 48-2 as it appears to be shown on the proposed site plan and noted within the TIS. Detailed comments pertaining to the TIS will be provided under a separate cover.	CROZIER-TRAFFIC	Noted.
		TFAI	
	The Region also has a widening road project which is in the detailed design stage along Airport Road from Mayfield Road to King Street, the Project Manager, Olek Garbos can be contacted for further details.	CROZIER-TRAFFIC	Noted.
		TFAI	

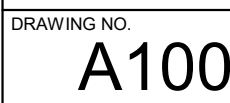
# Appendix B

## Site Plan



**REQUIRED**

## SITE PLAN










REQUIRED	PROPOSED
016.8.M	REFER TO STATE

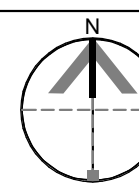
20 M.	MIN. 45 M.
14 M.	MIN. 15 M.
9 M.	N/A
15 M.	MIN. 16 M.
14 M.	MIN. 15 M.
7.5 M.	MIN. 19 M.
OTHER SIDE	MIN. 19 M.
15 M.	MIN. 17 M.
14 M.	MIN. 44 M.
7.5 M.	MIN. 44 M.
4.5 M.	MIN. 6 M.
1.5 M.	MIN. 3 M.
6 M.	N/A
3 M.	N/A
18 M.	TBD
50%	29%
10.0%	TBD
12.5%	TBD
6 M.	MIN. 6 M.
6 M.	MIN. 6 M.
4.5 M.	MIN. 4.5 M.

This drawing, as an instrument of service, is provided by and is the property of Turner Fleischer Architects, Inc. The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Turner Fleischer Architects, Inc. of any variations from the supplied information. This drawing is not to be scaled. The architect is not responsible for the accuracy of survey, structural, mechanical, electrical, etc., information shown on this drawing. Refer to the appropriate consultant's drawings before proceeding with the work. Construction must conform to all applicable codes and regulations of the local jurisdiction. The contractor working from these drawings not specifically marked "For Construction" must assume full responsibility and bear costs for any corrections or damages resulting from his work.

[illegible]

## STAGING/SEQUENCING LEGEND

	PHASE 1
	PHASE 1 - TEMPORARY
	PHASE 2
	PHASE 3
	PHASE 4



DRAWING NO.  
**A101**

REV.  
49



# Appendix C

## Town and Region Terms of Reference Correspondence

# REGION TERMS OF REFERENCE

## Theshantha De Silva

---

**From:** Kol, Rani <rani.kol@peelregion.ca>  
**Sent:** Friday, December 2, 2022 2:15 PM  
**To:** Theshantha De Silva  
**Cc:** Michael Linton; Brandon Bradt; Christina Marzo; Razao, Ricardo; Amaral, Patrick; Hashim Ali Hamdani  
**Subject:** Traffic Development Comments - Terms of Reference - Tullamore Industrial Lands Development - TIS Requirements - 21T-21002C

Theshantha,

We support the below proposed Terms of Reference to be incorporated into the updated TIS for the Tullamore Industrial Lands Development. We look forward to reviewing the TIS and providing feedback.

Regards,

**Rani Kol**  
Specialist  
Traffic Development & Permits  
Region of Peel  
10 Peel Centre Drive, Suite B, 4<sup>th</sup> Floor  
Brampton, ON L6T 4B9



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---

**From:** Amaral, Patrick <patrick.amaral@peelregion.ca>  
**Sent:** November 21, 2022 11:57 AM  
**To:** Theshantha De Silva <tdesilva@cfcrozier.ca>; Kol, Rani <rani.kol@peelregion.ca>; Hamdani, Hashim <hashimali.hamdani@peelregion.ca>  
**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Brandon Bradt <bbradt@cfcrozier.ca>; Marzo, Christina <christina.marzo@peelregion.ca>; Razao, Ricardo <ricardo.razao@peelregion.ca>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Good morning Theshantha,

Thanks for connecting with us. I have forwarded your email to Rani Kol who has taken over this file from Rosalie.

[@Kol, Rani](#) [@Hamdani, Hashim](#) Please see the questions in the email chain below (email from Nov 18 ) and drawings attached. This is related to Region file 21T-21002C, we have also received a related PARC application that I will circulated to your group shortly.

Thank you,

**Patrick Amaral** MES(PI)

Principal Planner

Planning and Development Services | Region of Peel

Tel: 905-791-7800 ext. 4093

E-mail: [patrick.amaral@peelregion.ca](mailto:patrick.amaral@peelregion.ca)



**In response to the emergence of the novel coronavirus, the Region of Peel is implementing various measures to protect our customers, employees and workplaces. Development Services will endeavour to maintain the continuity of our business operations, however delays in service may still be experienced. We appreciate your patience during this time.**

---

**From:** Razao, Ricardo <[ricardo.razao@peelregion.ca](mailto:ricardo.razao@peelregion.ca)>

**Sent:** November 18, 2022 12:42 PM

**To:** Theshantha De Silva <[tdesilva@cfcrozier.ca](mailto:tdesilva@cfcrozier.ca)>

**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>; Marzo, Christina <[christina.marzo@peelregion.ca](mailto:christina.marzo@peelregion.ca)>; Amaral, Patrick <[patrick.amaral@peelregion.ca](mailto:patrick.amaral@peelregion.ca)>

**Subject:** FW: Tullamore Industrial Lands Development - TIS Requirements

Hi Theshantha,

Thanks for reaching out. I no longer have carriage of Caledon files but copied Patrick Amaral, who can point you to the right person in Traffic Development and Development Services.

Thanks,

Ricardo Razao

Acting Principal Planner

Policy Development | Planning and Development Services

Region of Peel

10 Peel Centre Drive, 4<sup>th</sup> Floor, Suite B

(905) 791-7800 ext. 4426

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---

**From:** Theshantha De Silva <>

**Sent:** November 18, 2022 12:05 PM

**To:** Razao, Ricardo <[ricardo.razao@peelregion.ca](mailto:ricardo.razao@peelregion.ca)>

**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>

**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

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Sending along the attachments as well. My apologies.

Thanks,  
Theshantha

**Theshantha De Silva**, EIT | Engineering Intern  
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4  
T: 416.477.3392



Crozier Connections: [!\[\]\(bd1a142de767a21e5362c595f844a4ff\_img.jpg\)](#) [!\[\]\(d4257ae6a3e163e6d467b3eb87960fa1\_img.jpg\)](#) [!\[\]\(37da042f270bb1ebdb248503fcdcdd43\_img.jpg\)](#) [!\[\]\(22b1bf7712f21472f961e36af9cc7acb\_img.jpg\)](#)

Read our latest news and announcements [here](#).

---

**From:** Theshantha De Silva  
**Sent:** November 18, 2022 12:03 PM  
**To:** 'ricardo.razao@peelregion.ca' <[ricardo.razao@peelregion.ca](mailto:ricardo.razao@peelregion.ca)>  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Good afternoon Ricardo,

We just had the below Terms of Reference email bounce back from Peel Region, It appears that Rosalie has left Peel Region. We were informed that you may be the Peel Region contact we should be reaching out to regarding our Terms of Reference for the Tullamore Industrial Development. Furthermore, should you not be the appropriate person for correspondence, it would be very appreciated to be directed to the appropriate contact.

Best regards,  
Theshantha

---

**From:** Theshantha De Silva  
**Sent:** November 18, 2022 10:10 AM  
**To:** Rosalie Shan <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>; [Jillian.Britto@caledon.ca](mailto:Jillian.Britto@caledon.ca); [arash.olia@caledon.ca](mailto:arash.olia@caledon.ca)  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Good morning, Jillian, Arash, and Rosalie,

I hope all is well. I'm reaching out regarding an update to the previously submitted TIS for the Tullamore Industrial Development.

Since the previous submission, additional lands have been included to the north within the application, resulting in some revisions to the internal layout. Note the connections to Airport Road and Mayfield Road remain the same, and the proposed connection to Torbram Road is shifted further north. I understand these updated plans have been circulated to the Town and Region already.

You may recall the Town/Region initially had comments pertaining to the estimate of “existing 2021” counts during a pandemic horizon, where growth rates and background traffic assignments had to be applied to 2016-2019 TMCs originally captured prior to the completed Mayfield Road widening. This approach was confirmed in the initial Terms of Reference. As the estimated “existing” volumes were based on a number of forecasts, we took the opportunity to undertake new counts on September 13<sup>th</sup>, 2022, at all the study intersections requested. We can confirm that these counts were taken after schools have been re-opened and with normal commuter traffic generally returning to the road network. Furthermore, construction was not present near any the study intersections at the time of the counts.

We note that most of the background developments for which trip assignments we added are built and are therefore now assumed to be included in the newly collected counts. For your convenience we’ve summarized the difference in volumes in **Table 1** below and also illustrated on the figures attached.

We note that based on the comparison in **Table 1**, the new 2022 counts are much lower than the previously estimated 2021 counts with similar drops in both the AM and PM counts. As the Town previously noted the difference between 2019 observed and 2021 estimated counts were significant as construction along Mayfield occurred and 2016 volume had to be forecasted to 2021 to avoid pandemic impacts.

Interestingly, the difference for the intersections along Torbram Road were much less pronounced (15%-20%) compared to all the other intersections along Mayfield and Airport (40%-60%), which is generally due to background volumes not materializing along the Old School, Airport and Mayfield corridors, while Torbram experienced some growth since the 2016 counts as expected. This is further evident given the comparison between the 2016/2019 raw volumes to the 2022 counts shows that nearly all intersections experienced little growth between the original count date to 2022, with the exception of Torbram at Mayfield. Please see **Table 1** below and the attached figures for reference.

**Table 1: % 2021 Projected Volumes vs. 2022 Actual Volumes Comparison**

Intersection	Original TMC Dates Conducted	Latest TMC Dates Conducted	% Change Original TMC to 2022 Raw Volumes		% Change 2021 Projected to 2022 Raw Volumes	
			AM	PM	AM	PM
Torbram Road at Old School Road	September 7, 2017	September 13, 2022	-17.4%	-6.7%	-21.7%	-14.4%
Mayfield Road at Torbram Road	November 24, 2016	September 13, 2022	+29.7%	+33.8%	-15.6%	-12.1%
Mayfield Road at Airport Road	June 22, 2016	September 13, 2022	-3.4%	-3.5%	-41.1%	-40.0%
Airport Road at Davis Lane/Perdue Crescent	September 25, 2016	September 13, 2022	+10.4%	+2.6%	-40.1%	-39.6%
Airport Road at Street "A"	September 25, 2019	September 13, 2022	+3.5%	-6.5%	-47.9%	-50.9%
Airport Road at Healey Road	October 13, 2019	September 13, 2022	-13.9%	-9.0%	-50.7%	-47.9%
Airport Road at Old School Road	October 13, 2019	September 13, 2022	-15.3%	-15.5%	-54.5%	-52.1%

It would appear that the forecast of “2021 existing” volumes during the pandemic was quite conservative and using the 2022 TMCs would be more appropriate to avoid overestimating volumes and any associated capacity improvements. Could you confirm if using the 2022 TMCs would suffice?

#### Background Developments Update



Using the 2022 counts will also change the landscape of background developments to be used in the study. Background developments for 2016-2021 that have since been completed would be removed from the analysis given that the 2022 counts now account for them. Furthermore, the percent build-out of developments still in progress will now differ given the 2022 base year of analysis.

**Table 2** outlines the new background development assumptions proposed for the TIS Update. Please review and provide any necessary changes to these background development assumptions.

**Table 2: Background Developments**

No.	Development Address	Planned Buildout Horizon	Source	2022 Built Out Status
1	Block 48-2 Brampton Area 48 Landowners	100% Build-out 2026	Block 48-2 TIS (Cole, 2017)	0% Complete
2	Block 48-1 Countryside Villages	50% by 2021 100% by 2026	Block 48-1 TIS (MMM, 2015)	50% complete
3	Vales North Special Study Area	2020	Block 48-2 TIS (Cole, 2017)	Complete
4	7905 Mayfield Road	50% Build-out 2015 100% Build-out 2020	Block 48-2 TIS (Cole, 2017)	Complete
5	Springdale Neighborhood 702	Completed	Block 48-2 TIS (Cole, 2017)	Complete
6	Countryside Villages Secondary Plan – Employment Centre	50% Build-out 2015 Full Build-out 2020	Block 48-2 TIS (Cole, 2017)	25% Complete
7	SmartCentres Mayfield/ Bramalea	Completed	Block 48-2 TIS (Cole, 2017)	Complete
8	Torbram Road/ Countryside Drive Retail Development	Full Build-out 2020	Block 48-2 TIS (Cole, 2017)	Complete
9	Place of Worship Torbram Road / Countryside Drive	2016	Block 48-2 TIS (Cole, 2017)	Complete
10	Bramalea Road / Countryside Drive	2020	Block 48-2 TIS (Cole, 2017)	Complete

- 2022 “Existing” Study Horizon
  - Using 2022 Counts
  - All background developments completed prior to the 2022 TMC’s will be removed from the study
- 2022 - 2036 Study Horizons
  - Block 48-1 development was assumed to only be built out 50% by 2022. The remaining 50% of this development would be expected to be built out by 2026.
  - As noted in **Table 2**, the Block 48-2 development is expected to be fully built out by 2026.
  - As noted in **Table 2**, the Countryside Villages Secondary Plan – Employment Centre was assumed to only be built out 25% by 2022. The remaining 75% of this development would be expected to be built out by 2026.

#### Proposed Growth Rates Update

As per comments by the Town of Caledon, an industry standard growth rate of 2.0% per annum will be applied to Town Collector roads (i.e. Torbram Road). Growth is not required to be applied to any local roads or existing driveway connections.

Growth rates established for the previous TIS submission (Crozier 2021) and are replicated in **Table 3** below for use in the updated analysis:

**Table 3: Background Growth Rates**

Corridor	Growth Rate	
	2022-2031	2031-2036
Airport Road (Regional Road 7)	1%	1%
Mayfield Road (Regional Road 14)	5%	2%
Torbram Road	2%	
Perdue Court/Davis Lane	0%	
Old School Road	2%	

*Note: Given the significant amount of background traffic assigned, a 2% growth rate will be applied to Mayfield Road traffic volumes after the 2031 horizon. This will be applied as consistent with the Town collector growth rates requested, since a 5% growth rate compounded over a 15-year horizon would result in an unrealistic estimate of future growth.*

Per your previous comments, growth rates will only be applied to through movements only, with the exception of T-intersections where they would be applied to the turning movements as well. Could you confirm this is still preferred?

Please let us know if the above is acceptable, feel free to contact us should you have questions.

Additionally, we were hoping you might be able to provide an update on the Multi-Modal Transportation Master Plan, we were informed it was in progress to be completed by now. It is our intent to include its contents in our TIS Update.

Best regards,  
Theshantha De Silva

---

**From:** Shan, Rosalie <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>

**Sent:** February 25, 2022 11:43 AM

**To:** Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>

**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Nezami, Sona <[sona.nezami@peelregion.ca](mailto:sona.nezami@peelregion.ca)>; Garbos, Olek <[olek.garbos@peelregion.ca](mailto:olek.garbos@peelregion.ca)>; Homagain, Abiral <[abiral.homagain@peelregion.ca](mailto:abiral.homagain@peelregion.ca)>; Hashim Ali Hamdani <[hashimali.hamdani@peelregion.ca](mailto:hashimali.hamdani@peelregion.ca)>

**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Hi Brandon,

Thank you for reaching out to us.

Please see my answers below in red.

Hope this helps and please let me know if you have any questions or need more information on this.

Regards,  
**Rosalie Shan**, P.Eng., MSCE  
Technical Analyst  
Traffic Development & Permits  
Region of Peel  
10 Peel Centre Drive Suite B, 4<sup>th</sup> Floor  
Brampton, ON L6T 4B9  
905 791-7800 Ext. 7999



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**From:** Garbos, Olek <[olek.garbos@peelregion.ca](mailto:olek.garbos@peelregion.ca)>  
**Sent:** February 24, 2022 6:14 PM  
**To:** Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>; Shan, Rosalie <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Nezami, Sona <[sona.nezami@peelregion.ca](mailto:sona.nezami@peelregion.ca)>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Hi Brandon,

FYI, Sona Nezami (copied in this email) took over this project and will provide the required information.

Regards

Olek Garbos, C.E.T.  
Project Manager, Roads-Design and Construction  
Transportation Division  
Public Works, Region of Peel  
905-791-7800 x – 7827

---

**From:** Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>  
**Sent:** February 24, 2022 3:40 PM  
**To:** Shan, Rosalie <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>; Garbos, Olek <[olek.garbos@peelregion.ca](mailto:olek.garbos@peelregion.ca)>  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>  
**Subject:** Tullamore Industrial Lands Development - TIS Requirements

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Good Afternoon Rosalie and Olek,

Hope you both are doing well and got to enjoy a relaxing long weekend last weekend.

We are preparing an updated TIS for the Tullamore Industrial lands located north of Mayfield Road, west of Airport Road and east of Torbram Road and wanted to ask if you could offer some feedback on a couple of items prior to us submitting our updated TIS? We note that comments were provided by the Region on the original TIS submission dated November 23, 2021 and I have included them here for your reference. I have attached the original TOR we circulated in July of last year as a general reference as well.

The items we are requesting some feedback on are as follows:

- Could you please provide the latest Airport Road widening design drawings for our records and reference to ensure our modelling agrees with the proposed designs. We'd also like to ensure the site plan is providing sufficient space at the intersections. Of particular interest is the Airport Road and Old School roundabout for which we have been using the EA drawings.

**Sona from Capital Group will follow up with you and provide the drawings.**

- Caledon has requested that growth rates only be applied to through movements along their roadways. We assume this is a reasonable assumption along the regional roadways as well but would like to confirm this. Of particular note would be the regional road intersection of Mayfield and Airport which would expect may

experience some background growth for turning movements. However, we do note that the 5% growth rate for Mayfield between 2021-2031 is quite high and applying this growth to turning movements at the intersection would likely lead to very conservative results and issues with left-turns at the intersection. If growth rates for turning movements are required for turning movements at the intersection of Airport and Mayfield, we would like to request a lower rate of 1% for all turning movements at the intersection.

Since the growth rate is provided by Transportation planning from a long term version to address population and employment growth. For certain movement, turning volume will reflect the through volume growth. As so, is it possible to include both? With 5% and also 1% as suggested. So we have a better idea how the “worst case scenario” looks like.

It is understood for a right-turn lane, the volume will impact the storage length. However, for left-turn lanes, the Region would like to see the dual – left turn warrants under the worst case scenario. As so, we can protect for the dual-left turn configuration at an early stage.

- We note that the comments are generally high-level about the road widenings, day light triangle, etc and wanted to inquire if we can also expect more detailed comments in the future after we make the second submission or are there still more pending on the first submission?

Please note I can only speak from Traffic Development perspective. The traffic comments are at high-level for the first submission. More detailed comments regarding engineering design will be provided after the submission of the detailed roadway design. Which is also bounded with the Traffic Impact Study. So the TIS will demonstrate the roadway requirement that support the development. Next steps will be the detailed engineering design and review.

I copied our Planner Abiral on the email if you have any questions regarding planning process.

We also note the site plans have provided sufficient dedications for the proposed widenings along Airport Road and Mayfield generally per the November comments.

If any of this is unclear, I am happy to have a call to discuss at your convenience. We are currently looking to submit an updated TIS in mid March so please let me know if there’s anything I can do to expedite/aid your response.

Kind Regards,  
Brandon

**Brandon Bradt** | Project Manager  
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4  
T: 416.477.3392



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# TOWN TERMS OF REFERENCE

## Theshantha De Silva

---

**From:** Jillian Britto <Jillian.Britto@caledon.ca>  
**Sent:** Friday, December 16, 2022 6:57 PM  
**To:** Theshantha De Silva  
**Cc:** Michael Linton; Brandon Bradt; Arash Olia; Emma Howlett  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements - Town of Caledon

Hi Theshantha,

Happy Friday! Hope you had a good week.

Thank you for providing us an opportunity to review the terms of reference for the revised TIS for the above-noted development. The scope of work noted in the TOR is generally acceptable with the following comments:

- New 2022 counts will suffice for the existing conditions analysis.
- As noted in our comments on the TIS from the 1<sup>st</sup> submission, please provide details on the site trips from each background development in Appendix G of the previous TIS. The 1<sup>st</sup> submission only included volumes for Developments 1, 6 and a figure for the Sandringham East Plan Development. Considering the number of background developments, please provide a figure illustrating the locations of the development to help with the review along with volume figures illustrating the traffic volumes from each development.
- Please include the following background development in the analysis:
  - o OPA 2021-0008 – 0 Airport Road (TIS can be found here: <https://www.caledon.ca/en/town-services/0-airport-road-and-6034-mayfield-road.aspx>)
- Please confirm the project status with Brampton for their respective developments.
- The proposed application of corridor growth is acceptable for the roads under the Town's jurisdiction. Please confirm corridor growth rates and application with the Region as well.
- The Town's MMTMP is now expected to go to council in Q3 of 2023, in alignment with the Town's Official Plan. Please note that draft Road Classification and Right-of-Way Schedules can be found on the Town's Have Your Say website (<https://haveyoursaycaledon.ca/official-plan-review>).
- In addition to the transit recommendations provided in the 1st TIS submission, please include recommendations on appropriate bus stop locations along the new public roads to provide adequate transit coverage for the development.
- Please ensure the revised TIS addresses all the comments from the 1<sup>st</sup> submission.

Please let us know if you have any questions or require any further information.

Have a great weekend.

Regards,

**Jillian Britto, P.Eng., PTOE**  
Transportation Engineer  
Engineering Services

Office: 905.584.2272 x 4108  
Email: [Jillian.Britto@caledon.ca](mailto:Jillian.Britto@caledon.ca)

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---

**From:** Theshantha De Silva <tdesilva@cfcrozier.ca>

**Sent:** Friday, December 9, 2022 3:07 PM

**To:** Jillian Britto <Jillian.Britto@caledon.ca>

**Cc:** Michael Linton <mlinton@cfcrozier.ca>; Brandon Bradt <bbradt@cfcrozier.ca>; Arash Olia <Arash.Olia@caledon.ca>; Emma Howlett <Emma.Howlett@caledon.ca>

**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements - Town of Caledon

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Hi Jillian,

Perfect, we look forward to hearing from you next week.

Have a good weekend.

Best regards,  
Theshantha

**Theshantha De Silva**, EIT | Engineering Intern  
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4  
T: 416.477.3392



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---

**From:** Jillian Britto <[Jillian.Britto@caledon.ca](mailto:Jillian.Britto@caledon.ca)>

**Sent:** Friday, December 9, 2022 3:04 PM

**To:** Theshantha De Silva <[tdesilva@cfcrozier.ca](mailto:tdesilva@cfcrozier.ca)>

**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>; Arash Olia <[Arash.Olia@caledon.ca](mailto:Arash.Olia@caledon.ca)>; Emma Howlett <[Emma.Howlett@caledon.ca](mailto:Emma.Howlett@caledon.ca)>

**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements - Town of Caledon

Good afternoon Theshantha,

Happy Friday! Hope you had a good week.

We are in the process of reviewing the TOR; yesterday afternoon's discussion provided some more clarity on the application.

We will provide a response by the end of next week.

Have a great weekend.

Regards,

**Jillian Britto, P.Eng.**  
Transportation Engineer  
Engineering Services

Office: 905.584.2272 x 4108  
Email: [Jillian.Britto@caledon.ca](mailto:Jillian.Britto@caledon.ca)

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**From:** Theshantha De Silva <[tdesilva@cfcrozier.ca](mailto:tdesilva@cfcrozier.ca)>  
**Sent:** Friday, December 9, 2022 1:50 PM  
**To:** Jillian Britto <[Jillian.Britto@caledon.ca](mailto:Jillian.Britto@caledon.ca)>; Arash Olia <[Arash.Olia@caledon.ca](mailto:Arash.Olia@caledon.ca)>  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements - Town of Caledon

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Good afternoon Jillian and Arash,

Happy Friday! It is our understanding that there was a Pre-Application Review Committee (PARC) Meeting yesterday. We're reaching out to see if you had any questions or issues. As always, please don't hesitate to reach out to us.

Best regards,  
Theshantha

**Theshantha De Silva, EIT** | Engineering Intern  
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4  
T: 416.477.3392



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**From:** Theshantha De Silva  
**Sent:** Monday, December 5, 2022 3:59 PM  
**To:** [Jillian.Britto@caledon.ca](mailto:Jillian.Britto@caledon.ca); [arash.olia@caledon.ca](mailto:arash.olia@caledon.ca)  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements - Town of Caledon

Good afternoon Jillian and Arash,



We are following up about our Terms of Reference for the Tullamore Industrial Development sent to you on November 18<sup>th</sup>. Could you please provide an update on when we will be receiving feedback from the Town of Caledon, as we are aiming to submit this TIS Update before the end of the year.

We have just heard back from Peel Region (*see attached email*), they have approved the proposed Terms of Reference.

Best regards,  
Theshantha

---

**From:** Theshantha De Silva  
**Sent:** November 18, 2022 10:10 AM  
**To:** Rosalie Shan <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>; Jillian.Britto@caledon.ca; [arash.olia@caledon.ca](mailto:arash.olia@caledon.ca)  
**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>  
**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Good morning, Jillian, Arash, and Rosalie,

I hope all is well. I'm reaching out regarding an update to the previously submitted TIS for the Tullamore Industrial Development.

Since the previous submission, additional lands have been included to the north within the application, resulting in some revisions to the internal layout. Note the connections to Airport Road and Mayfield Road remain the same, and the proposed connection to Torbram Road is shifted further north. I understand these updated plans have been circulated to the Town and Region already.

You may recall the Town/Region initially had comments pertaining to the estimate of "existing 2021" counts during a pandemic horizon, where growth rates and background traffic assignments had to be applied to 2016-2019 TMCs originally captured prior to the completed Mayfield Road widening. This approach was confirmed in the initial Terms of Reference. As the estimated "existing" volumes were based on a number of forecasts, we took the opportunity to undertake new counts on September 13<sup>th</sup>, 2022, at all the study intersections requested. We can confirm that these counts were taken after schools have been re-opened and with normal commuter traffic generally returning to the road network. Furthermore, construction was not present near any the study intersections at the time of the counts.

We note that most of the background developments for which trip assignments we added are built and are therefore now assumed to be included in the newly collected counts. For your convenience we've summarized the difference in volumes in **Table 1** below and also illustrated on the figures attached.

We note that based on the comparison in **Table 1**, the new 2022 counts are much lower than the previously estimated 2021 counts with similar drops in both the AM and PM counts. As the Town previously noted the difference between 2019 observed and 2021 estimated counts were significant as construction along Mayfield occurred and 2016 volume had to be forecasted to 2021 to avoid pandemic impacts.

Interestingly, the difference for the intersections along Torbram Road were much less pronounced (15%-20%) compared to all the other intersections along Mayfield and Airport (40%-60%), which is generally due to background volumes not materializing along the Old School, Airport and Mayfield corridors, while Torbram experienced some growth since the 2016 counts as expected. This is further evident given the comparison between the 2016/2019 raw volumes to the 2022 counts shows that nearly all intersections experienced little growth between the original count date to 2022, with the exception of Torbram at Mayfield. Please see **Table 1** below and the attached figures for reference.

**Table 1: % 2021 Projected Volumes vs. 2022 Actual Volumes Comparison**

Intersection	Original TMC Dates Conducted	Latest TMC Dates Conducted	% Change Original TMC to 2022 Raw Volumes		% Change 2021 Projected to 2022 Raw Volumes	
			AM	PM	AM	PM
Torbram Road at Old School Road	September 7, 2017	September 13, 2022	-17.4%	-6.7%	-21.7%	-14.4%
Mayfield Road at Torbram Road	November 24, 2016	September 13, 2022	+29.7%	+33.8%	-15.6%	-12.1%
Mayfield Road at Airport Road	June 22, 2016	September 13, 2022	-3.4%	-3.5%	-41.1%	-40.0%
Airport Road at Davis Lane/Perdue Crescent	September 25, 2016	September 13, 2022	+10.4%	+2.6%	-40.1%	-39.6%
Airport Road at Street "A"	September 25, 2019	September 13, 2022	+3.5%	-6.5%	-47.9%	-50.9%
Airport Road at Healey Road	October 13, 2019	September 13, 2022	-13.9%	-9.0%	-50.7%	-47.9%
Airport Road at Old School Road	October 13, 2019	September 13, 2022	-15.3%	-15.5%	-54.5%	-52.1%

It would appear that the forecast of “2021 existing” volumes during the pandemic was quite conservative and using the 2022 TMCs would be more appropriate to avoid overestimating volumes and any associated capacity improvements. Could you confirm if using the 2022 TMCs would suffice?

#### Background Developments Update

Using the 2022 counts will also change the landscape of background developments to be used in the study. Background developments for 2016-2021 that have since been completed would be removed from the analysis given that the 2022 counts now account for them. Furthermore, the percent build-out of developments still in progress will now differ given the 2022 base year of analysis.

**Table 2** outlines the new background development assumptions proposed for the TIS Update. Please review and provide any necessary changes to these background development assumptions.

**Table 2: Background Developments**

No.	Development Address	Planned Buildout Horizon	Source	2022 Built Out Status
1	Block 48-2 Brampton Area 48 Landowners	100% Build-out 2026	Block 48-2 TIS (Cole, 2017)	0% Complete
2	Block 48-1 Countryside Villages	50% by 2021 100% by 2026	Block 48-1 TIS (MMM, 2015)	50% complete
3	Vales North Special Study Area	2020	Block 48-2 TIS (Cole, 2017)	Complete
4	7905 Mayfield Road	50% Build-out 2015 100% Build-out 2020	Block 48-2 TIS (Cole, 2017)	Complete
5	Springdale Neighborhood 702	Completed	Block 48-2 TIS (Cole, 2017)	Complete
6	Countryside Villages Secondary Plan – Employment Centre	50% Build-out 2015 Full Build-out 2020	Block 48-2 TIS (Cole, 2017)	25% Complete
7	SmartCentres Mayfield/ Bramalea	Completed	Block 48-2 TIS (Cole, 2017)	Complete

8	Torbram Road/ Countryside Drive Retail Development	Full Build-out 2020	Block 48-2 TIS (Cole, 2017)	Complete
9	Place of Worship Torbram Road / Countryside Drive	2016	Block 48-2 TIS (Cole, 2017)	Complete
10	Bramalea Road / Countryside Drive	2020	Block 48-2 TIS (Cole, 2017)	Complete

- 2022 “Existing” Study Horizon
  - Using 2022 Counts
  - All background developments completed prior to the 2022 TMC’s will be removed from the study
- 2022 - 2036 Study Horizons
  - Block 48-1 development was assumed to only be built out 50% by 2022. The remaining 50% of this development would be expected to be built out by 2026.
  - As noted in **Table 2**, the Block 48-2 development is expected to be fully built out by 2026.
  - As noted in **Table 2**, the Countryside Villages Secondary Plan – Employment Centre was assumed to only be built out 25% by 2022. The remaining 75% of this development would be expected to be built out by 2026.

#### Proposed Growth Rates Update

As per comments by the Town of Caledon, an industry standard growth rate of 2.0% per annum will be applied to Town Collector roads (i.e. Torbram Road). Growth is not required to be applied to any local roads or existing driveway connections.

Growth rates established for the previous TIS submission (Crozier 2021) and are replicated in **Table 3** below for use in the updated analysis:

**Table 3: Background Growth Rates**

Corridor	Growth Rate	
	2022-2031	2031-2036
Airport Road (Regional Road 7)	1%	1%
Mayfield Road (Regional Road 14)	5%	2%
Torbram Road	2%	
Perdue Court/Davis Lane	0%	
Old School Road	2%	

*Note: Given the significant amount of background traffic assigned, a 2% growth rate will be applied to Mayfield Road traffic volumes after the 2031 horizon. This will be applied as consistent with the Town collector growth rates requested, since a 5% growth rate compounded over a 15-year horizon would result in an unrealistic estimate of future growth.*

Per your previous comments, growth rates will only be applied to through movements only, with the exception of T-intersections where they would be applied to the turning movements as well. Could you confirm this is still preferred?

Please let us know if the above is acceptable, feel free to contact us should you have questions.

Additionally, we were hoping you might be able to provide an update on the Multi-Modal Transportation Master Plan, we were informed it was in progress to be completed by now. It is our intent to include its contents in our TIS Update.

Best regards,  
Theshantha De Silva

**From:** Shan, Rosalie <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>

**Sent:** February 25, 2022 11:43 AM

**To:** Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>

**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Nezami, Sona <[sona.nezami@peelregion.ca](mailto:sona.nezami@peelregion.ca)>; Garbos, Olek <[olek.garbos@peelregion.ca](mailto:olek.garbos@peelregion.ca)>; Homagain, Abiral <[abiral.homagain@peelregion.ca](mailto:abiral.homagain@peelregion.ca)>; Hashim Ali Hamdani <[hashimali.hamdani@peelregion.ca](mailto:hashimali.hamdani@peelregion.ca)>

**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Hi Brandon,

Thank you for reaching out to us.

Please see my answers below in red.

Hope this helps and please let me know if you have any questions or need more information on this.

Regards,

**Rosalie Shan**, P.Eng., MScE

Technical Analyst

Traffic Development & Permits

Region of Peel

10 Peel Centre Drive Suite B, 4<sup>th</sup> Floor

Brampton, ON L6T 4B9

905 791-7800 Ext. 7999



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**From:** Garbos, Olek <[olek.garbos@peelregion.ca](mailto:olek.garbos@peelregion.ca)>

**Sent:** February 24, 2022 6:14 PM

**To:** Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>; Shan, Rosalie <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>

**Cc:** Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>; Nezami, Sona <[sona.nezami@peelregion.ca](mailto:sona.nezami@peelregion.ca)>

**Subject:** RE: Tullamore Industrial Lands Development - TIS Requirements

Hi Brandon,

FYI, Sona Nezami (copied in this email) took over this project and will provide the required information.

Regards

Olek Garbos, C.E.T.

Project Manager, Roads-Design and Construction

Transportation Division

Public Works, Region of Peel

905-791-7800 x – 7827

---

**From:** Brandon Bradt <[bbradt@cfcrozier.ca](mailto:bbradt@cfcrozier.ca)>

**Sent:** February 24, 2022 3:40 PM

**To:** Shan, Rosalie <[rosalie.shan@peelregion.ca](mailto:rosalie.shan@peelregion.ca)>; Garbos, Olek <[olek.garbos@peelregion.ca](mailto:olek.garbos@peelregion.ca)>

Cc: Michael Linton <[mlinton@cfcrozier.ca](mailto:mlinton@cfcrozier.ca)>

Subject: Tullamore Industrial Lands Development - TIS Requirements

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Good Afternoon Rosalie and Olek,

Hope you both are doing well and got to enjoy a relaxing long weekend last weekend.

We are preparing an updated TIS for the Tullamore Industrial lands located north of Mayfield Road, west of Airport Road and east of Torbram Road and wanted to ask if you could offer some feedback on a couple of items prior to us submitting our updated TIS? We note that comments were provided by the Region on the original TIS submission dated November 23, 2021 and I have included them here for your reference. I have attached the original TOR we circulated in July of last year as a general reference as well.

The items we are requesting some feedback on are as follows:

- Could you please provide the latest Airport Road widening design drawings for our records and reference to ensure our modelling agrees with the proposed designs. We'd also like to ensure the site plan is providing sufficient space at the intersections. Of particular interest is the Airport Road and Old School roundabout for which we have been using the EA drawings.

Sona from Capital Group will follow up with you and provide the drawings.

- Caledon has requested that growth rates only be applied to through movements along their roadways. We assume this is a reasonable assumption along the regional roadways as well but would like to confirm this. Of particular note would be the regional road intersection of Mayfield and Airport which would expect may experience some background growth for turning movements. However, we do note that the 5% growth rate for Mayfield between 2021-2031 is quite high and applying this growth to turning movements at the intersection would likely lead to very conservative results and issues with left-turns at the intersection. If growth rates for turning movements are required for turning movements at the intersection of Airport and Mayfield, we would like to request a lower rate of 1% for all turning movements at the intersection.

Since the growth rate is provided by Transportation planning from a long term version to address population and employment growth. For certain movement, turning volume will reflect the through volume growth. As so, is it possible to include both? With 5% and also 1% as suggested. So we have a better idea how the "worst case scenario" looks like.

It is understood for a right-turn lane, the volume will impact the storage length. However, for left-turn lanes, the Region would like to see the dual – left turn warrants under the worst case scenario. As so, we can protect for the dual-left turn configuration at an early stage.

- We note that the comments are generally high-level about the road widenings, day light triangle, etc and wanted to inquire if we can also expect more detailed comments in the future after we make the second submission or are there still more pending on the first submission?

Please note I can only speak from Traffic Development perspective. The traffic comments are at high-level for the first submission. More detailed comments regarding engineering design will be provided after the submission of the detailed roadway design. Which is also bounded with the Traffic Impact Study. So the TIS will demonstrate the roadway requirement that support the development. Next steps will be the detailed engineering design and review.

I copied our Planner Abiral on the email if you have any questions regarding planning process.

We also note the site plans have provided sufficient dedications for the proposed widenings along Airport Road and Mayfield generally per the November comments.

If any of this is unclear, I am happy to have a call to discuss at your convenience. We are currently looking to submit an updated TIS in mid March so please let me know if there's anything I can do to expedite/aid your response.

Kind Regards,  
Brandon

**Brandon Bradt** | Project Manager  
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4  
T: 416.477.3392



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# Appendix D

## Zoning Maps

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## SECTION 10

### AGRICULTURAL AND RURAL ZONES

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#### 10.1 GENERAL PROHIBITION

No *person* shall, within any **Agricultural** and **Rural Zone**, use any land, or erect, *alter*, enlarge, use or maintain any *building* or *structure* for any *use* other than as permitted in **Table 10.1** of Subsection 10.2 and in accordance with the standards contained in **Table 10.2** of Subsection 10.3, the General Provisions contained in Section 4 and the Parking, Loading & Delivery Standards contained in Section 5.

#### 10.2 PERMITTED USES

Uses permitted in an **Agricultural** or **Rural Zone** are noted by the symbol '✓' in the column applicable to that *Zone* and corresponding with the row for a specific permitted *use* in **Table 10.1**. A number(s) following the symbol '✓', *zone* heading or identified permitted *use*, indicates that one or more conditions apply to the *use* noted or, in some cases, to the entire *Zone*. Conditions are listed below the Permitted Use **Table, Table 10.1**.

The **Agricultural** and **Rural Zones** established by this By-law are as follows:

<b>A1</b>	<b>Agricultural</b>
<b>A2</b>	<b>Rural</b>
<b>A3</b>	<b>Small Agricultural Holdings</b>
<b>A1-ORM</b>	<b>Agricultural – Oak Ridges Moraine</b>
<b>A2-ORM</b>	<b>Rural – Oak Ridges Moraine</b>
<b>A3-ORM</b>	<b>Small Agricultural Holdings – Oak Ridges Moraine</b>

**TABLE 10.1**

USE	ZONE A1	ZONE A2	ZONE A3	ZONE A1-ORM	ZONE A2-ORM	ZONE A3-ORM
<b>Agriculture-related Commercial Use</b>	✓(5)	✓(5)	✓(5)			
<b>Agriculture-related Industrial Use</b>	✓(5)	✓(5)	✓(5)			
<b>Agri-Tourism Use</b>	✓(6)	✓(6)	✓(6)			
<b>Apartment, Accessory</b>	✓	✓	✓			
<b>Agricultural Uses (ORM)</b>				✓	✓	✓
<b>Animal Agriculture (ORM)</b>				✓	✓	✓
<b>Bed and Breakfast Establishment</b>				✓(3)	✓(3)	✓(3)
<b>Bunkhouse, Accessory</b>	✓(2)	✓(2)		✓(2)	✓(2)	
<b>Dwelling, Accessory</b>	✓	✓				
<b>Dwelling, Accessory (ORM)</b>				✓	✓	
<b>Dwelling, Detached</b>	✓	✓	✓	✓(4)	✓(4)	✓(4)



USE	ZONE A1	ZONE A2	ZONE A3	ZONE A1- ORM	ZONE A2- ORM	ZONE A3- ORM
<b>Environmental Management</b>				✓	✓	✓
<b>Farm</b>	✓	✓				
<b>Farm-based Alcohol Production Facility</b>	✓(6)	✓(6)	✓(6)			
<b>Farm Equipment Storage Building</b>	✓	✓	✓	✓	✓	✓
<b>Farm Produce Outlet, Accessory</b>	✓	✓	✓	✓	✓	✓
<b>Farm Vacation Home (ORM)</b>				✓	✓	✓
<b>Forest Management</b>				✓	✓	✓
<b>Gasoline Pump Island, Accessory</b>	✓	✓		✓	✓	
<b>Hobby Farm</b>			✓			
<b>Home Business (ORM)</b>				✓	✓	✓
<b>Home Industry (ORM)</b>				✓	✓	✓
<b>Home Occupation</b>	✓(1)	✓(1)	✓(1)			
<b>Livestock Facility</b>	✓	✓	✓	✓	✓	✓
<b>Nursery, Horticultural</b>	✓	✓	✓	✓	✓	✓
<b>On Farm Diversified Use</b>	✓(6)	✓(6)	✓(6)			
<b>Open Storage, Accessory</b>	✓	✓	✓	✓	✓	✓
<b>Produce Storage Building</b>	✓	✓	✓	✓	✓	✓
<b>Transportation, Infrastructure &amp; Utilities</b>				✓	✓	✓

#### Footnotes for Table 10.1

- (1) No more than 6 students are permitted in any one lesson for a *home occupation* involving the instruction of a craft or skill.
- (2) A bunkhouse shall only be permitted on lots having a minimum lot area of 6 hectares.
- (3) Permitted in a detached dwelling only.
- (4) Permitted only on a vacant *lot* of record where a single *detached dwelling* would have been permitted as of November 15, 2001 and *accessory uses* thereto.
- (5)
  - i) An *agriculture-related commercial* or *agriculture-related industrial use* shall only be permitted as the principle use on *lots* having an area not exceeding 4 hectares and receiving site plan approval pursuant to Section 41 of the Planning Act.
  - ii) An *agriculture-related commercial* or *agriculture-related industrial use* shall also be permitted secondary to an active *farm* subject to the provisions of Section 10.5.
- (6) Must comply with the provisions of Section 10.5.

### 10.3 ZONE STANDARDS

No person shall, within any **Agricultural** and **Rural Zone**, use any *lot* or erect, *alter*, use any *building* or *structure* except in accordance with the following *zone* provisions. A number(s) following the *zone* standard, *zone* heading or description of the standard, indicates an additional *Zone* requirement. These additional standards are listed at the end of **Table 10.2**.

**TABLE 10.2**

STANDARD	ZONE A1	ZONE A2	ZONE A3	ZONE A1-ORM	ZONE A2-ORM	ZONE A3-ORM
<b>Lot Area (Minimum)</b>	8 ha	6 ha	4 ha	8 ha	6 ha	4 ha
<b>Lot Frontage (Minimum)</b>	120 m	90 m	55 m	120 m	90 m	55 m
<b>Building Area (Maximum)</b>	(1)(2)	(1)(2)	5%	(1)(2)	(1)(2)	5%
<b>Yards:</b>						
<b>Front Yard (Minima)</b>	18 m	18 m	18 m	18 m	18 m	18 m
<b>Exterior Side Yard (Minimum)</b>	18 m	18 m	18 m	18 m	18 m	18 m
<b>Rear Yards (Minima)</b>	10 m	10 m		10 m	10 m	
<i>Main building</i>			15 m			15 m
<i>Accessory building</i>			10 m			10 m
<b>Interior Side Yards (Minima)</b>			10 m			10 m
Existing <i>lots</i> of less than 8 ha	3 m			3 m		
Existing <i>lots</i> of less than 6 ha		3 m			3 m	
Other <i>lots</i>	15 m	15 m		15 m	15 m	
<b>Building Heights (Maxima)</b>						
Residential <i>uses</i>	10.5 m	10.5 m	10.5 m	10.5 m	10.5 m	10.5 m
Non-Residential <i>uses</i>	12.2 m	12.2 m	12.2 m	12.2 m	12.2 m	12.2 m
<b>Landscaping Area (Minimum)</b>	10%	10%	50%	10%	10%	50%
<b>Accessory Gasoline Pump Island Setback (Minimum)</b>	9 m	9 m		9 m	9 m	
<b>Driveway Setback (Minimum)</b>	3m	3m	3m	3m	3m	3m
<b>Parking Space Setback (Minimum)</b>						
From any <i>street line</i>	3m	3m	3m	3m	3m	3m

#### Footnotes For Table 10.2

- (1) The maximum *building area* shall be the lesser of 5% or 0.8 hectares.
- (2) The maximum *building area* shall not apply to *Public Uses* owned and operated by the Town of Caledon.

### 10.4 Agricultural and Rural Zones – Special Provisions and Standards

#### 10.4.1 Application of RR Zone Provisions and Standards

Where an *existing lot* within the A1 or A2 or A3 *Zone* fails to comply with either one or both of the minimum *lot area* or minimum *lot frontage* standards of the applicable *zone*, such *lot* may be used as follows:

- For *uses* listed in the RR column of Table 6.1 in accordance with the applicable standards and provisions of Section 6; or

- For non-residential *uses* listed in the applicable A1 or A2 or A3 *Zone* identified in Table 10.1 in accordance with applicable standards and provisions of Section 10.

## **10.5 ON-farm diversified and agri-tourism special provisions**

**10.5.1** On-Farm Diversified Use shall comply with the following provisions:

**10.5.2** No more than 2% to a maximum of 2000m<sup>2</sup> (0.2ha) of the *lot area* shall be used for an *on-farm diversified use* including but not limited to *buildings or structures, parking areas* and all components used exclusively for the *use*.

**10.5.3** A minimum of 1 *parking space* per 100m<sup>2</sup> of total *floor area* is required.

**10.5.4** There shall be no advertising on the property, other than a lawful sign, to indicate to persons outside that any part of the lot is being used for an *on-farm diversified use*.

**10.5.5** No more than 25% of the area of the *dwelling unit* shall be used for an *on-farm diversified use*.

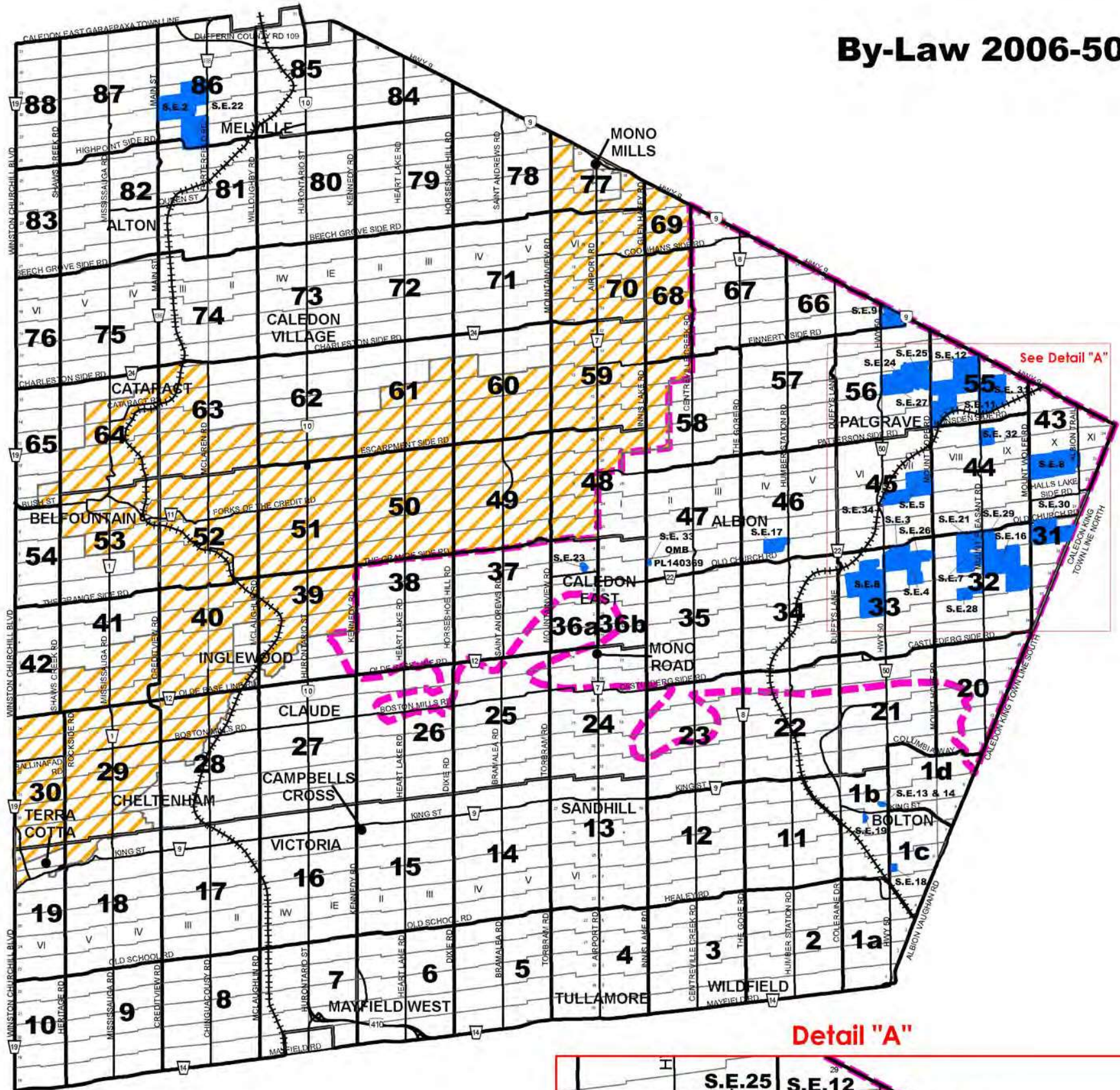
**10.5.6** The *accessory display* and retail sale of on-farm diversified use goods, wares or merchandise is permitted subject to the following provisions:

- i) the combined area of all areas devoted to retail sales and display shall not exceed 30% of the total *gross floor area* of the *on-farm diversified use*.
- ii) the accessory display and retail sales component of an on-farm diversified use must be conducted by or directly involve the owner/operator of the *farm* operation.

**10.5.7** Food concession stand(s) *accessory* to an *agri-tourism use* shall not exceed a combined total floor area of 50m<sup>2</sup>.



# By-Law 2006-50

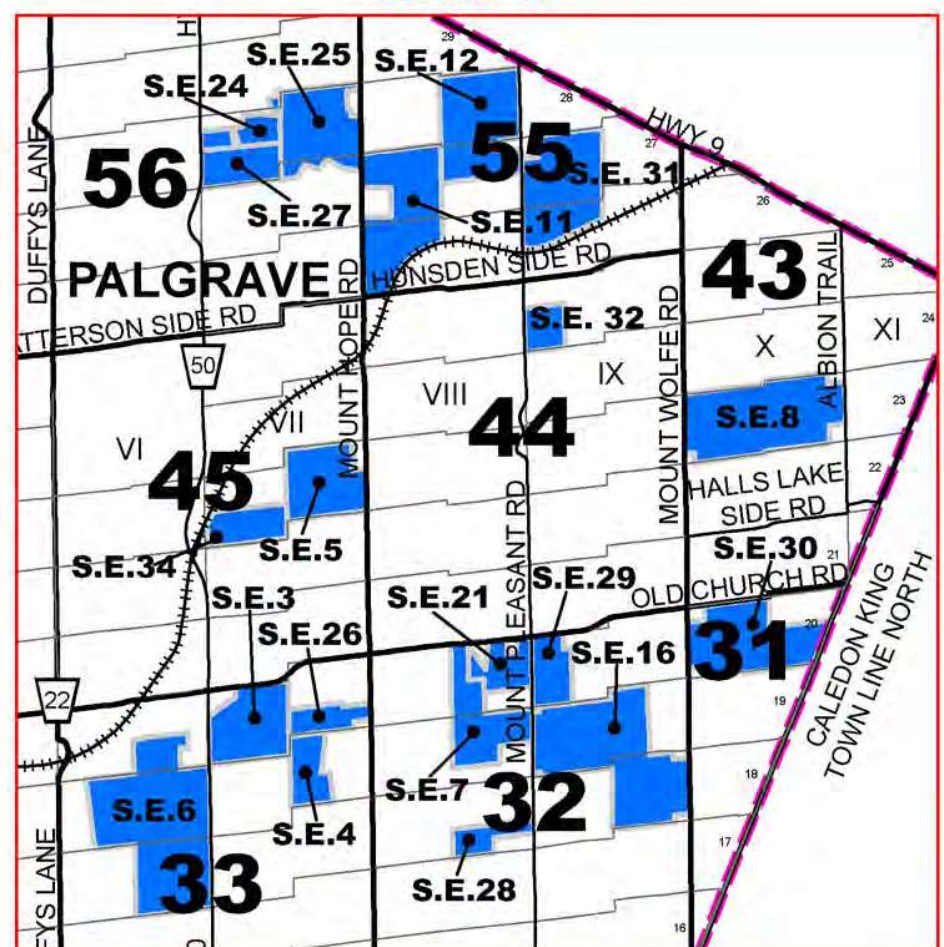


## Settlement Area Map Coverage

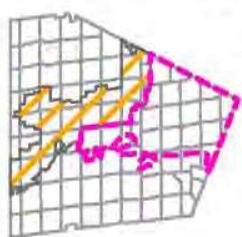
- 46 & 47 - Albion
- 81 & 82 - Alton
- 53 & 54 - Belfountain
- 1a, 1b, 1c & 1d - Bolton
- 36a & 36b - Caledon East
- 62 & 73 - Caledon Village
- 15 & 16 - Campbell's Cross
- 64 - Cataract
- 17, 18, 28 & 29 - Cheltenham
- 27 - Claude
- 39 & 40 - Inglewood
- 6 & 7 - Mayfield West
- 80, 81, 85 & 86 - Melville
- 77 - Mono Mills
- 24, 36a, 36b - Mono Road
- 45, 56 - Palgrave
- 13 - Sandhill
- 19 - Terra Cotta
- 4 - Tullamore
- 16 - Victoria
- 2 & 3 - Wildfield

This copy is provided for convenience only. If necessary, the original may be referred to in the office of the Town Clerk.

## Detail "A"



## INDEX MAP



## NIAGARA ESCARPMENT DEVELOPMENT CONTROL AREA

Lands lying within the Development Control area pursuant to the Niagara Planning and Development Act are subject to permit requirements under Ontario Regulations 685/50, as amended.

## OAK RIDGES MORAINIC CONSERVATION PLAN AREA BOUNDARY

## STRUCTURAL ENVELOPE

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## BY-LAW 2006-50

## ZONE INDEX MAP



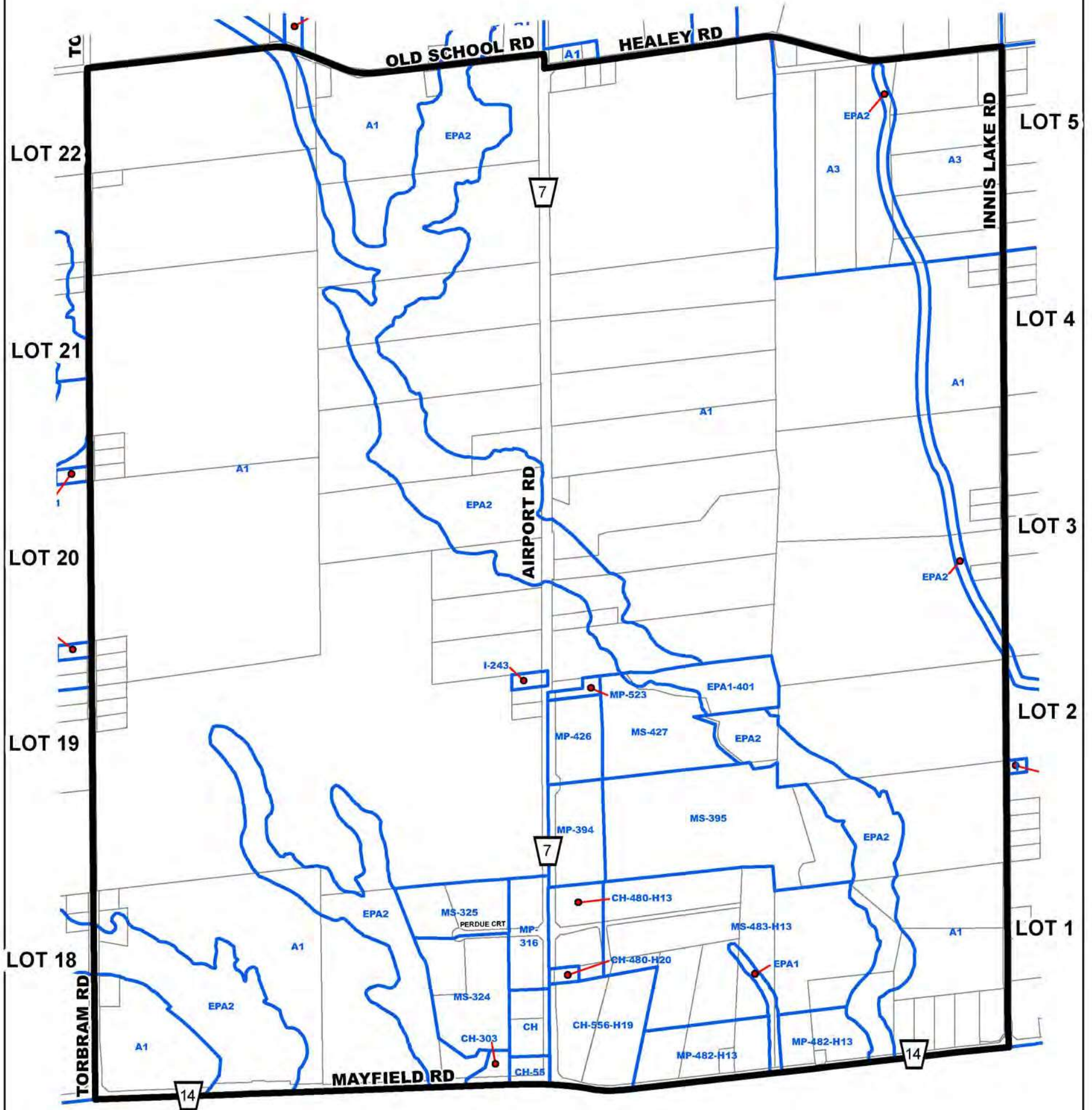
Date: 3 April 2006 Revised: August 2, 2019

File: S:\POLICY SECTION\GIS\Zoning\_bylaw\zone\_index\_map\_template.mxd

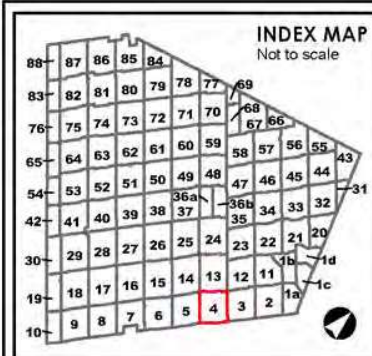


CON. 6 E.H.S. (CHING)

CON. 1 (ALB)



This copy is provided for convenience only. If necessary, the original may be referred to in the office of the Town Clerk.



**A2** ZONE SYMBOL

**A2-###** ZONE SYMBOL

Note: Number of suffixes represent Exceptions which can be looked up in the Exceptions section of the By-law.

ZONE BOUNDARY

STRUCTURAL ENVELOPE MAP

NIAGARA ESCARPMENT DEVELOPMENT CONTROL AREA

Lands lying within the Development Control area pursuant to the Niagara Planning and Development Act are subject to permit requirements under Ontario Regulations 685/50, as amended.

OAK RIDGES MORaine CONSERVATION PLAN AREA BOUNDARY

**WELLHEAD PROTECTION AREA BOUNDARY**

WP-2 WP-5 WP-10 WP-25  
Zone Maps amended to indicate the 2, 5, 10, and 25 year Wellhead Protection Areas.

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BY-LAW 2006-50

**ZONE MAP 4**  
**SCHEDULE "A"**

0 137.5 275 550 m

TOWN OF CALEDON

Date: 3 April 2006 Revised: August 2, 2016

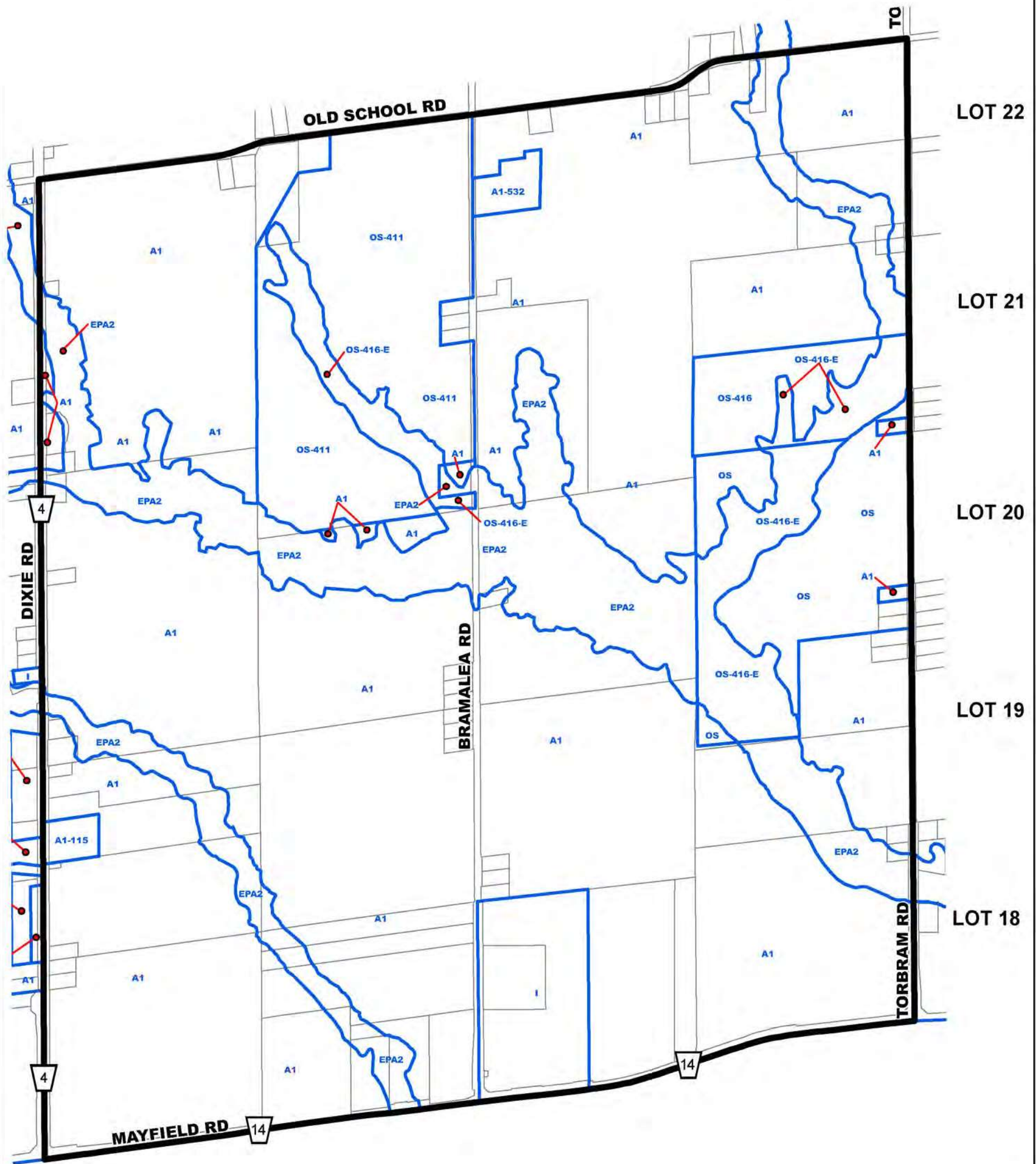
File: 21POLICY SECTION\GIS\Zoning\_bylaw2015.mxd

4

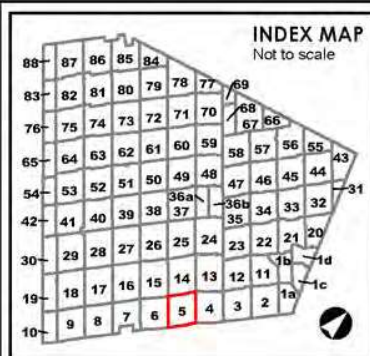


CON. 4 E.H.S. (CHING)

CON. 5 E.H.S. (CHING)



This copy is provided for convenience only. If necessary, the original may be referred to in the office of the Town Clerk.



**A2** ZONE SYMBOL

**A2-###** ZONE SYMBOL

Note: Number of suffixes represent Exceptions which can be looked up in the Exceptions section of the By-law.

ZONE BOUNDARY

STRUCTURAL ENVELOPE MAP

NIAGARA ESCARPMENT DEVELOPMENT CONTROL AREA

Lands lying within the Development Control area pursuant to the Niagara Planning and Development Act are subject to permit requirements under Ontario Regulations 685/50, as amended.

OAK RIDGES MORaine CONSERVATION PLAN AREA BOUNDARY

**WELLHEAD PROTECTION AREA BOUNDARY**

WP-2 WP-5 WP-10 WP-25  
Zone Maps amended to indicate the 2, 5, 10, and 25 year Wellhead Protection Areas.

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BY-LAW 2006-50

**ZONE MAP 5**  
SCHEDULE "A"

0 140 280 560

TOWN OF CALEDON

Date: 3 April 2006 Revised: August 21, 2015

File: S:\POLICY SECTION\GIS\ZoneMap\_pymw2015.mxd

5

# Appendix E

## Traffic Data

# TURNING MOVEMENT COUNTS





Turning Movement Count (96 . AIRPORT RD & HEALEY RD) CustID: 00720469 Miod:

Start Time	N Approach AIRPORT RD					E Approach HEALEY RD					S Approach AIRPORT RD					Int. Total (15 min)	Int. Total (1 hr)
	Left N:E	Thru N:S	UTurn N:N	Peds N:	Approach Total	Left E:S	Right E:N	UTurn E:E	Peds E:	Approach Total	Thru S:N	Right S:E	UTurn S:S	Peds S:	Approach Total		
07:00:00	43	166	0	0	209	10	20	0	0	30	59	15	0	0	74	313	
07:15:00	41	157	0	0	198	11	21	0	0	32	130	11	0	0	141	371	
07:30:00	47	188	0	0	235	6	24	0	0	30	37	12	0	0	49	314	
07:45:00	65	159	0	0	224	14	39	0	0	53	55	11	0	0	66	343	1341
08:00:00	32	179	0	0	211	11	21	0	0	32	36	11	0	0	47	290	1318
08:15:00	50	144	0	0	194	11	11	0	0	22	42	11	0	0	53	269	1216
08:30:00	35	116	0	0	151	7	12	0	0	19	30	12	0	0	42	212	1114
08:45:00	44	124	0	0	168	15	17	0	0	32	39	11	0	0	50	250	1021
***BREAK***																	
11:00:00	8	58	0	0	66	9	8	0	0	17	51	8	0	0	59	142	
11:15:00	3	70	0	0	73	11	8	0	0	19	47	5	0	0	52	144	
11:30:00	8	70	0	0	78	3	10	0	0	13	39	8	0	0	47	138	
11:45:00	9	56	0	0	65	8	10	0	0	18	43	7	0	0	50	133	557
12:00:00	14	43	0	0	57	12	16	0	0	28	41	6	0	0	47	132	547
12:15:00	15	47	0	0	62	9	14	0	0	23	39	4	0	0	43	128	531
12:30:00	9	44	0	0	53	9	8	0	0	17	34	2	0	0	36	106	499
12:45:00	9	41	0	0	50	9	14	0	0	23	51	5	0	0	56	129	495
13:00:00	13	50	0	0	63	8	13	0	0	21	47	3	0	0	50	134	497
13:15:00	12	54	0	0	66	6	14	0	0	20	47	4	0	0	51	137	506
13:30:00	14	52	0	0	66	6	13	0	0	19	61	9	0	0	70	155	555
13:45:00	14	51	0	0	65	5	14	0	0	19	57	7	0	0	64	148	574
***BREAK***																	
15:00:00	29	52	0	0	81	7	23	0	0	30	118	6	0	0	124	235	
15:15:00	29	43	0	0	72	13	35	0	0	48	115	13	0	0	128	248	
15:30:00	30	57	0	0	87	18	45	0	0	63	96	14	0	0	110	260	
15:45:00	30	50	0	0	80	16	43	0	0	59	104	7	0	0	111	250	993
16:00:00	22	55	0	0	77	24	63	0	0	87	153	12	0	0	165	329	1087
16:15:00	28	61	0	0	89	26	79	0	0	105	136	13	0	0	149	343	1182
16:30:00	31	55	0	0	86	13	54	0	0	67	157	10	0	0	167	320	1242
16:45:00	30	52	0	0	82	20	76	0	0	96	150	8	0	0	158	336	1328
17:00:00	15	64	0	0	79	21	59	0	0	80	149	9	0	0	158	317	1316
17:15:00	21	49	0	0	70	16	76	0	0	92	162	5	0	0	167	329	1302
17:30:00	15	59	0	0	74	18	62	0	0	80	148	11	0	0	159	313	1295
17:45:00	22	54	0	0	76	12	55	0	0	67	137	8	0	0	145	288	1247



<b>Grand Total</b>	787	2520	0	0	3307	384	977	0	0	1361	2610	278	0	0	2888	<b>7556</b>	-
<b>Approach%</b>	23.8%	76.2%	0%		-	28.2%	71.8%	0%		-	90.4%	9.6%	0%		-	-	-
<b>Totals %</b>	10.4%	33.4%	0%		43.8%	5.1%	12.9%	0%		18%	34.5%	3.7%	0%		38.2%	-	-
<b>Heavy</b>	12	293	0		-	34	16	0		-	231	39	0		-	-	-
<b>Heavy %</b>	1.5%	11.6%	0%		-	8.9%	1.6%	0%		-	8.9%	14%	0%		-	-	-
<b>Bicycles</b>	-	-	-		-	-	-	-		-	-	-	-		-	-	-
<b>Bicycle %</b>	-	-	-		-	-	-	-		-	-	-	-		-	-	-



**Peak Hour: 07:00 AM - 08:00 AM Weather: Moderate Rain (9.08 °C)**

Start Time	N Approach AIRPORT RD					E Approach HEALEY RD					S Approach AIRPORT RD					Int. Total (15 min)
	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	43	166	0	0	209	10	20	0	0	30	59	15	0	0	74	313
07:15:00	41	157	0	0	198	11	21	0	0	32	130	11	0	0	141	371
07:30:00	47	188	0	0	235	6	24	0	0	30	37	12	0	0	49	314
07:45:00	65	159	0	0	224	14	39	0	0	53	55	11	0	0	66	343
<b>Grand Total</b>	<b>196</b>	<b>670</b>	<b>0</b>	<b>0</b>	<b>866</b>	<b>41</b>	<b>104</b>	<b>0</b>	<b>0</b>	<b>145</b>	<b>281</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>330</b>	<b>1341</b>
<b>Approach%</b>	22.6%	77.4%	0%		-	28.3%	71.7%	0%		-	85.2%	14.8%	0%		-	-
<b>Totals %</b>	14.6%	50%	0%		64.6%	3.1%	7.8%	0%		10.8%	21%	3.7%	0%		24.6%	-
<b>PHF</b>	0.75	0.89	0		0.92	0.73	0.67	0		0.68	0.54	0.82	0		0.59	-
<b>Heavy</b>	3	27	0		30	5	1	0		6	47	3	0		50	-
<b>Heavy %</b>	1.5%	4%	0%		3.5%	12.2%	1%	0%		4.1%	16.7%	6.1%	0%		15.2%	-
<b>Lights</b>	193	643	0		836	36	103	0		139	234	46	0		280	-
<b>Lights %</b>	98.5%	96%	0%		96.5%	87.8%	99%	0%		95.9%	83.3%	93.9%	0%		84.8%	-
<b>Single-Unit Trucks</b>	0	13	0		13	0	0	0		0	15	0	0		15	-
<b>Single-Unit Trucks %</b>	0%	1.9%	0%		1.5%	0%	0%	0%		0%	5.3%	0%	0%		4.5%	-
<b>Buses</b>	3	1	0		4	0	1	0		1	12	2	0		14	-
<b>Buses %</b>	1.5%	0.1%	0%		0.5%	0%	1%	0%		0.7%	4.3%	4.1%	0%		4.2%	-
<b>Articulated Trucks</b>	0	13	0		13	5	0	0		5	20	1	0		21	-
<b>Articulated Trucks %</b>	0%	1.9%	0%		1.5%	12.2%	0%	0%		3.4%	7.1%	2%	0%		6.4%	-



**Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (9.06 °C)**

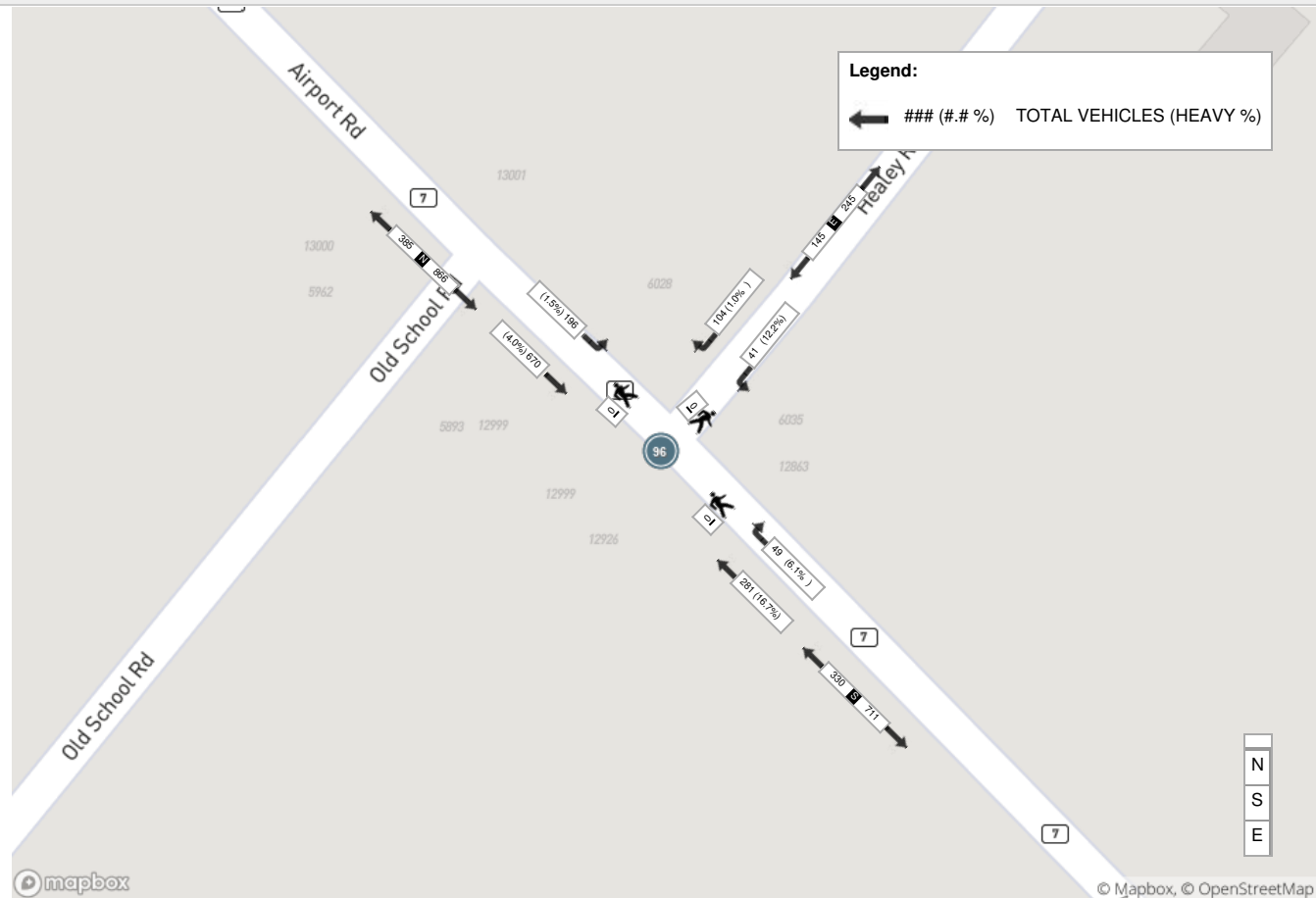
Start Time	N Approach AIRPORT RD					E Approach HEALEY RD					S Approach AIRPORT RD					Int. Total (15 min)
	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	13	50	0	0	63	8	13	0	0	21	47	3	0	0	50	134
13:15:00	12	54	0	0	66	6	14	0	0	20	47	4	0	0	51	137
13:30:00	14	52	0	0	66	6	13	0	0	19	61	9	0	0	70	155
13:45:00	14	51	0	0	65	5	14	0	0	19	57	7	0	0	64	148
<b>Grand Total</b>	<b>53</b>	<b>207</b>	<b>0</b>	<b>0</b>	<b>260</b>	<b>25</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>79</b>	<b>212</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>235</b>	<b>574</b>
<b>Approach%</b>	20.4%	79.6%	0%		-	31.6%	68.4%	0%		-	90.2%	9.8%	0%		-	-
<b>Totals %</b>	9.2%	36.1%	0%		45.3%	4.4%	9.4%	0%		13.8%	36.9%	4%	0%		40.9%	-
<b>PHF</b>	0.95	0.96	0		0.98	0.78	0.96	0		0.94	0.87	0.64	0		0.84	-
<b>Heavy</b>	2	33	0		35	6	0	0		6	26	6	0		32	-
<b>Heavy %</b>	3.8%	15.9%	0%		13.5%	24%	0%	0%		7.6%	12.3%	26.1%	0%		13.6%	-
<b>Lights</b>	51	174	0		225	19	54	0		73	186	17	0		203	-
<b>Lights %</b>	96.2%	84.1%	0%		86.5%	76%	100%	0%		92.4%	87.7%	73.9%	0%		86.4%	-
<b>Single-Unit Trucks</b>	1	17	0		18	0	0	0		0	9	3	0		12	-
<b>Single-Unit Trucks %</b>	1.9%	8.2%	0%		6.9%	0%	0%	0%		0%	4.2%	13%	0%		5.1%	-
<b>Buses</b>	1	3	0		4	1	0	0		1	8	0	0		8	-
<b>Buses %</b>	1.9%	1.4%	0%		1.5%	4%	0%	0%		1.3%	3.8%	0%	0%		3.4%	-
<b>Articulated Trucks</b>	0	13	0		13	5	0	0		5	9	3	0		12	-
<b>Articulated Trucks %</b>	0%	6.3%	0%		5%	20%	0%	0%		6.3%	4.2%	13%	0%		5.1%	-



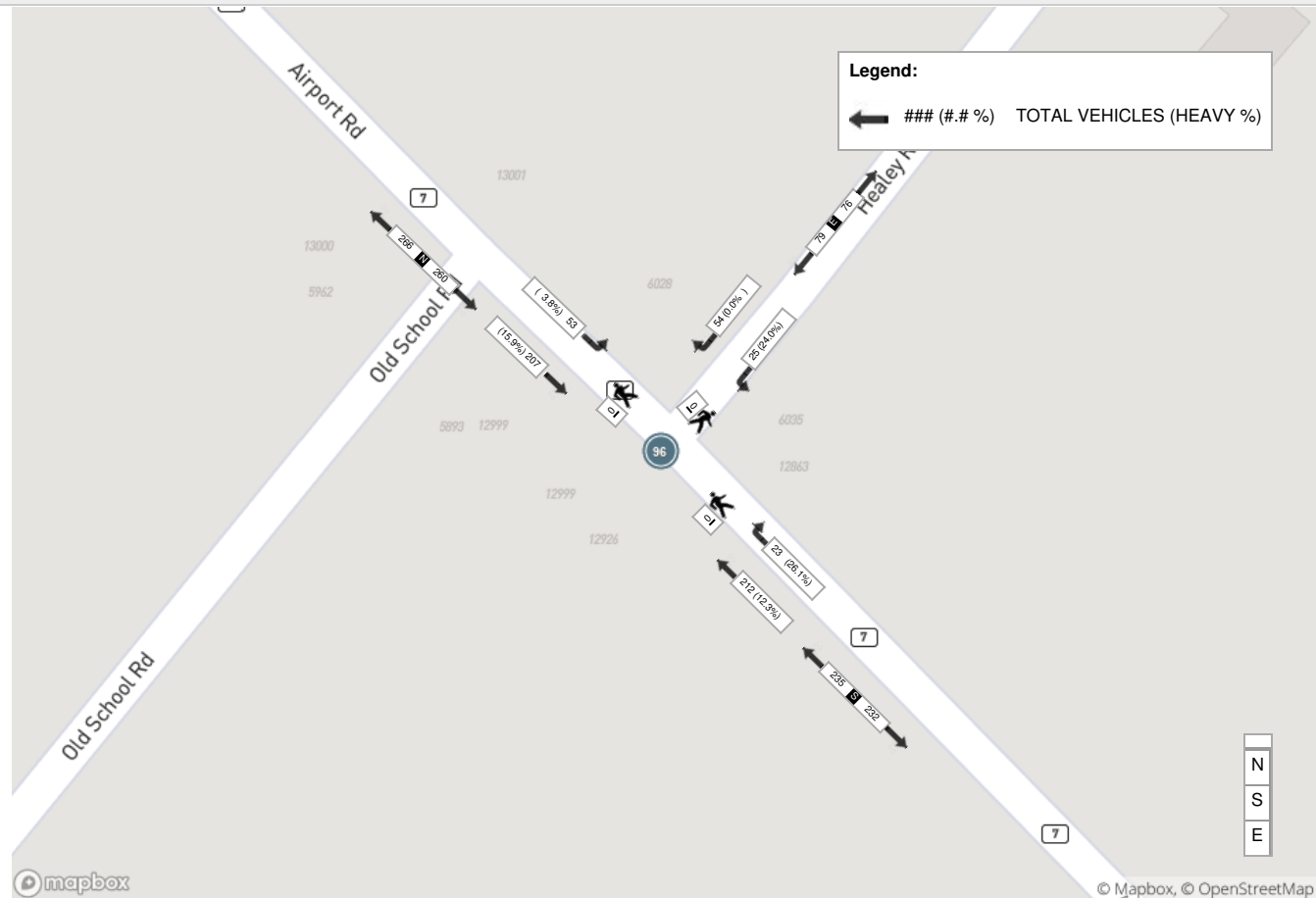
**Peak Hour: 04:00 PM - 05:00 PM Weather: Light Rain (10.54 °C)**

Start Time	N Approach AIRPORT RD					E Approach HEALEY RD					S Approach AIRPORT RD					Int. Total (15 min)
	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	Thru	Right	UTurn	Peds	Approach Total	
16:00:00	22	55	0	0	77	24	63	0	0	87	153	12	0	0	165	329
16:15:00	28	61	0	0	89	26	79	0	0	105	136	13	0	0	149	343
16:30:00	31	55	0	0	86	13	54	0	0	67	157	10	0	0	167	320
16:45:00	30	52	0	0	82	20	76	0	0	96	150	8	0	0	158	336
<b>Grand Total</b>	<b>111</b>	<b>223</b>	<b>0</b>	<b>0</b>	<b>334</b>	<b>83</b>	<b>272</b>	<b>0</b>	<b>0</b>	<b>355</b>	<b>596</b>	<b>43</b>	<b>0</b>	<b>0</b>	<b>639</b>	<b>1328</b>
<b>Approach%</b>	33.2%	66.8%	0%		-	23.4%	76.6%	0%		-	93.3%	6.7%	0%		-	-
<b>Totals %</b>	8.4%	16.8%	0%		25.2%	6.3%	20.5%	0%		26.7%	44.9%	3.2%	0%		48.1%	-
<b>PHF</b>	0.9	0.91	0		0.94	0.8	0.86	0		0.85	0.95	0.83	0		0.96	-
<b>Heavy</b>	0	51	0		51	3	6	0		9	43	9	0		52	-
<b>Heavy %</b>	0%	22.9%	0%		15.3%	3.6%	2.2%	0%		2.5%	7.2%	20.9%	0%		8.1%	-
<b>Lights</b>	111	172	0		283	80	266	0		346	553	34	0		587	-
<b>Lights %</b>	100%	77.1%	0%		84.7%	96.4%	97.8%	0%		97.5%	92.8%	79.1%	0%		91.9%	-
<b>Single-Unit Trucks</b>	0	14	0		14	0	5	0		5	21	2	0		23	-
<b>Single-Unit Trucks %</b>	0%	6.3%	0%		4.2%	0%	1.8%	0%		1.4%	3.5%	4.7%	0%		3.6%	-
<b>Buses</b>	0	19	0		19	3	1	0		4	1	1	0		2	-
<b>Buses %</b>	0%	8.5%	0%		5.7%	3.6%	0.4%	0%		1.1%	0.2%	2.3%	0%		0.3%	-
<b>Articulated Trucks</b>	0	18	0		18	0	0	0		0	21	6	0		27	-
<b>Articulated Trucks %</b>	0%	8.1%	0%		5.4%	0%	0%	0%		0%	3.5%	14%	0%		4.2%	-

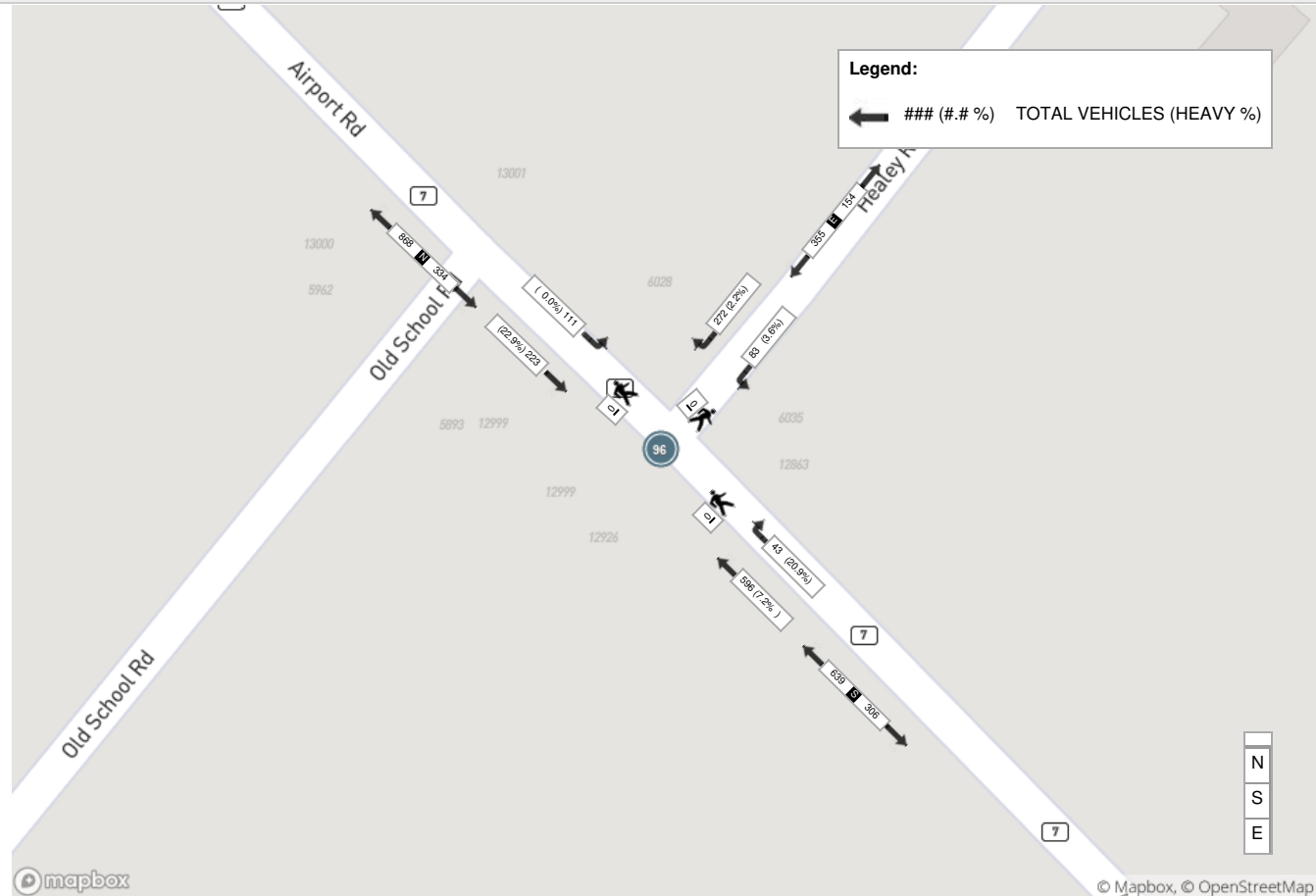
**Peak Hour: 07:00 AM - 08:00 AM    Weather: Moderate Rain (9.08 °C)**



**Peak Hour: 01:00 PM - 02:00 PM    Weather: Light Rain (9.06 °C)**



**Peak Hour: 04:00 PM - 05:00 PM    Weather: Light Rain (10.54 °C)**







Turning Movement Count (1 . AIRPORT RD & MAYFIELD RD) CustID: 00717433 MioID: 327722

Start Time	N Approach AIRPORT RD						E Approach MAYFIELD RD						S Approach AIRPORT RD						W Approach MAYFIELD RD						Int. Total (15 min)	Int. Total (1 hr)	
	Left N-E	Thru N-S	Right N-W	U-Turn N-N	Peds N:	Approach Total	Left E-S	Thru E-W	Right E-N	U-Turn E-E	Peds E:	Approach Total	Left S-W	Thru S-N	Right S-E	U-Turn S-S	Peds S:	Approach Total	Left W-N	Thru W-E	Right W-S	U-Turn W-W	Peds W:	Approach Total			
07:00:00	20	178	46	1	2	245	23	131	3	0	0	157	20	58	36	0	1	114	23	123	30	0	1	176	692		
07:15:00	29	172	21	2	2	224	26	134	8	0	0	168	24	51	38	0	1	113	22	145	42	0	0	209	714		
07:30:00	23	178	35	1	0	237	33	121	7	0	0	161	28	51	48	0	0	127	26	147	41	0	0	214	739		
07:45:00	25	177	22	1	0	225	36	101	6	0	0	143	26	68	61	0	0	155	29	143	46	0	2	218	741	2886	
08:00:00	20	141	12	0	1	173	29	132	12	0	1	173	31	63	44	0	3	138	34	105	38	0	3	177	661	2855	
08:15:00	19	142	28	1	0	190	34	95	4	0	0	133	31	55	55	0	1	141	34	126	44	1	0	205	669	2810	
08:30:00	22	121	28	0	0	171	27	113	11	0	1	151	31	56	47	0	2	134	32	112	34	0	0	178	634	2705	
08:45:00	28	109	12	1	1	150	33	121	12	0	2	166	39	57	39	0	0	135	32	124	36	0	0	192	643	2607	
***BREAK***																											
11:00:00	25	62	15	2	0	104	18	79	7	0	0	104	27	36	31	0	0	94	26	78	22	0	0	126	428		
11:15:00	18	73	27	0	0	118	34	85	14	0	0	133	19	62	20	0	0	101	20	83	18	0	0	121	473		
11:30:00	20	55	27	0	0	102	23	101	4	0	0	128	21	46	44	0	1	111	20	85	27	0	0	132	473		
11:45:00	22	66	13	0	1	101	27	87	11	0	0	125	27	72	36	0	0	135	23	83	22	0	1	128	489	1863	
12:00:00	13	65	24	2	0	104	27	92	4	0	2	123	23	52	31	0	0	106	22	89	19	0	0	130	463	1898	
12:15:00	18	59	20	0	0	97	15	102	11	0	0	128	22	69	28	0	0	119	22	91	22	0	0	135	479	1904	
12:30:00	20	56	23	0	0	99	24	99	9	0	0	132	33	46	33	0	0	112	15	78	23	0	0	116	459	1890	
12:45:00	12	74	30	1	1	117	26	97	10	0	1	133	29	65	18	0	0	112	26	78	16	0	0	120	482	1883	
13:00:00	23	58	18	0	4	99	25	89	14	0	0	128	17	55	29	0	0	101	25	89	16	0	4	130	458	1878	
13:15:00	15	59	23	1	10	98	27	92	8	0	3	127	22	78	23	0	1	123	23	84	17	0	0	124	472	1871	
13:30:00	19	64	28	0	0	111	32	66	13	0	0	111	22	53	48	0	0	123	24	100	29	0	0	153	498	1910	
13:45:00	18	63	26	0	4	107	29	78	14	0	0	121	26	72	28	0	1	126	14	92	23	0	1	129	483	1911	
***BREAK***																											
15:00:00	14	85	61	1	1	161	36	134	12	0	1	182	24	143	48	0	3	215	30	121	29	0	1	180	738		
15:15:00	15	64	32	0	0	111	38	123	4	0	0	165	35	110	50	0	1	195	30	136	26	0	0	192	663		
15:30:00	13	78	16	0	0	107	31	107	11	0	2	149	45	133	61	0	0	239	24	130	24	0	1	178	673		
15:45:00	10	80	29	0	2	119	41	146	13	0	0	200	31	159	52	0	1	242	30	145	28	0	1	203	764	2838	
16:00:00	17	53	32	1	0	103	39	137	15	0	0	191	46	138	46	0	0	230	27	141	27	0	0	195	719	2819	
16:15:00	13	101	32	2	0	148	27	167	10	0	0	204	38	184	48	0	2	270	31	146	28	0	1	205	827	2983	
16:30:00	21	72	35	0	1	128	35	166	9	0	2	210	57	171	39	0	1	267	22	134	22	0	2	178	783	3093	
16:45:00	18	75	26	1	0	120	41	145	9	0	0	195	46	144	49	0	1	239	37	153	37	0	0	227	781	3110	
17:00:00	14	80	42	3	1	139	40	151	8	0	1	199	47	160	44	0	0	251	29	116	56	0	0	201	790	3181	
17:15:00	14	88	32	1	1	135	29	161	5	0	0	195	40	168	45	0	1	253	23	127	43	0	0	193	776	3130	
17:30:00	18	57	30	1	2	106	30	156	4	0	1	190	55	147	32	0	1	234	23	169	32	0	1	224	754	3101	
17:45:00	16	54	31	0	1	101	26	158	5	0	4	189	45	133	44	0	0	222	24	121	28	0	2	173	685	3005	
Grand Total	592	2859	876	23	35	4350	961	3766	287	0	21	5014	1027	2955	1295	0	22	5277	822	3694	945	1	21	5462	20103	-	
Approach%	13.6%	65.7%	20.1%	0.5%	-	-	19.2%	75.1%	5.7%	0%	-	-	19.5%	56%	24.5%	0%	-	-	15%	67.6%	17.3%	0%	-	-	-	-	-
Totals %	2.9%	14.2%	4.4%	0.1%	-	21.6%	4.8%	18.7%	1.4%	0%	-	24.9%	5.1%	14.7%	6.4%	0%	-	26.2%	4.1%	18.4%	4.7%	0%	-	27.2%	-	-	
Heavy	156	367	272	0	-	-	121	538	147	0	-	-	70	383	195	0	-	-	255	535	88	0	-	-	-	-	-
Heavy %	26.4%	12.8%	31.1%	0%	-	-	12.6%	14.3%	51.2%	0%	-	-	6.8%	13%	15.1%	0%	-	-	31%	14.5%	9.3%	0%	-	-	-	-	-
Bicycles	0	1	0	0	-	-	0	0	1	0	-	-	0	0	0	0	-	-	0	1	0	0	-	-	-	-	-
Bicycle %	0%	0%	0%	0%	-	-	0%	0%	0.3%	0%	-	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	-	-	-	-	-



Peak Hour: 07:00 AM - 08:00 AM    Weather: Partly Cloudy (12.5 °C)

Start Time	N Approach AIRPORT RD						E Approach MAYFIELD RD						S Approach AIRPORT RD						W Approach MAYFIELD RD						Int. Total (15 min)	
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total		
07:00:00	20	178	46	1	2	245	23	131	3	0	0	157	20	58	36	0	1	114	23	123	30	0	1	176	692	
07:15:00	29	172	21	2	2	224	26	134	8	0	0	168	24	51	38	0	1	113	22	145	42	0	0	209	714	
07:30:00	23	178	35	1	0	237	33	121	7	0	0	161	28	51	48	0	0	127	26	147	41	0	0	214	739	
07:45:00	25	177	22	1	0	225	36	101	6	0	0	143	26	68	61	0	0	155	29	143	46	0	2	218	741	
Grand Total	97	705	124	5	4	931	118	487	24	0	0	629	98	228	183	0	2	509	100	558	159	0	3	817	2886	
Approach%	10.4%	75.7%	13.3%	0.5%		-	18.8%	77.4%	3.8%	0%		-	19.3%	44.8%	36%	0%		-	12.2%	68.3%	19.5%	0%		-	-	
Totals %	3.4%	24.4%	4.3%	0.2%		32.3%	4.1%	16.9%	0.8%	0%		21.8%	3.4%	7.9%	6.3%	0%		17.6%	3.5%	19.3%	5.5%	0%		28.3%	-	
PHF	0.84	0.99	0.67	0.63		0.95	0.82	0.91	0.75	0		0.94	0.88	0.84	0.75	0		0.82	0.86	0.95	0.86	0		0.94	-	
Heavy	28	53	37	0		118	13	78	8	0		99	6	31	32	0		69	22	59	10	0		91	-	
Heavy %	28.9%	7.5%	29.8%	0%		12.7%	11%	16%	33.3%	0%		15.7%	6.1%	13.6%	17.5%	0%		13.6%	22%	10.6%	6.3%	0%		11.1%	-	
Lights	69	652	87	5		813	105	409	16	0		530	92	197	151	0		440	78	499	149	0		726	-	
Lights %	71.1%	92.5%	70.2%	100%		87.3%	89%	84%	66.7%	0%		84.3%	93.9%	86.4%	82.5%	0%		86.4%	78%	89.4%	93.7%	0%		88.9%	-	
Single-Unit Trucks	6	13	9	0		28	7	37	8	0		52	2	10	12	0		24	8	23	1	0		32	-	
Single-Unit Trucks %	6.2%	1.8%	7.3%	0%		3%	5.9%	7.6%	33.3%	0%		8.3%	2%	4.4%	6.6%	0%		4.7%	8%	4.1%	0.6%	0%		3.9%	-	
Buses	16	29	18	0		63	0	2	0	0		2	0	8	13	0		21	0	4	1	0		5	-	
Buses %	16.5%	4.1%	14.5%	0%		6.8%	0%	0.4%	0%	0%		0.3%	0%	3.5%	7.1%	0%		4.1%	0%	0.7%	0.6%	0%		0.6%	-	
Articulated Trucks	6	11	10	0		27	6	39	0	0		45	4	13	7	0		24	14	32	8	0		54	-	
Articulated Trucks %	6.2%	1.6%	8.1%	0%		2.9%	5.1%	8%	0%	0%		7.2%	4.1%	5.7%	3.8%	0%		4.7%	14%	5.7%	5%	0%		6.6%	-	
Pedestrians	-	-	-	-	4	-	-	-	-	0		-	-	-	-	1		-	-	-	-	-	3		-	-
Pedestrians%	-	-	-	-	44.4%	-	-	-	-	0%		-	-	-	-	11.1%		-	-	-	-	-	33.3%		-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0		-	-	-	-	1		-	-	-	-	-	0		-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	11.1%		-	-	-	-	-	0%		-	-
Bicycles on Road	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%		-	-



Peak Hour: 01:00 PM - 02:00 PM Weather: Partly Cloudy (18.5 °C)

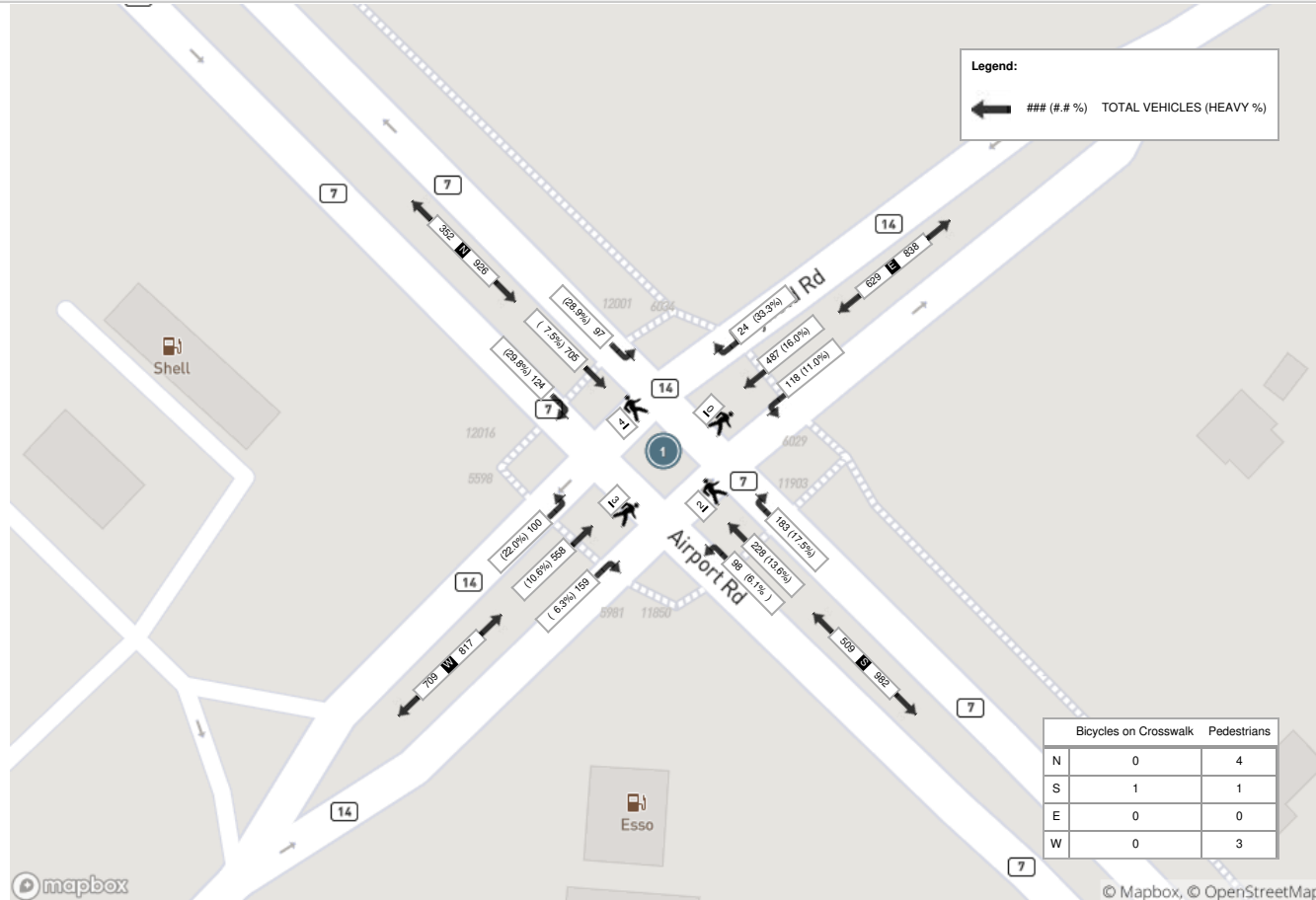
Start Time	N Approach AIRPORT RD						E Approach MAYFIELD RD						S Approach AIRPORT RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
13:00:00	23	58	18	0	4	99	25	89	14	0	0	128	17	55	29	0	0	101	25	89	16	0	4	130	458
13:15:00	15	59	23	1	10	98	27	92	8	0	3	127	22	78	23	0	1	123	23	84	17	0	0	124	472
13:30:00	19	64	28	0	0	111	32	66	13	0	0	111	22	53	48	0	0	123	24	100	29	0	0	153	498
13:45:00	18	63	26	0	4	107	29	78	14	0	0	121	26	72	28	0	1	126	14	92	23	0	1	129	483
Grand Total	75	244	95	1	18	415	113	325	49	0	3	487	87	258	128	0	2	473	86	365	85	0	5	536	1911
Approach%	18.1%	58.8%	22.9%	0.2%		-	23.2%	66.7%	10.1%	0%		-	18.4%	54.5%	27.1%	0%		-	16%	68.1%	15.9%	0%		-	-
Totals %	3.9%	12.8%	5%	0.1%		21.7%	5.9%	17%	2.6%	0%		25.5%	4.6%	13.5%	6.7%	0%		24.8%	4.5%	19.1%	4.4%	0%		28%	-
PHF	0.82	0.95	0.85	0.25		0.93	0.88	0.88	0.88	0		0.95	0.84	0.83	0.67	0		0.94	0.86	0.91	0.73	0		0.88	-
Heavy	23	50	41	0		114	20	62	25	0		107	10	42	25	0		77	28	74	12	0		114	-
Heavy %	30.7%	20.5%	43.2%	0%		27.5%	17.7%	19.1%	51%	0%		22%	11.5%	16.3%	19.5%	0%		16.3%	32.6%	20.3%	14.1%	0%		21.3%	-
Lights	52	194	54	1		301	93	263	24	0		380	77	216	103	0		396	58	291	73	0		422	-
Lights %	69.3%	79.5%	56.8%	100%		72.5%	82.3%	80.9%	49%	0%		78%	88.5%	83.7%	80.5%	0%		83.7%	67.4%	79.7%	85.9%	0%		78.7%	-
Single-Unit Trucks	17	19	15	0		51	13	26	17	0		56	5	17	11	0		33	12	34	9	0		55	-
Single-Unit Trucks %	22.7%	7.8%	15.8%	0%		12.3%	11.5%	8%	34.7%	0%		11.5%	5.7%	6.6%	8.6%	0%		7%	14%	9.3%	10.6%	0%		10.3%	-
Buses	1	10	8	0		19	0	0	1	0		1	0	4	4	0		8	5	0	0	0		5	-
Buses %	1.3%	4.1%	8.4%	0%		4.6%	0%	0%	2%	0%		0.2%	0%	1.6%	3.1%	0%		1.7%	5.8%	0%	0%	0%		0.9%	-
Articulated Trucks	5	21	18	0		44	7	36	7	0		50	5	21	10	0		36	11	40	3	0		54	-
Articulated Trucks %	6.7%	8.6%	18.9%	0%		10.6%	6.2%	11.1%	14.3%	0%		10.3%	5.7%	8.1%	7.8%	0%		7.6%	12.8%	11%	3.5%	0%		10.1%	-
Pedestrians	-	-	-	-	18	-	-	-	-	3		-	-	-	-	2		-	-	-	-	3		-	-
Pedestrians%	-	-	-	-	64.3%	-	-	-	-	10.7%		-	-	-	-	7.1%		-	-	-	-	10.7%		-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0		-	-	-	-	0		-	-	-	-	2		-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	7.1%		-	-
Bicycles on Road	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%		-	-



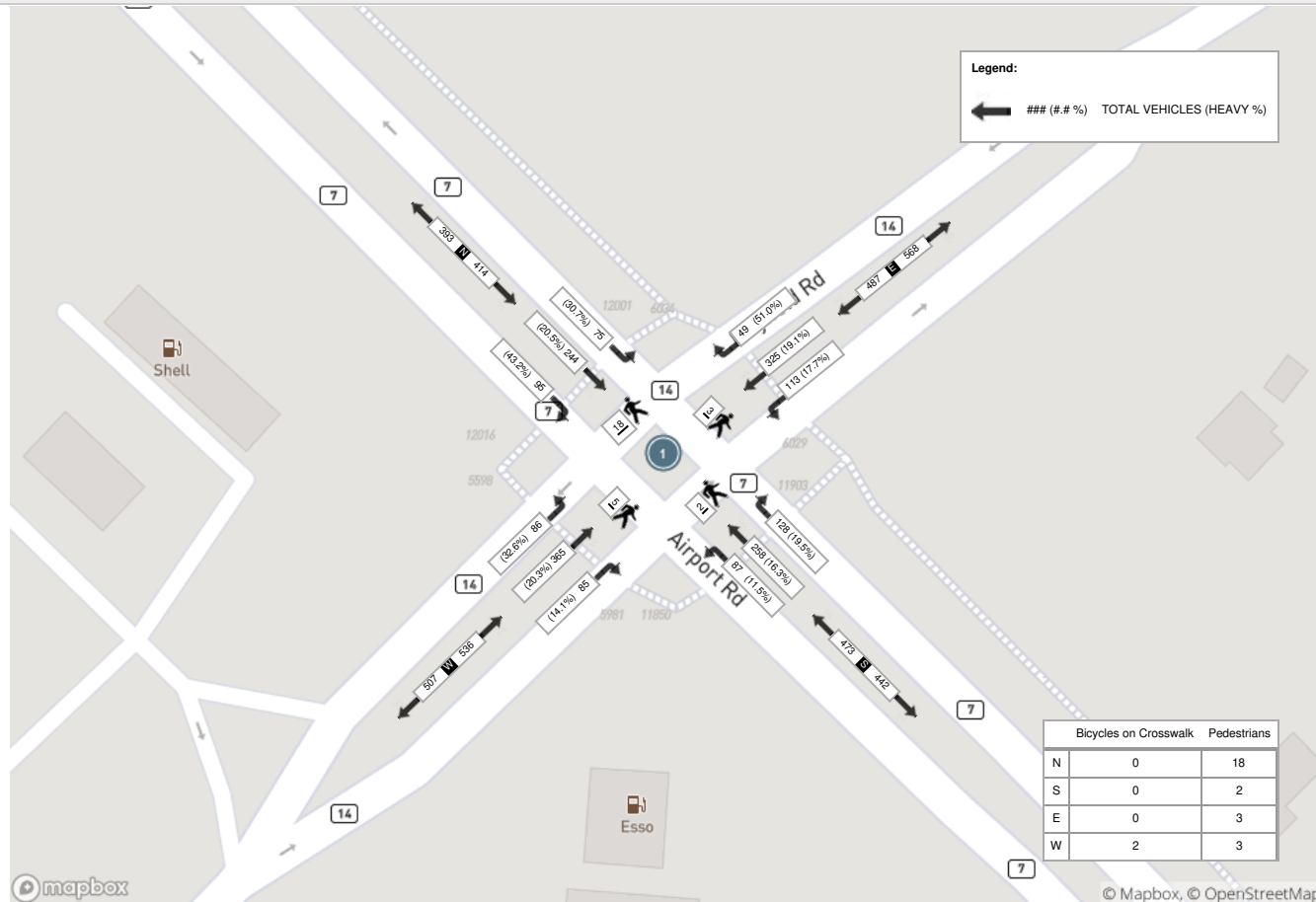
Peak Hour: 04:15 PM - 05:15 PM    Weather: Partly Cloudy (21.6 °C)

Start Time	N Approach AIRPORT RD						E Approach MAYFIELD RD						S Approach AIRPORT RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
16:15:00	13	101	32	2	0	148	27	167	10	0	0	204	38	184	48	0	2	270	31	146	28	0	1	205	827
16:30:00	21	72	35	0	1	128	35	166	9	0	2	210	57	171	39	0	1	267	22	134	22	0	2	178	783
16:45:00	18	75	26	1	0	120	41	145	9	0	0	195	46	144	49	0	1	239	37	153	37	0	0	227	781
17:00:00	14	80	42	3	1	139	40	151	8	0	1	199	47	160	44	0	0	251	29	116	56	0	0	201	790
Grand Total	66	328	135	6	2	535	143	629	36	0	3	808	188	659	180	0	4	1027	119	549	143	0	3	811	3181
Approach%	12.3%	61.3%	25.2%	1.1%	-	-	17.7%	77.8%	4.5%	0%	-	-	18.3%	64.2%	17.5%	0%	-	-	14.7%	67.7%	17.6%	0%	-	-	-
Totals %	2.1%	10.3%	4.2%	0.2%	16.8%	4.5%	19.8%	1.1%	0%	25.4%	5.9%	20.7%	5.7%	0%	32.3%	3.7%	17.3%	4.5%	0%	25.5%	-	-	-	-	-
PHF	0.79	0.81	0.8	0.5	0.9	0.87	0.94	0.9	0	0.96	0.82	0.9	0.92	0	0.95	0.8	0.9	0.64	0	0.89	-	-	-	-	-
Heavy	14	33	24	0	71	11	44	25	0	80	10	59	22	0	91	45	73	13	0	131	-	-	-	-	-
Heavy %	21.2%	10.1%	17.8%	0%	13.3%	7.7%	7%	69.4%	0%	9.9%	5.3%	9%	12.2%	0%	8.9%	37.8%	13.3%	9.1%	0%	16.2%	-	-	-	-	-
Lights	52	295	111	6	464	132	585	11	0	728	178	600	158	0	936	74	476	130	0	680	-	-	-	-	-
Lights %	78.8%	89.9%	82.2%	100%	86.7%	92.3%	93%	30.6%	0%	90.1%	94.7%	91%	87.8%	0%	91.1%	62.2%	86.7%	90.9%	0%	83.8%	-	-	-	-	-
Single-Unit Trucks	6	13	7	0	26	6	24	10	0	40	7	10	3	0	20	8	36	5	0	49	-	-	-	-	-
Single-Unit Trucks %	9.1%	4%	5.2%	0%	4.9%	4.2%	3.8%	27.8%	0%	5%	3.7%	1.5%	1.7%	0%	1.9%	6.7%	6.6%	3.5%	0%	6%	-	-	-	-	-
Buses	0	6	6	0	12	1	4	4	0	9	0	19	9	0	28	16	0	2	0	18	-	-	-	-	-
Buses %	0%	1.8%	4.4%	0%	2.2%	0.7%	0.6%	11.1%	0%	1.1%	0%	2.9%	5%	0%	2.7%	13.4%	0%	1.4%	0%	2.2%	-	-	-	-	-
Articulated Trucks	8	14	11	0	33	4	16	11	0	31	3	30	10	0	43	21	37	6	0	64	-	-	-	-	-
Articulated Trucks %	12.1%	4.3%	8.1%	0%	6.2%	2.8%	30.6%	0%	-	3.8%	1.6%	4.6%	5.6%	0%	4.2%	17.6%	6.7%	4.2%	0%	7.9%	-	-	-	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	3	-	-	-	-	4	-	-	-	-	3	-	-	-	-	-
Pedestrians%	-	-	-	-	16.7%	-	-	-	-	25%	-	-	-	-	33.3%	-	-	-	-	25%	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	1	0	0	-	-	-	-	-
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-

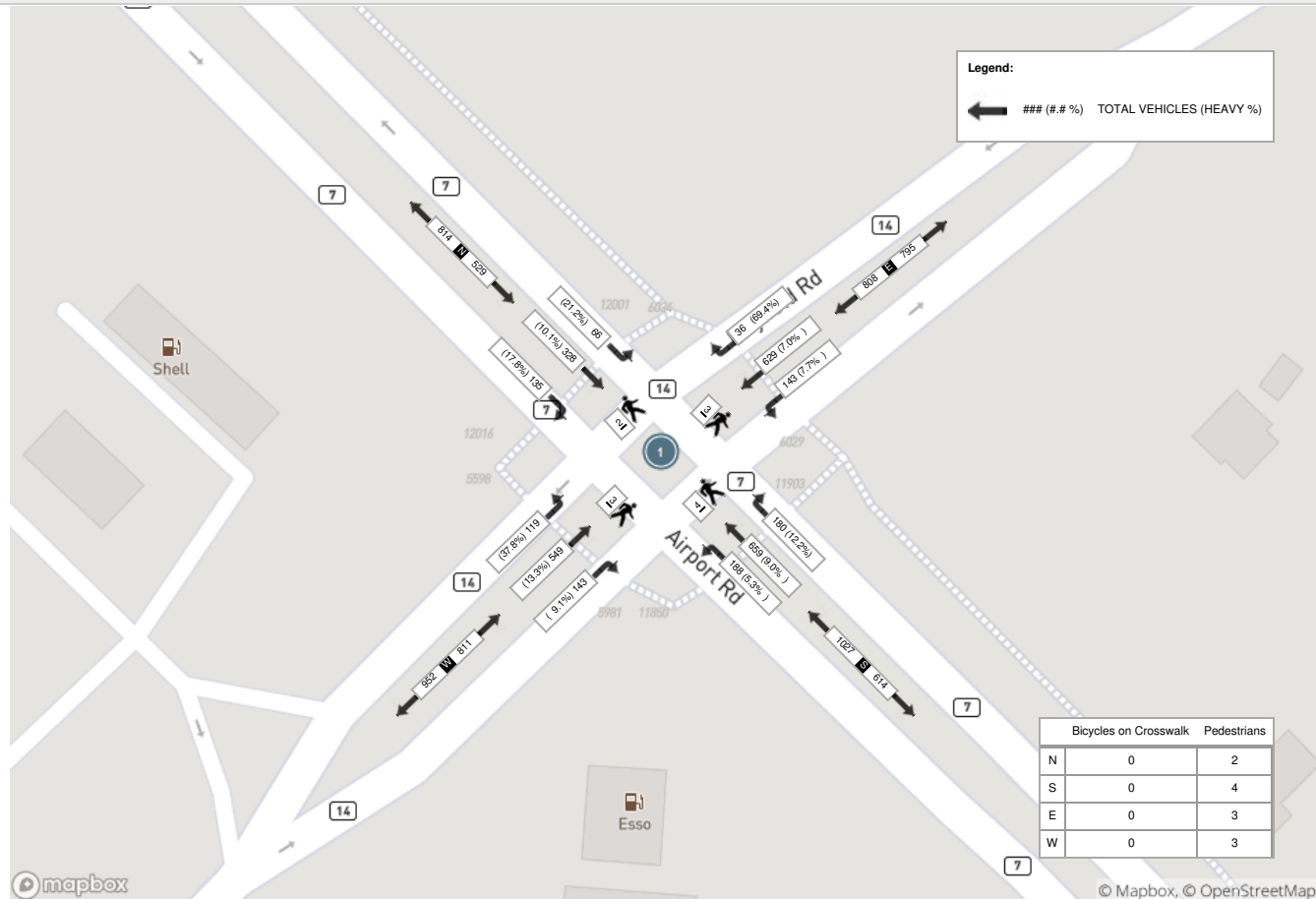
Peak Hour: 07:00 AM - 08:00 AM    Weather: Partly Cloudy (12.5 °C)



**Peak Hour: 01:00 PM - 02:00 PM    Weather: Partly Cloudy (18.5 °C)**



**Peak Hour: 04:15 PM - 05:15 PM    Weather: Partly Cloudy (21.6 °C)**





Turning Movement Count (97 . AIRPORT RD & OLD SCHOOL RD) CustID: 00720510 MioID:

Start Time	N Approach AIRPORT RD					S Approach AIRPORT RD					W Approach OLD SCHOOL RD					Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Right N:W	UTurn N:N	Peds N:	Approach Total	Left S:W	Thru S:N	UTurn S:S	Peds S:	Approach Total	Left W:N	Right W:S	UTurn W:W	Peds W:	Approach Total		
07:00:00	162	1	0	0	163	23	36	0	0	59	3	43	0	0	46	268	
07:15:00	161	4	0	0	165	21	40	0	0	61	3	43	0	0	46	272	
07:30:00	179	4	0	0	183	26	38	0	0	64	4	46	0	0	50	297	
07:45:00	142	2	0	0	144	38	60	0	0	98	6	73	0	0	79	321	1158
08:00:00	174	0	0	0	174	16	38	0	0	54	2	40	0	0	42	270	1160
08:15:00	143	3	0	0	146	10	38	0	0	48	4	50	0	0	54	248	1136
08:30:00	131	2	0	0	133	9	37	0	0	46	3	37	0	0	40	219	1058
08:45:00	108	3	0	0	111	14	44	0	0	58	5	52	0	0	57	226	963
***BREAK***																	
11:00:00	50	1	0	0	51	12	49	0	0	61	0	9	0	0	9	121	
11:15:00	68	1	0	0	69	9	46	0	0	55	5	10	0	0	15	139	
11:30:00	65	2	0	0	67	11	43	0	0	54	7	10	0	0	17	138	
11:45:00	50	2	0	0	52	8	38	0	0	46	2	11	0	0	13	111	509
12:00:00	50	3	0	0	53	16	47	0	0	63	8	12	0	0	20	136	524
12:15:00	44	0	0	0	44	12	40	0	0	52	2	14	0	0	16	112	497
12:30:00	40	0	0	0	40	9	37	0	0	46	3	10	0	0	13	99	458
12:45:00	42	2	0	0	44	14	54	0	0	68	2	11	0	0	13	125	472
13:00:00	52	0	0	0	52	12	55	0	0	67	4	12	0	0	16	135	471
13:15:00	52	1	0	0	53	14	53	0	0	67	4	15	0	0	19	139	498
13:30:00	52	1	0	0	53	12	59	0	0	71	1	15	0	0	16	140	539
13:45:00	52	3	0	0	55	13	68	0	0	81	2	14	0	0	16	152	566
***BREAK***																	
15:00:00	49	8	0	0	57	29	139	0	0	168	5	31	0	0	36	261	
15:15:00	48	1	0	0	49	36	107	0	0	143	3	29	0	0	32	224	
15:30:00	56	5	0	0	61	48	106	0	0	154	6	30	0	0	36	251	
15:45:00	48	2	0	0	50	63	104	0	0	167	8	33	0	0	41	258	994
16:00:00	57	3	0	0	60	64	155	0	0	219	1	27	0	0	28	307	1040
16:15:00	59	3	0	0	62	78	135	0	0	213	4	28	0	0	32	307	1123
16:30:00	56	4	0	0	60	58	169	0	0	227	8	33	0	0	41	328	1200
16:45:00	49	5	0	0	54	83	147	0	0	230	12	35	0	0	47	331	1273
17:00:00	63	3	0	0	66	57	161	0	0	218	7	18	0	0	25	309	1275
17:15:00	54	5	0	0	59	88	148	0	0	236	5	24	0	0	29	324	1292
17:30:00	54	0	0	0	54	70	150	0	0	220	5	18	0	0	23	297	1261
17:45:00	57	5	0	0	62	62	140	0	0	202	1	22	0	0	23	287	1217





Grand Total	2467	79	0	0	2546	1035	2581	0	0	3616	135	855	0	0	990	7152	-
Approach%	96.9%	3.1%	0%		-	28.6%	71.4%	0%		-	13.6%	86.4%	0%		-	-	-
Totals %	34.5%	1.1%	0%		35.6%	14.5%	36.1%	0%		50.6%	1.9%	12%	0%		13.8%	-	-
Heavy	291	4	0		-	14	255	0		-	7	14	0		-	-	-
Heavy %	11.8%	5.1%	0%		-	1.4%	9.9%	0%		-	5.2%	1.6%	0%		-	-	-
Bicycles	0	0	0		-	0	0	0		-	0	0	1		-	-	-
Bicycle %	0%	0%	0%		-	0%	0%	0%		-	0%	0%	0%		-	-	-



**Peak Hour: 07:15 AM - 08:15 AM Weather: Moderate Rain (9.08 °C)**

Start Time	N Approach AIRPORT RD					S Approach AIRPORT RD					W Approach OLD SCHOOL RD					Int. Total (15 min)
	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	
07:15:00	161	4	0	0	165	21	40	0	0	61	3	43	0	0	46	272
07:30:00	179	4	0	0	183	26	38	0	0	64	4	46	0	0	50	297
07:45:00	142	2	0	0	144	38	60	0	0	98	6	73	0	0	79	321
08:00:00	174	0	0	0	174	16	38	0	0	54	2	40	0	0	42	270
<b>Grand Total</b>	<b>656</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>666</b>	<b>101</b>	<b>176</b>	<b>0</b>	<b>0</b>	<b>277</b>	<b>15</b>	<b>202</b>	<b>0</b>	<b>0</b>	<b>217</b>	<b>1160</b>
<b>Approach%</b>	98.5%	1.5%	0%		-	36.5%	63.5%	0%		-	6.9%	93.1%	0%		-	-
<b>Totals %</b>	56.6%	0.9%	0%		57.4%	8.7%	15.2%	0%		23.9%	1.3%	17.4%	0%		18.7%	-
<b>PHF</b>	0.92	0.63	0		0.91	0.66	0.73	0		0.71	0.63	0.69	0		0.69	-
<b>Heavy</b>	31	0	0		31	3	26	0		29	1	1	0		2	-
<b>Heavy %</b>	4.7%	0%	0%		4.7%	3%	14.8%	0%		10.5%	6.7%	0.5%	0%		0.9%	-
<b>Lights</b>	625	10	0		635	98	150	0		248	14	201	0		215	-
<b>Lights %</b>	95.3%	100%	0%		95.3%	97%	85.2%	0%		89.5%	93.3%	99.5%	0%		99.1%	-
<b>Single-Unit Trucks</b>	12	0	0		12	0	8	0		8	0	0	0		0	-
<b>Single-Unit Trucks %</b>	1.8%	0%	0%		1.8%	0%	4.5%	0%		2.9%	0%	0%	0%		0%	-
<b>Buses</b>	1	0	0		1	3	5	0		8	1	1	0		2	-
<b>Buses %</b>	0.2%	0%	0%		0.2%	3%	2.8%	0%		2.9%	6.7%	0.5%	0%		0.9%	-
<b>Articulated Trucks</b>	18	0	0		18	0	13	0		13	0	0	0		0	-
<b>Articulated Trucks %</b>	2.7%	0%	0%		2.7%	0%	7.4%	0%		4.7%	0%	0%	0%		0%	-
<b>Bicycles on Road</b>	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
<b>Bicycles on Road%</b>	-	-	-	%		-	-	-	%		-	-	-	%		-



**Peak Hour: 01:00 PM - 02:00 PM Weather: Light Rain (9.06 °C)**

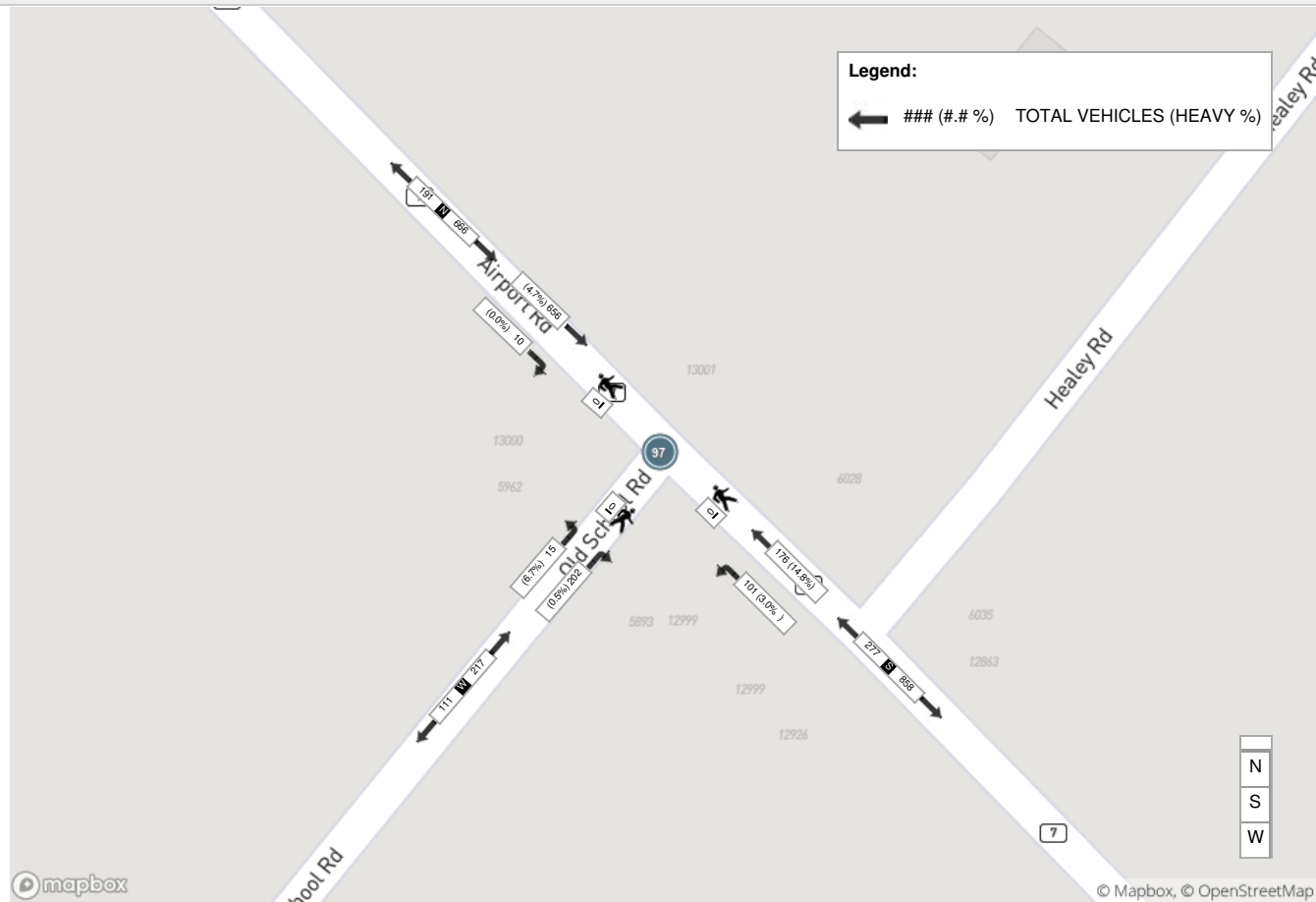
Start Time	N Approach AIRPORT RD					S Approach AIRPORT RD					W Approach OLD SCHOOL RD					Int. Total (15 min)
	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	
13:00:00	52	0	0	0	52	12	55	0	0	67	4	12	0	0	16	135
13:15:00	52	1	0	0	53	14	53	0	0	67	4	15	0	0	19	139
13:30:00	52	1	0	0	53	12	59	0	0	71	1	15	0	0	16	140
13:45:00	52	3	0	0	55	13	68	0	0	81	2	14	0	0	16	152
<b>Grand Total</b>	<b>208</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>213</b>	<b>51</b>	<b>235</b>	<b>0</b>	<b>0</b>	<b>286</b>	<b>11</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>566</b>
<b>Approach%</b>	97.7%	2.3%	0%		-	17.8%	82.2%	0%		-	16.4%	83.6%	0%		-	-
<b>Totals %</b>	36.7%	0.9%	0%		37.6%	9%	41.5%	0%		50.5%	1.9%	9.9%	0%		11.8%	-
<b>PHF</b>	1	0.42	0		0.97	0.91	0.86	0		0.88	0.69	0.93	0		0.88	-
<b>Heavy</b>	33	1	0		34	0	32	0		32	2	2	0		4	-
<b>Heavy %</b>	15.9%	20%	0%		16%	0%	13.6%	0%		11.2%	18.2%	3.6%	0%		6%	-
<b>Lights</b>	175	4	0		179	51	203	0		254	9	54	0		63	-
<b>Lights %</b>	84.1%	80%	0%		84%	100%	86.4%	0%		88.8%	81.8%	96.4%	0%		94%	-
<b>Single-Unit Trucks</b>	18	1	0		19	0	16	0		16	2	2	0		4	-
<b>Single-Unit Trucks %</b>	8.7%	20%	0%		8.9%	0%	6.8%	0%		5.6%	18.2%	3.6%	0%		6%	-
<b>Buses</b>	3	0	0		3	0	8	0		8	0	0	0		0	-
<b>Buses %</b>	1.4%	0%	0%		1.4%	0%	3.4%	0%		2.8%	0%	0%	0%		0%	-
<b>Articulated Trucks</b>	12	0	0		12	0	8	0		8	0	0	0		0	-
<b>Articulated Trucks %</b>	5.8%	0%	0%		5.6%	0%	3.4%	0%		2.8%	0%	0%	0%		0%	-
<b>Bicycles on Road</b>	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
<b>Bicycles on Road%</b>	-	-	-	%		-	-	-	%		-	-	-	%		-



**Peak Hour: 04:30 PM - 05:30 PM Weather: Light Rain (10.54 °C)**

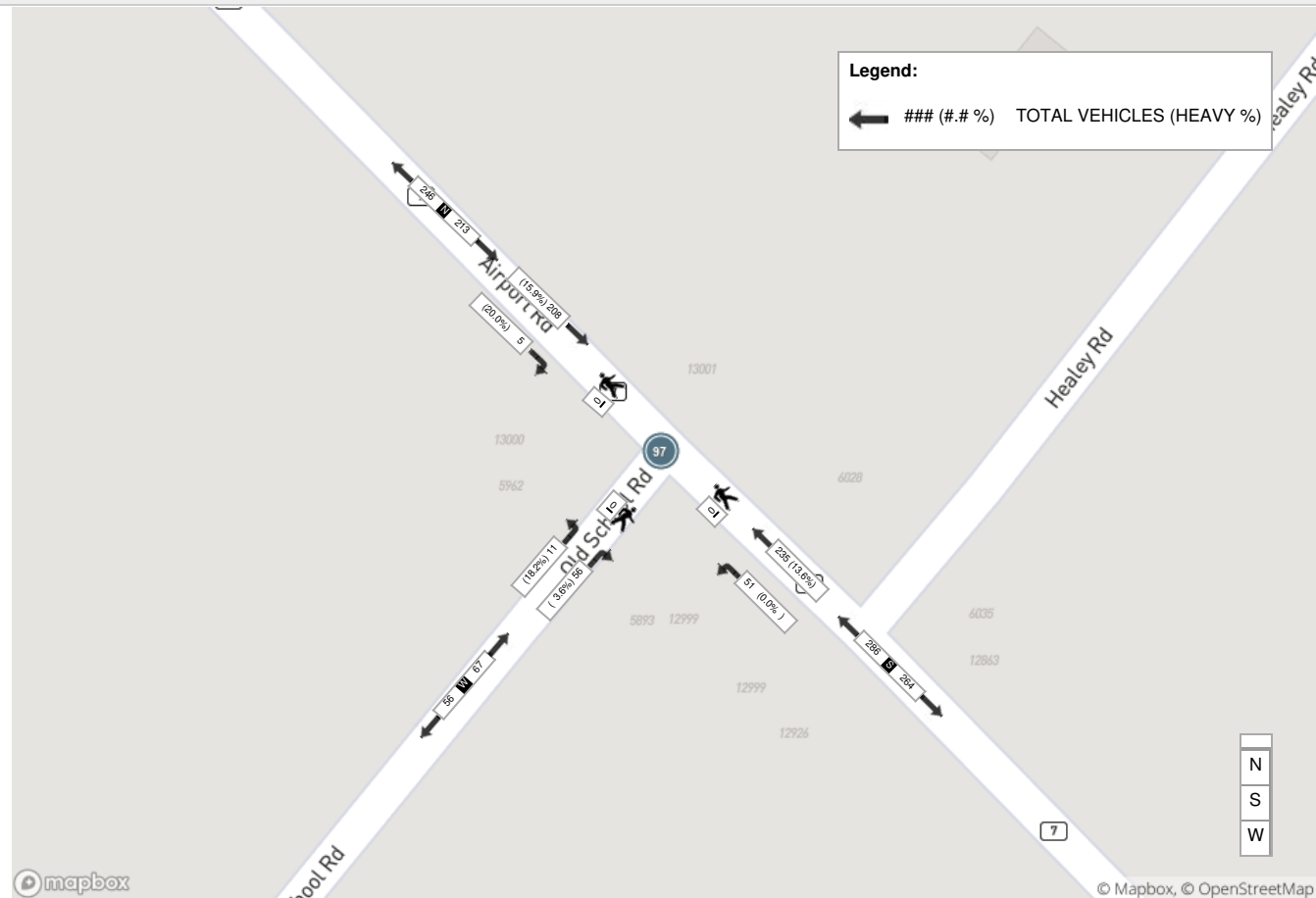
Start Time	N Approach AIRPORT RD					S Approach AIRPORT RD					W Approach OLD SCHOOL RD					Int. Total (15 min)
	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	
16:30:00	56	4	0	0	60	58	169	0	0	227	8	33	0	0	41	328
16:45:00	49	5	0	0	54	83	147	0	0	230	12	35	0	0	47	331
17:00:00	63	3	0	0	66	57	161	0	0	218	7	18	0	0	25	309
17:15:00	54	5	0	0	59	88	148	0	0	236	5	24	0	0	29	324
<b>Grand Total</b>	<b>222</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>239</b>	<b>286</b>	<b>625</b>	<b>0</b>	<b>0</b>	<b>911</b>	<b>32</b>	<b>110</b>	<b>0</b>	<b>0</b>	<b>142</b>	<b>1292</b>
<b>Approach%</b>	92.9%	7.1%	0%		-	31.4%	68.6%	0%		-	22.5%	77.5%	0%		-	-
<b>Totals %</b>	17.2%	1.3%	0%		18.5%	22.1%	48.4%	0%		70.5%	2.5%	8.5%	0%		11%	-
<b>PHF</b>	0.88	0.85	0		0.91	0.81	0.92	0		0.97	0.67	0.79	0		0.76	-
<b>Heavy</b>	41	0	0		41	1	39	0		40	2	2	0		4	-
<b>Heavy %</b>	18.5%	0%	0%		17.2%	0.3%	6.2%	0%		4.4%	6.3%	1.8%	0%		2.8%	-
<b>Lights</b>	181	17	0		198	285	586	0		871	30	108	0		138	-
<b>Lights %</b>	81.5%	100%	0%		82.8%	99.7%	93.8%	0%		95.6%	93.8%	98.2%	0%		97.2%	-
<b>Single-Unit Trucks</b>	13	0	0		13	1	18	0		19	1	0	0		1	-
<b>Single-Unit Trucks %</b>	5.9%	0%	0%		5.4%	0.3%	2.9%	0%		2.1%	3.1%	0%	0%		0.7%	-
<b>Buses</b>	9	0	0		9	0	1	0		1	1	2	0		3	-
<b>Buses %</b>	4.1%	0%	0%		3.8%	0%	0.2%	0%		0.1%	3.1%	1.8%	0%		2.1%	-
<b>Articulated Trucks</b>	19	0	0		19	0	20	0		20	0	0	0		0	-
<b>Articulated Trucks %</b>	8.6%	0%	0%		7.9%	0%	3.2%	0%		2.2%	0%	0%	0%		0%	-
<b>Bicycles on Road</b>	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
<b>Bicycles on Road%</b>	-	-	-	%		-	-	-	%		-	-	-	%		-

**Peak Hour: 07:15 AM - 08:15 AM    Weather: Moderate Rain (9.08 °C)**

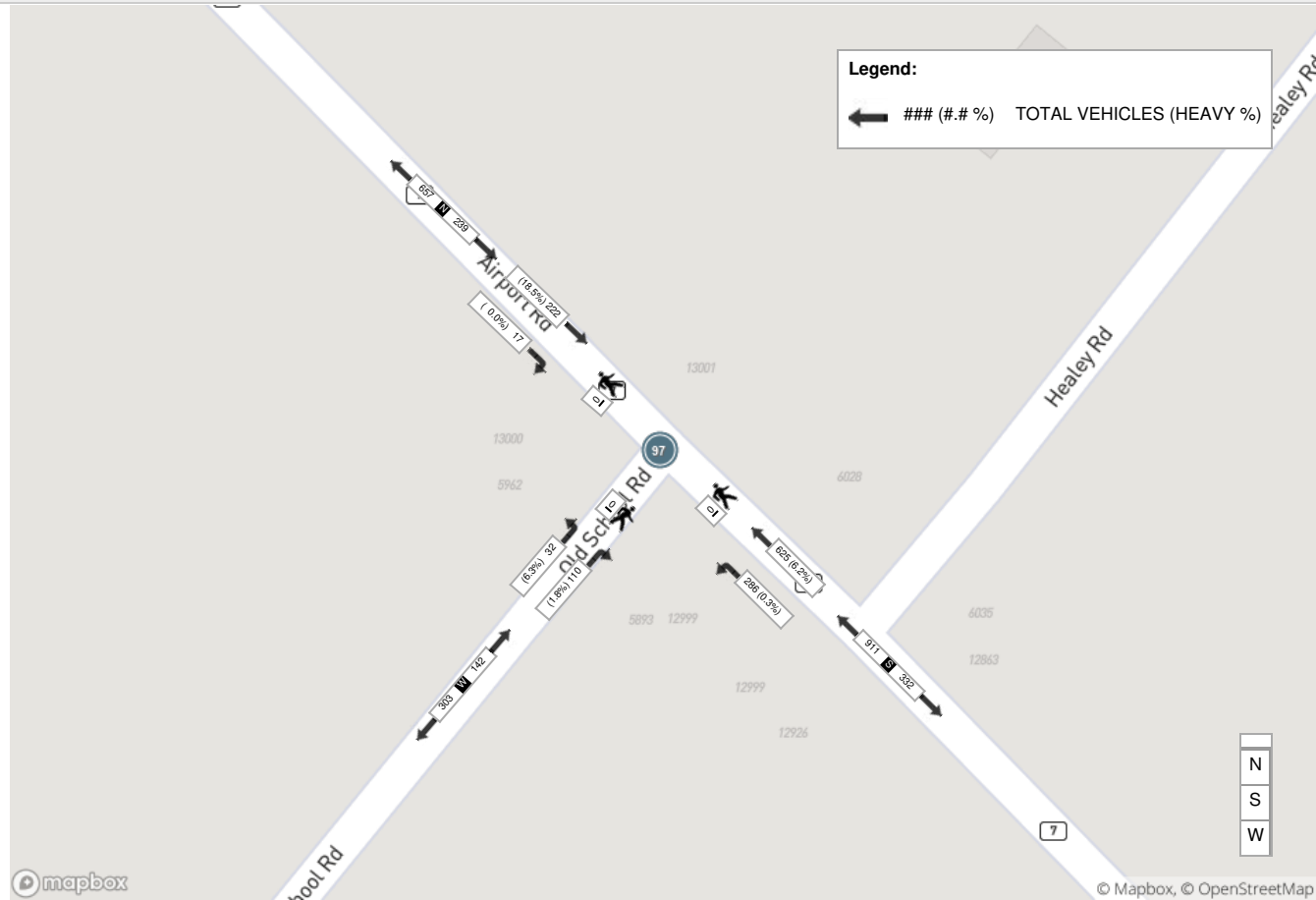




**Peak Hour: 01:00 PM - 02:00 PM    Weather: Light Rain (9.06 °C)**



**Peak Hour: 04:30 PM - 05:30 PM    Weather: Light Rain (10.54 °C)**





Turning Movement Count (47 . AIRPORT RD & PERDUE CRT / DAVIS LN) CustID: 00717933 MioID:

Start Time	N Approach AIRPORT RD						E Approach PERDUE CT						S Approach AIRPORT RD						W Approach PERDUE CT						Int. Total (15 min)	Int. Total (1 hr)
	Left N:E	Thru N:S	Right N:W	UTurn N:N	Peds N:	Approach Total	Left E:S	Thru E:W	Right E:N	UTurn E:E	Peds E:	Approach Total	Left S:W	Thru S:N	Right S:E	UTurn S:S	Peds S:	Approach Total	Left W:N	Thru W:E	Right W:S	UTurn W:W	Peds W:	Approach Total		
06:00:00	0	111	0	0	0	111	9	0	2	0	2	11	12	32	8	0	0	52	0	0	7	0	0	7	181	
06:15:00	0	121	2	1	0	124	7	0	4	0	2	11	7	47	20	0	0	74	0	0	15	0	0	15	224	
06:30:00	2	163	0	0	0	165	15	0	5	0	1	20	7	66	20	0	0	93	2	0	10	0	0	12	290	
06:45:00	3	178	0	0	0	181	10	0	4	0	3	14	15	98	31	0	0	144	0	0	6	2	0	8	347	1042
***BREAK***																										
07:00:00	1	188	1	0	0	190	23	0	8	0	0	31	4	55	15	0	0	74	2	0	10	0	0	12	307	
07:15:00	0	184	1	0	0	185	21	0	1	0	0	22	9	58	12	0	0	79	2	0	4	0	1	6	292	
07:30:00	0	187	1	0	0	188	9	0	0	0	3	9	13	74	8	0	0	95	1	0	10	0	0	11	303	
07:45:00	1	170	3	0	0	174	9	0	3	0	2	12	15	63	9	0	0	87	3	0	6	0	0	9	282	1184
08:00:00	1	161	2	0	0	164	9	0	2	0	0	11	30	58	5	0	0	93	1	0	15	0	0	16	284	1161
08:15:00	6	139	2	0	0	147	3	0	0	0	0	3	20	65	15	0	0	100	0	0	10	0	0	10	260	1129
08:30:00	0	151	1	0	0	152	8	0	2	0	2	10	20	59	20	0	0	99	3	0	6	0	1	9	270	1096
08:45:00	3	138	4	0	0	145	11	0	2	0	0	13	13	59	21	0	0	93	0	0	7	0	1	7	258	1072
***BREAK***																										
11:00:00	1	81	0	0	0	82	5	0	3	0	0	8	12	43	2	0	0	57	0	0	11	0	0	11	158	
11:15:00	1	70	6	0	0	77	6	0	2	0	0	8	4	52	3	0	0	59	0	0	15	0	0	15	159	
11:30:00	0	64	1	0	0	65	3	0	1	0	2	4	9	52	2	0	0	63	1	0	10	0	0	11	143	
11:45:00	10	70	0	0	0	80	5	0	2	0	0	7	20	63	5	0	0	88	0	0	7	1	0	8	183	643
12:00:00	7	75	0	0	0	82	13	0	0	0	1	13	10	57	8	0	0	75	1	0	13	1	0	15	185	670
12:15:00	1	57	0	0	0	58	3	0	2	0	1	5	12	74	6	0	0	92	1	0	12	0	0	13	168	679
12:30:00	1	58	1	0	0	60	7	0	3	0	0	10	10	60	8	0	0	78	2	1	14	0	1	17	165	701
12:45:00	3	75	1	0	0	79	8	0	3	0	0	11	15	67	9	0	0	91	1	0	10	0	0	11	192	710
13:00:00	2	63	1	0	0	66	10	0	0	0	0	10	23	71	6	0	0	100	1	0	10	0	0	11	187	712
13:15:00	0	72	1	0	0	73	12	0	2	1	0	15	13	54	18	0	0	85	4	0	13	0	0	17	190	734
13:30:00	1	67	1	0	0	69	18	0	9	0	0	27	13	63	26	0	0	102	0	0	20	0	0	20	218	787
13:45:00	0	64	0	0	0	64	29	0	2	0	0	31	10	66	23	0	0	99	1	0	9	0	0	10	204	799
***BREAK***																										
14:00:00	0	53	0	0	0	53	32	0	3	0	1	35	16	72	19	0	0	107	0	0	10	0	0	10	205	
***BREAK***																										
15:00:00	1	121	1	0	0	123	9	0	0	0	5	9	5	116	7	0	0	128	0	0	7	0	0	7	267	
15:15:00	0	75	0	1	0	76	7	0	0	0	1	7	8	110	3	0	0	121	1	0	13	0	0	14	218	
15:30:00	2	85	2	0	0	89	9	0	0	0	4	9	12	135	6	0	0	153	1	0	7	0	1	8	259	
15:45:00	3	78	2	0	0	83	10	0	5	0	1	15	7	140	14	0	0	161	0	0	9	0	0	9	268	1012
16:00:00	5	76	1	1	0	83	16	0	1	0	0	17	17	157	26	0	0	200	2	0	14	0	0	16	316	1061
16:15:00	1	71	1	1	0	74	25	0	3	0	0	28	8	199	30	0	0	237	3	0	14	0	0	17	356	1199
16:30:00	7	96	2	1	0	106	30	0	2	0	2	32	12	194	14	0	0	220	0	0	18	0	0	18	376	1316
16:45:00	5	80	1	3	0	89	20	0	0	0	0	20	17	177	7	0	0	201	1	0	8	0	1	9	319	1367
17:00:00	0	91	5	7	0	103	9	0	2	0	1	11	10	182	13	0	0	205	7	0	22	0	1	29	348	1399
17:15:00	1	83	0	0	0	84	10	0	3	0	0	13	17	169	9	0	0	195	2	0	12	0	0	14	306	1349
17:30:00	0	71	3	1	0	75	13	0	1	0	0	14	11	122	8	0	0	141	2	0	17	0	0	19	249	1222
17:45:00	0	85	2	0	0	87	8	0	2	0	0	10	13	129	6	0	0	148	0	0	12	0	0	12	257	1160
Grand Total	69	3772	49	16	0	3906	451	0	84	1	34	536	469	3358	462	0	0	4289	45	1	413	4	7	463	9194	-
Approach%	1.8%	96.6%	1.3%	0.4%		-	84.1%	0%	15.7%	0.2%		-	10.9%	78.3%	10.8%	0%		-	9.7%	0.2%	89.2%	0.9%		-	-	-
Totals %	0.8%	41%	0.5%	0.2%		42.5%	4.9%	0%	0.9%	0%		5.8%	5.1%	36.5%	5%	0%		46.6%	0.5%	0%	4.5%	0%		5%	-	-



Turning Movement Count  
Location Name: AIRPORT RD & PERDUE CRT / DAVIS LN  
Date: Wed, Sep 25, 2019 Deployment Lead: Patrick Filopoulos

Heavy	53	535	21	0	-	224	0	54	1	-	259	479	206	0	-	28	1	202	4	-	-	-
Heavy %	76.8%	14.2%	42.9%	0%	-	49.7%	0%	64.3%	100%	-	55.2%	14.3%	44.6%	0%	-	62.2%	100%	48.9%	100%	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 06:00 AM - 07:00 AM Weather:

Start Time	N Approach AIRPORT RD						E Approach PERDUE CT						S Approach AIRPORT RD						W Approach PERDUE CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
06:00:00	0	111	0	0	0	111	9	0	2	0	2	11	12	32	8	0	0	52	0	0	7	0	0	7	181
06:15:00	0	121	2	1	0	124	7	0	4	0	2	11	7	47	20	0	0	74	0	0	15	0	0	15	224
06:30:00	2	163	0	0	0	165	15	0	5	0	1	20	7	66	20	0	0	93	2	0	10	0	0	12	290
06:45:00	3	178	0	0	0	181	10	0	4	0	3	14	15	98	31	0	0	144	0	0	6	2	0	8	347
Grand Total	5	573	2	1	0	581	41	0	15	0	8	56	41	243	79	0	0	363	2	0	38	2	0	42	1042
Approach%	0.9%	98.6%	0.3%	0.2%		-	73.2%	0%	26.8%	0%		-	11.3%	66.9%	21.8%	0%		-	4.8%	0%	90.5%	4.8%		-	-
Totals %	0.5%	55%	0.2%	0.1%		55.8%	3.9%	0%	1.4%	0%		5.4%	3.9%	23.3%	7.6%	0%		34.8%	0.2%	0%	3.6%	0.2%		4%	-
PHF	0.42	0.8	0.25	0.25		0.8	0.68	0	0.75	0		0.7	0.68	0.62	0.64	0		0.63	0.25	0	0.63	0.25		0.7	-
Heavy	1	62	0	0		63	36	0	14	0		50	13	24	5	0		42	2	0	32	2		36	-
Heavy %	20%	10.8%	0%	0%		10.8%	87.8%	0%	93.3%	0%		89.3%	31.7%	9.9%	6.3%	0%		11.6%	100%	0%	84.2%	100%		85.7%	-
Lights	4	511	2	1		518	5	0	1	0		6	28	219	74	0		321	0	0	6	0		6	-
Lights %	80%	89.2%	100%	100%		89.2%	12.2%	0%	6.7%	0%		10.7%	68.3%	90.1%	93.7%	0%		88.4%	0%	0%	15.8%	0%		14.3%	-
Single-Unit Trucks	0	29	0	0		29	1	0	0	0		1	11	9	1	0		21	0	0	24	2		26	-
Single-Unit Trucks %	0%	5.1%	0%	0%		5%	2.4%	0%	0%	0%		1.8%	26.8%	3.7%	1.3%	0%		5.8%	0%	0%	63.2%	100%		61.9%	-
Buses	1	0	0	0		1	27	0	14	0		41	0	2	2	0		4	0	0	0	0		0	-
Buses %	20%	0%	0%	0%		0.2%	65.9%	0%	93.3%	0%		73.2%	0%	0.8%	2.5%	0%		1.1%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	33	0	0		33	8	0	0	0		8	2	13	2	0		17	2	0	8	0		10	-
Articulated Trucks %	0%	5.8%	0%	0%		5.7%	19.5%	0%	0%	0%		14.3%	4.9%	5.3%	2.5%	0%		4.7%	100%	0%	21.1%	0%		23.8%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	100%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-





Turning Movement Count  
Location Name: AIRPORT RD & PERDUE CRT / DAVIS LN  
Date: Wed, Sep 25, 2019 Deployment Lead: Patrick Filopoulos

Peak Hour: 07:00 AM - 08:00 AM Weather:

Start Time	N Approach AIRPORT RD						E Approach PERDUE CT						S Approach AIRPORT RD						W Approach PERDUE CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	1	188	1	0	0	190	23	0	8	0	0	31	4	55	15	0	0	74	2	0	10	0	0	12	307
07:15:00	0	184	1	0	0	185	21	0	1	0	0	22	9	58	12	0	0	79	2	0	4	0	1	6	292
07:30:00	0	187	1	0	0	188	9	0	0	0	3	9	13	74	8	0	0	95	1	0	10	0	0	11	303
07:45:00	1	170	3	0	0	174	9	0	3	0	2	12	15	63	9	0	0	87	3	0	6	0	0	9	282
Grand Total	2	729	6	0	0	737	62	0	12	0	5	74	41	250	44	0	0	335	8	0	30	0	1	38	1184
Approach%	0.3%	98.9%	0.8%	0%		-	83.8%	0%	16.2%	0%		-	12.2%	74.6%	13.1%	0%		-	21.1%	0%	78.9%	0%		-	-
Totals %	0.2%	61.6%	0.5%	0%		62.2%	5.2%	0%	1%	0%		6.3%	3.5%	21.1%	3.7%	0%		28.3%	0.7%	0%	2.5%	0%		3.2%	-
PHF	0.5	0.97	0.5	0		0.97	0.67	0	0.38	0		0.6	0.68	0.84	0.73	0		0.88	0.67	0	0.75	0		0.79	-
Heavy	0	58	1	0		59	58	0	10	0		68	18	41	6	0		65	8	0	27	0		35	-
Heavy %	0%	8%	16.7%	0%		8%	93.5%	0%	83.3%	0%		91.9%	43.9%	16.4%	13.6%	0%		19.4%	100%	0%	90%	0%		92.1%	-
Lights	2	671	5	0		678	4	0	2	0		6	23	209	38	0		270	0	0	3	0		3	-
Lights %	100%	92%	83.3%	0%		92%	6.5%	0%	16.7%	0%		8.1%	56.1%	83.6%	86.4%	0%		80.6%	0%	0%	10%	0%		7.9%	-
Single-Unit Trucks	0	24	1	0		25	1	0	0	0		1	13	21	0	0		34	3	0	15	0		18	-
Single-Unit Trucks %	0%	3.3%	16.7%	0%		3.4%	1.6%	0%	0%	0%		1.4%	31.7%	8.4%	0%	0%		10.1%	37.5%	0%	50%	0%		47.4%	-
Buses	0	3	0	0		3	51	0	9	0		60	0	5	3	0		8	0	0	0	0		0	-
Buses %	0%	0.4%	0%	0%		0.4%	82.3%	0%	75%	0%		81.1%	0%	2%	6.8%	0%		2.4%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	31	0	0		31	6	0	1	0		7	5	15	3	0		23	5	0	12	0		17	-
Articulated Trucks %	0%	4.3%	0%	0%		4.2%	9.7%	0%	8.3%	0%		9.5%	12.2%	6%	6.8%	0%		6.9%	62.5%	0%	40%	0%		44.7%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	83.3%	-	-	-	-	-	0%	-	-	-	-	-	16.7%	-	-



Peak Hour: 01:00 PM - 02:00 PM Weather: Broken Clouds (23.38 °C)

Start Time	N Approach AIRPORT RD						E Approach PERDUE CT						S Approach AIRPORT RD						W Approach PERDUE CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
13:00:00	2	63	1	0	0	66	10	0	0	0	0	10	23	71	6	0	0	100	1	0	10	0	0	11	187
13:15:00	0	72	1	0	0	73	12	0	2	1	0	15	13	54	18	0	0	85	4	0	13	0	0	17	190
13:30:00	1	67	1	0	0	69	18	0	9	0	0	27	13	63	26	0	0	102	0	0	20	0	0	20	218
13:45:00	0	64	0	0	0	64	29	0	2	0	0	31	10	66	23	0	0	99	1	0	9	0	0	10	204
Grand Total	3	266	3	0	0	272	69	0	13	1	0	83	59	254	73	0	0	386	6	0	52	0	0	58	799
Approach%	1.1%	97.8%	1.1%	0%		-	83.1%	0%	15.7%	1.2%		-	15.3%	65.8%	18.9%	0%		-	10.3%	0%	89.7%	0%		-	-
Totals %	0.4%	33.3%	0.4%	0%		34%	8.6%	0%	1.6%	0.1%		10.4%	7.4%	31.8%	9.1%	0%		48.3%	0.8%	0%	6.5%	0%		7.3%	-
PHF	0.38	0.92	0.75	0		0.93	0.59	0	0.36	0.25		0.67	0.64	0.89	0.7	0		0.95	0.38	0	0.65	0		0.73	-
Heavy	2	65	1	0		68	54	0	12	1		67	39	65	15	0		119	5	0	36	0		41	-
Heavy %	66.7%	24.4%	33.3%	0%		25%	78.3%	0%	92.3%	100%		80.7%	66.1%	25.6%	20.5%	0%		30.8%	83.3%	0%	69.2%	0%		70.7%	-
Lights	1	201	2	0		204	15	0	1	0		16	20	189	58	0		267	1	0	16	0		17	-
Lights %	33.3%	75.6%	66.7%	0%		75%	21.7%	0%	7.7%	0%		19.3%	33.9%	74.4%	79.5%	0%		69.2%	16.7%	0%	30.8%	0%		29.3%	-
Single-Unit Trucks	0	28	0	0		28	3	0	0	0		3	24	29	1	0		54	4	0	19	0		23	-
Single-Unit Trucks %	0%	10.5%	0%	0%		10.3%	4.3%	0%	0%	0%		3.6%	40.7%	11.4%	1.4%	0%		14%	66.7%	0%	36.5%	0%		39.7%	-
Buses	2	4	0	0		6	43	0	12	1		56	0	0	7	0		7	0	0	0	0		0	-
Buses %	66.7%	1.5%	0%	0%		2.2%	62.3%	0%	92.3%	100%		67.5%	0%	0%	9.6%	0%		1.8%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	33	1	0		34	8	0	0	0		8	15	36	7	0		58	1	0	17	0		18	-
Articulated Trucks %	0%	12.4%	33.3%	0%		12.5%	11.6%	0%	0%	0%		9.6%	25.4%	14.2%	9.6%	0%		15%	16.7%	0%	32.7%	0%		31%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



Peak Hour: 06:00 AM - 07:00 AM Weather:

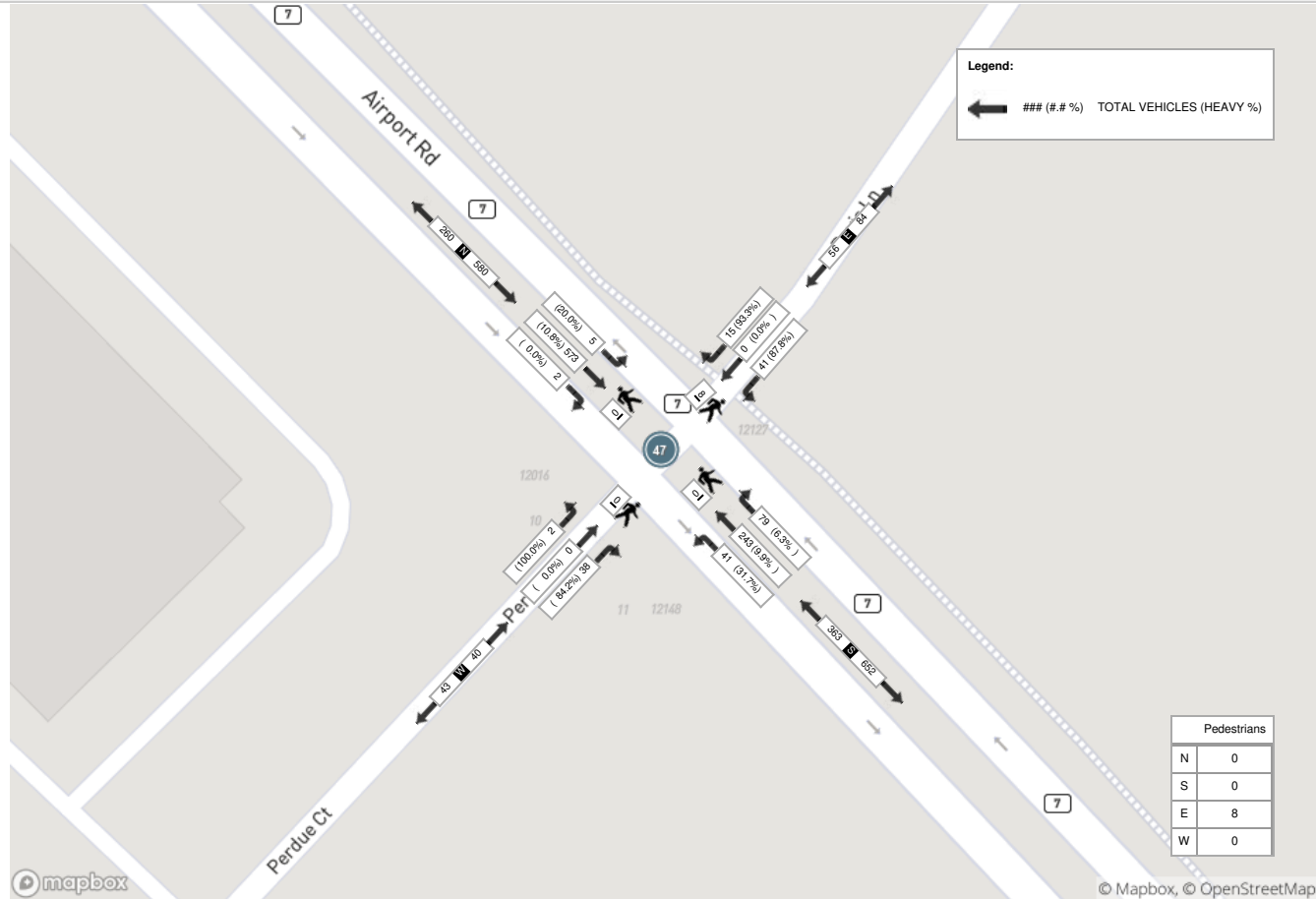
Start Time	N Approach AIRPORT RD						E Approach PERDUE CT						S Approach AIRPORT RD						W Approach PERDUE CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
06:00:00	0	111	0	0	0	111	9	0	2	0	2	11	12	32	8	0	0	52	0	0	7	0	0	7	181
06:15:00	0	121	2	1	0	124	7	0	4	0	2	11	7	47	20	0	0	74	0	0	15	0	0	15	224
06:30:00	2	163	0	0	0	165	15	0	5	0	1	20	7	66	20	0	0	93	2	0	10	0	0	12	290
06:45:00	3	178	0	0	0	181	10	0	4	0	3	14	15	98	31	0	0	144	0	0	6	2	0	8	347
Grand Total	5	573	2	1	0	581	41	0	15	0	8	56	41	243	79	0	0	363	2	0	38	2	0	42	1042
Approach%	0.9%	98.6%	0.3%	0.2%		-	73.2%	0%	26.8%	0%		-	11.3%	66.9%	21.8%	0%		-	4.8%	0%	90.5%	4.8%		-	-
Totals %	0.5%	55%	0.2%	0.1%		55.8%	3.9%	0%	1.4%	0%		5.4%	3.9%	23.3%	7.6%	0%		34.8%	0.2%	0%	3.6%	0.2%		4%	-
PHF	0.42	0.8	0.25	0.25		0.8	0.68	0	0.75	0		0.7	0.68	0.62	0.64	0		0.63	0.25	0	0.63	0.25		0.7	-
Heavy	1	62	0	0		63	36	0	14	0		50	13	24	5	0		42	2	0	32	2		36	-
Heavy %	20%	10.8%	0%	0%		10.8%	87.8%	0%	93.3%	0%		89.3%	31.7%	9.9%	6.3%	0%		11.6%	100%	0%	84.2%	100%		85.7%	-
Lights	4	511	2	1		518	5	0	1	0		6	28	219	74	0		321	0	0	6	0		6	-
Lights %	80%	89.2%	100%	100%		89.2%	12.2%	0%	6.7%	0%		10.7%	68.3%	90.1%	93.7%	0%		88.4%	0%	0%	15.8%	0%		14.3%	-
Single-Unit Trucks	0	29	0	0		29	1	0	0	0		1	11	9	1	0		21	0	0	24	2		26	-
Single-Unit Trucks %	0%	5.1%	0%	0%		5%	2.4%	0%	0%	0%		1.8%	26.8%	3.7%	1.3%	0%		5.8%	0%	0%	63.2%	100%		61.9%	-
Buses	1	0	0	0		1	27	0	14	0		41	0	2	2	0		4	0	0	0	0		0	-
Buses %	20%	0%	0%	0%		0.2%	65.9%	0%	93.3%	0%		73.2%	0%	0.8%	2.5%	0%		1.1%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	33	0	0		33	8	0	0	0		8	2	13	2	0		17	2	0	8	0		10	-
Articulated Trucks %	0%	5.8%	0%	0%		5.7%	19.5%	0%	0%	0%		14.3%	4.9%	5.3%	2.5%	0%		4.7%	100%	0%	21.1%	0%		23.8%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	100%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (25.35 °C)

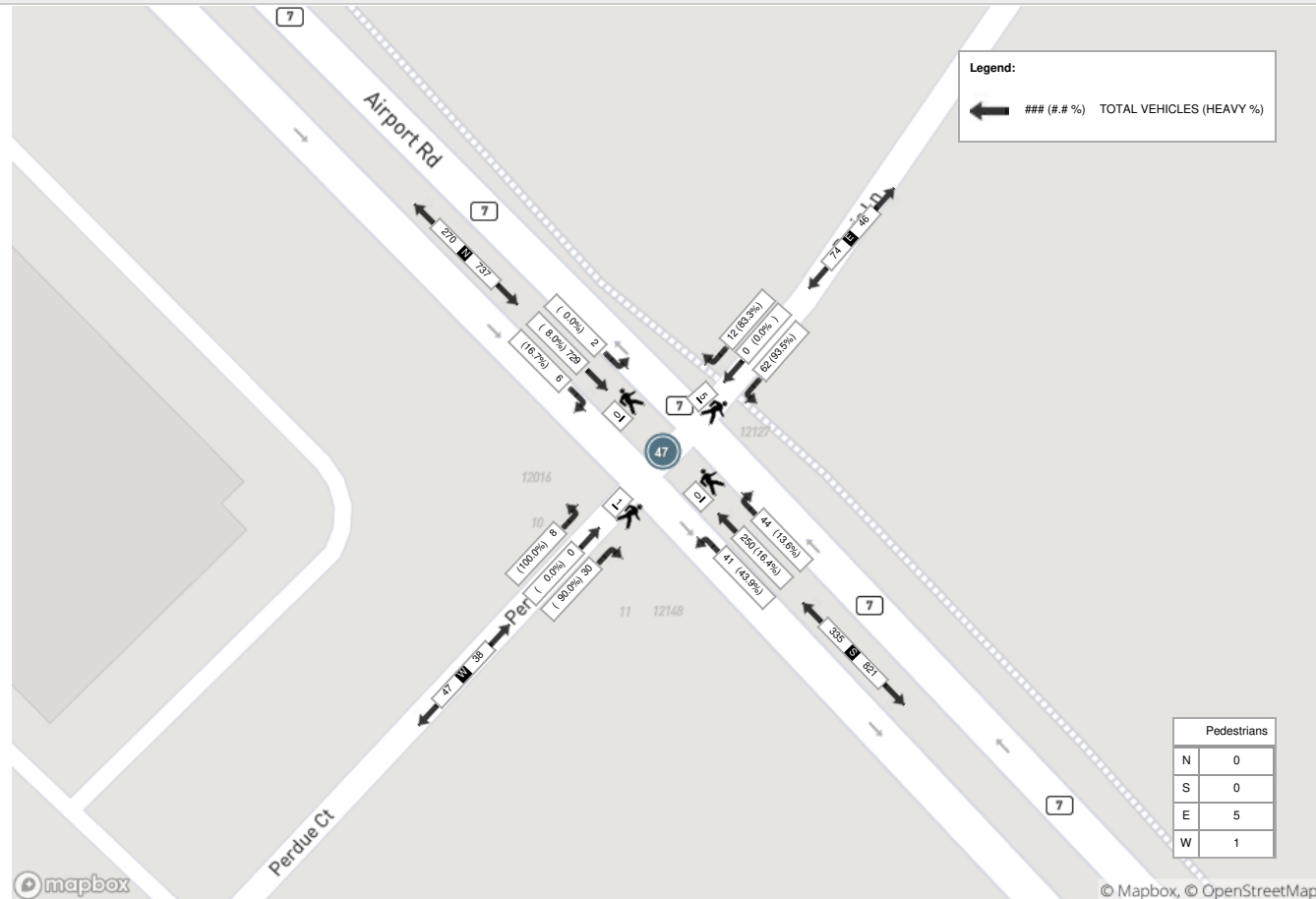
Start Time	N Approach AIRPORT RD						E Approach PERDUE CT						S Approach AIRPORT RD						W Approach PERDUE CT						Int. Total (15 min)
	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	Left	Thru	Right	UTurn	Peds	Approach Total	
16:15:00	1	71	1	1	0	74	25	0	3	0	0	28	8	199	30	0	0	237	3	0	14	0	0	17	356
16:30:00	7	96	2	1	0	106	30	0	2	0	2	32	12	194	14	0	0	220	0	0	18	0	0	18	376
16:45:00	5	80	1	3	0	89	20	0	0	0	0	20	17	177	7	0	0	201	1	0	8	0	1	9	319
17:00:00	0	91	5	7	0	103	9	0	2	0	1	11	10	182	13	0	0	205	7	0	22	0	1	29	348
Grand Total	13	338	9	12	0	372	84	0	7	0	3	91	47	752	64	0	0	863	11	0	62	0	2	73	1399
Approach%	3.5%	90.9%	2.4%	3.2%		-	92.3%	0%	7.7%	0%		-	5.4%	87.1%	7.4%	0%		-	15.1%	0%	84.9%	0%		-	-
Totals %	0.9%	24.2%	0.6%	0.9%		26.6%	6%	0%	0.5%	0%		6.5%	3.4%	53.8%	4.6%	0%		61.7%	0.8%	0%	4.4%	0%		5.2%	-
PHF	0.46	0.88	0.45	0.43		0.88	0.7	0	0.58	0		0.71	0.69	0.94	0.53	0		0.91	0.39	0	0.7	0		0.63	-
Heavy	11	54	6	0		71	6	0	0	0		6	41	69	54	0		164	2	0	8	0		10	-
Heavy %	84.6%	16%	66.7%	0%		19.1%	7.1%	0%	0%	0%		6.6%	87.2%	9.2%	84.4%	0%		19%	18.2%	0%	12.9%	0%		13.7%	-
Lights	2	284	3	12		301	78	0	7	0		85	6	683	10	0		699	9	0	54	0		63	-
Lights %	15.4%	84%	33.3%	100%		80.9%	92.9%	0%	100%	0%		93.4%	12.8%	90.8%	15.6%	0%		81%	81.8%	0%	87.1%	0%		86.3%	-
Single-Unit Trucks	0	27	1	0		28	1	0	0	0		1	11	26	2	0		39	0	0	3	0		3	-
Single-Unit Trucks %	0%	8%	11.1%	0%		7.5%	1.2%	0%	0%	0%		1.1%	23.4%	3.5%	3.1%	0%		4.5%	0%	0%	4.8%	0%		4.1%	-
Buses	11	2	0	0		13	1	0	0	0		1	0	0	44	0		44	0	0	0	0		0	-
Buses %	84.6%	0.6%	0%	0%		3.5%	1.2%	0%	0%	0%		1.1%	0%	0%	68.8%	0%		5.1%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	25	5	0		30	4	0	0	0		4	30	43	8	0		81	2	0	5	0		7	-
Articulated Trucks %	0%	7.4%	55.6%	0%		8.1%	4.8%	0%	0%	0%		4.4%	63.8%	5.7%	12.5%	0%		9.4%	18.2%	0%	8.1%	0%		9.6%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	2	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	60%	-	-	-	-	-	0%	-	-	-	-	-	40%	-	-

Peak Hour: 06:00 AM - 07:00 AM Weather:

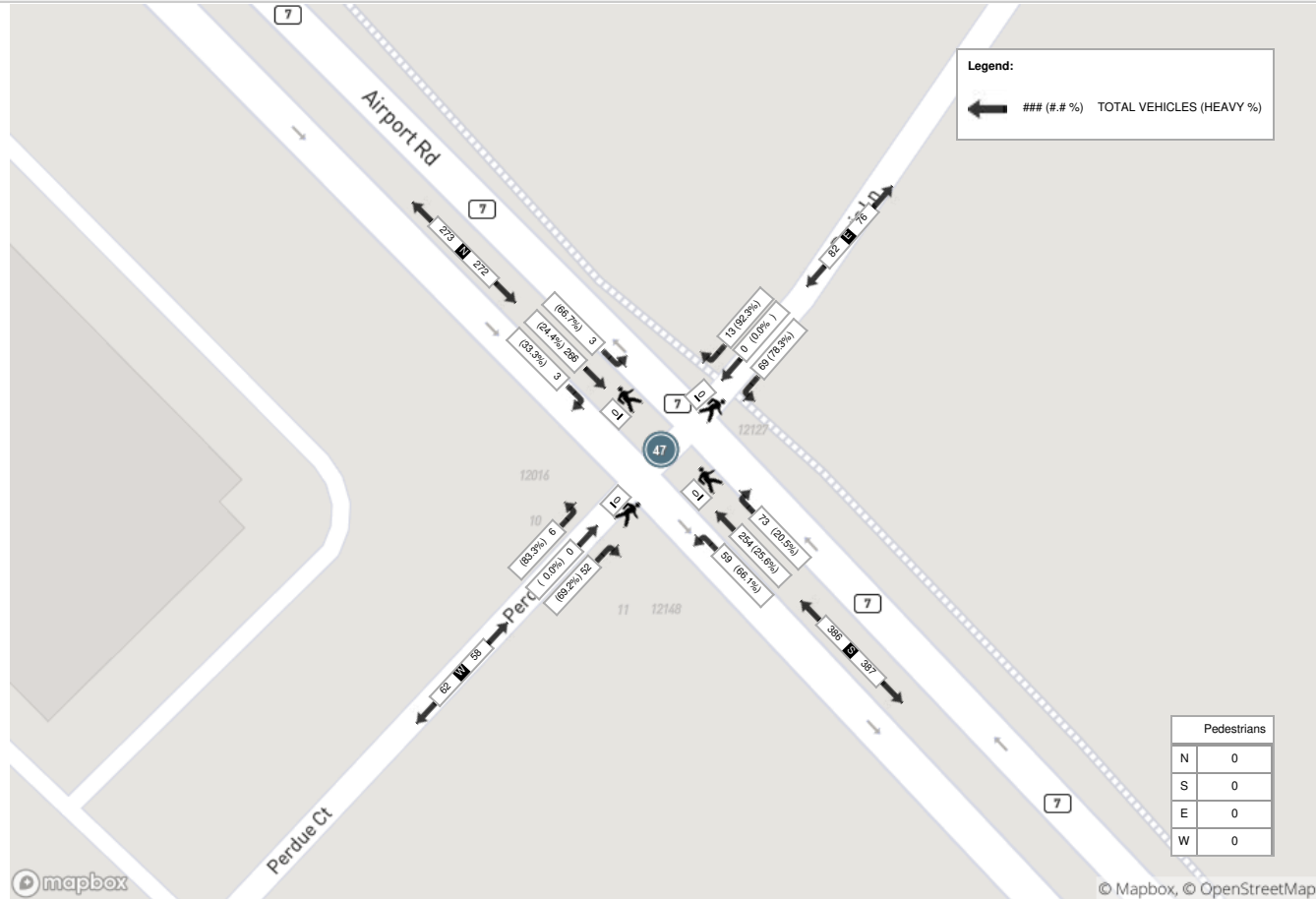




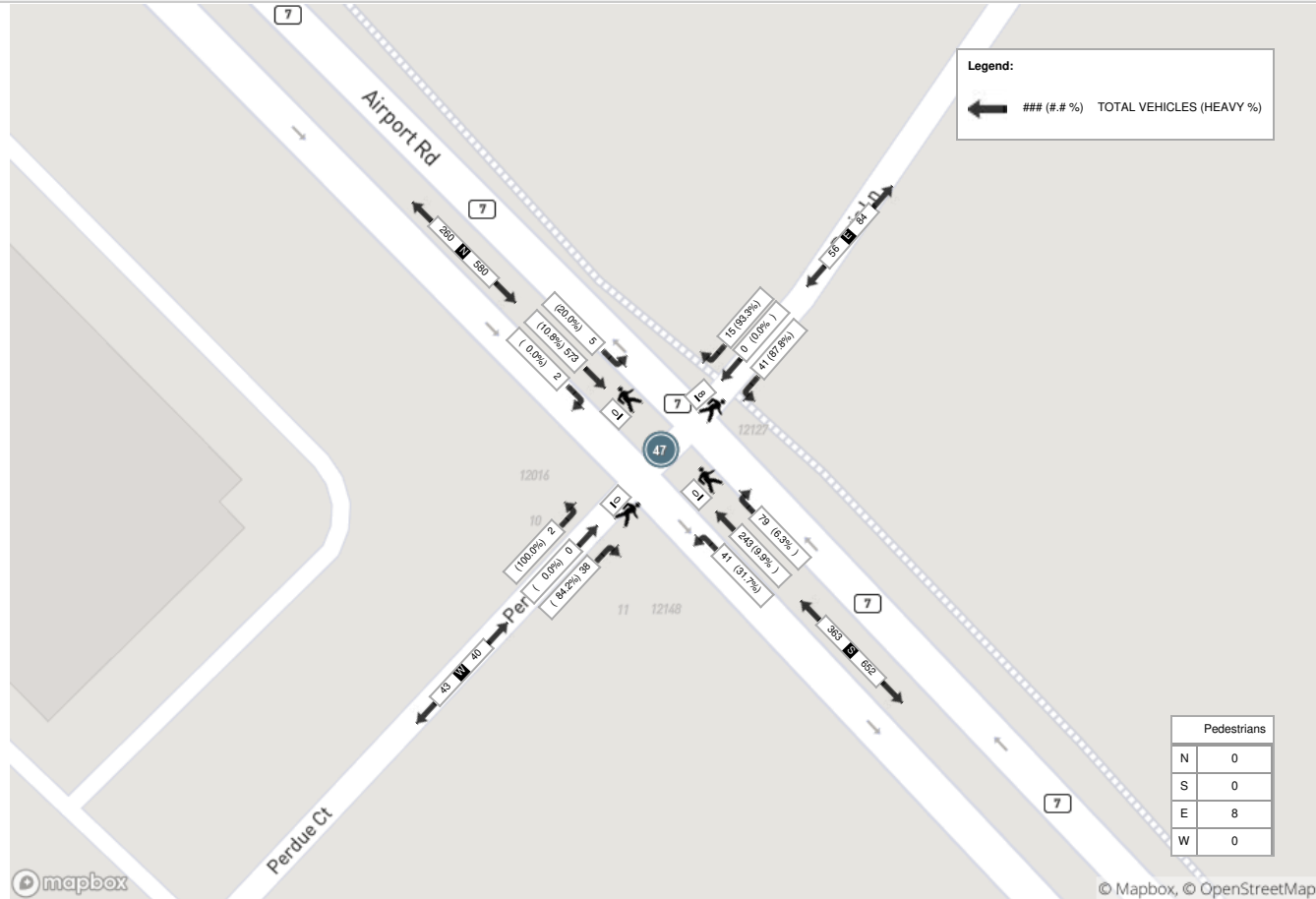
Peak Hour: 07:00 AM - 08:00 AM Weather:



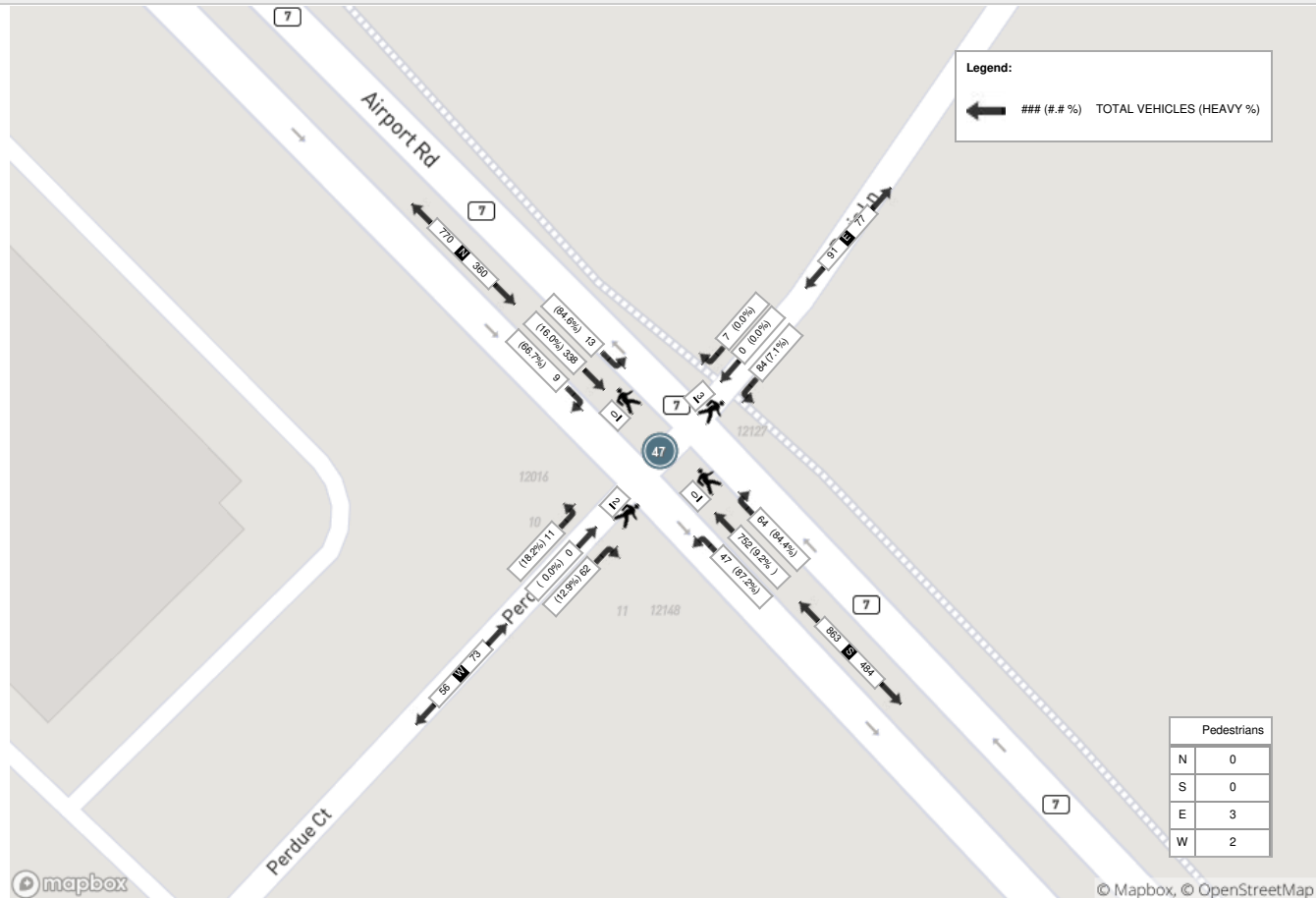
Peak Hour: 01:00 PM - 02:00 PM Weather: Broken Clouds (23.38 °C)



Peak Hour: 06:00 AM - 07:00 AM Weather:



Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (25.35 °C)





Turning Movement Count (46 . AIRPORT RD & STREET A) CustID: 00718361 MIdID:

Start Time	N Approach AIRPORT RD					E Approach STREET A					S Approach AIRPORT RD					Int. Total (15 min)	Int. Total (1 hr)
	Left N:E	Thru N:S	UTurn N:N	Peds N:	Approach Total	Left E:S	Right E:N	UTurn E:E	Peds E:	Approach Total	Thru S:N	Right S:E	UTurn S:S	Peds S:	Approach Total		
07:00:00	2	150	0	0	152	39	3	0	1	42	51	5	0	0	56	250	
07:15:00	0	177	0	0	177	6	2	0	0	8	50	4	0	0	54	239	
07:30:00	1	186	0	0	187	4	1	0	1	5	65	6	0	0	71	263	
07:45:00	1	184	0	0	185	2	2	0	1	4	62	11	0	0	73	262	1014
08:00:00	0	163	0	0	163	1	1	0	0	2	49	3	0	0	52	217	981
08:15:00	0	159	0	1	159	2	0	0	0	2	59	10	0	0	69	230	972
08:30:00	1	147	0	0	148	5	2	0	0	7	46	3	0	0	49	204	913
08:45:00	0	132	0	0	132	9	0	0	0	9	63	2	0	0	65	206	857
***BREAK***																	
11:00:00	0	72	0	0	72	9	0	0	0	9	46	4	0	0	50	131	
11:15:00	1	66	0	0	67	5	0	0	0	5	43	5	0	0	48	120	
11:30:00	2	61	0	0	63	9	1	0	1	10	50	4	0	0	54	127	
11:45:00	0	74	0	0	74	4	1	0	1	5	50	6	0	0	56	135	513
12:00:00	0	68	0	0	68	10	1	0	1	11	50	10	0	0	60	139	521
12:15:00	2	54	0	0	56	7	3	0	0	10	68	8	0	0	76	142	543
12:30:00	0	51	0	0	51	3	0	0	0	3	56	7	0	0	63	117	533
12:45:00	1	73	1	0	75	8	1	0	0	9	64	7	0	0	71	155	553
13:00:00	0	60	0	0	60	6	4	0	0	10	60	10	0	0	70	140	554
13:15:00	0	63	0	0	63	7	0	0	0	7	51	11	0	0	62	132	544
13:30:00	0	60	0	0	60	6	1	0	0	7	70	2	0	0	72	139	566
13:45:00	1	51	0	0	52	7	1	0	0	8	62	6	1	0	69	129	540
***BREAK***																	
15:00:00	2	62	0	0	64	60	10	0	0	70	112	6	0	0	118	252	
15:15:00	1	52	0	0	53	15	3	0	0	18	118	5	0	0	123	194	
15:30:00	0	61	0	0	61	18	3	0	0	21	122	7	0	0	129	211	
15:45:00	1	69	0	0	70	10	0	0	1	10	120	7	0	0	127	207	864
16:00:00	1	66	0	0	67	14	5	0	0	19	170	13	0	0	183	269	881
16:15:00	0	72	0	0	72	6	2	0	0	8	185	6	0	0	191	271	958
16:30:00	1	78	0	0	79	16	1	0	0	17	167	13	0	0	180	276	1023
16:45:00	3	67	1	0	71	10	3	0	0	13	183	6	0	0	189	273	1089
17:00:00	1	66	0	0	67	21	3	0	0	24	178	6	0	0	184	275	1095
17:15:00	2	77	0	0	79	4	1	0	0	5	155	9	0	0	164	248	1072
17:30:00	0	67	0	0	67	9	0	0	0	9	140	2	0	0	142	218	1014
17:45:00	0	74	0	0	74	9	2	0	0	11	125	5	0	0	130	215	956





Grand Total	24	2862	2	1	2888	341	57	0	7	398	2890	209	1	0	3100	6386	-
Approach%	0.8%	99.1%	0.1%		-	85.7%	14.3%	0%		-	93.2%	6.7%	0%		-	-	-
Totals %	0.4%	44.8%	0%		45.2%	5.3%	0.9%	0%		6.2%	45.3%	3.3%	0%		48.5%	-	-
Heavy	11	386	0		-	139	15	0		-	373	133	0		-	-	-
Heavy %	45.8%	13.5%	0%		-	40.8%	26.3%	0%		-	12.9%	63.6%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-

**Peak Hour: 07:00 AM - 08:00 AM Weather: Mist (13.18 °C)**

Start Time	N Approach AIRPORT RD					E Approach STREET A					S Approach AIRPORT RD					Int. Total (15 min)
	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	Thru	Right	UTurn	Peds	Approach Total	
07:00:00	2	150	0	0	152	39	3	0	1	42	51	5	0	0	56	250
07:15:00	0	177	0	0	177	6	2	0	0	8	50	4	0	0	54	239
07:30:00	1	186	0	0	187	4	1	0	1	5	65	6	0	0	71	263
07:45:00	1	184	0	0	185	2	2	0	1	4	62	11	0	0	73	262
<b>Grand Total</b>	<b>4</b>	<b>697</b>	<b>0</b>	<b>0</b>	<b>701</b>	<b>51</b>	<b>8</b>	<b>0</b>	<b>3</b>	<b>59</b>	<b>228</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>1014</b>
<b>Approach%</b>	0.6%	99.4%	0%		-	86.4%	13.6%	0%		-	89.8%	10.2%	0%		-	-
<b>Totals %</b>	0.4%	68.7%	0%		69.1%	5%	0.8%	0%		5.8%	22.5%	2.6%	0%		25%	-
<b>PHF</b>	0.5	0.94	0		0.94	0.33	0.67	0		0.35	0.88	0.59	0		0.87	-
<b>Heavy</b>	0	49	0		49	8	0	0		8	44	10	0		54	-
<b>Heavy %</b>	0%	7%	0%		7%	15.7%	0%	0%		13.6%	19.3%	38.5%	0%		21.3%	-
<b>Lights</b>	4	648	0		652	43	8	0		51	184	16	0		200	-
<b>Lights %</b>	100%	93%	0%		93%	84.3%	100%	0%		86.4%	80.7%	61.5%	0%		78.7%	-
<b>Single-Unit Trucks</b>	0	27	0		27	1	0	0		1	12	5	0		17	-
<b>Single-Unit Trucks %</b>	0%	3.9%	0%		3.9%	2%	0%	0%		1.7%	5.3%	19.2%	0%		6.7%	-
<b>Buses</b>	0	2	0		2	0	0	0		0	14	0	0		14	-
<b>Buses %</b>	0%	0.3%	0%		0.3%	0%	0%	0%		0%	6.1%	0%	0%		5.5%	-
<b>Articulated Trucks</b>	0	20	0		20	7	0	0		7	18	5	0		23	-
<b>Articulated Trucks %</b>	0%	2.9%	0%		2.9%	13.7%	0%	0%		11.9%	7.9%	19.2%	0%		9.1%	-
<b>Pedestrians</b>	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-
<b>Pedestrians%</b>	-	-	-	0%	-	-	-	-	100%	-	-	-	-	0%	-	-



**Peak Hour: 12:45 PM - 01:45 PM Weather: Broken Clouds (23.38 °C)**

Start Time	N Approach AIRPORT RD					E Approach STREET A					S Approach AIRPORT RD					Int. Total (15 min)
	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	Thru	Right	UTurn	Peds	Approach Total	
12:45:00	1	73	1	0	75	8	1	0	0	9	64	7	0	0	71	155
13:00:00	0	60	0	0	60	6	4	0	0	10	60	10	0	0	70	140
13:15:00	0	63	0	0	63	7	0	0	0	7	51	11	0	0	62	132
13:30:00	0	60	0	0	60	6	1	0	0	7	70	2	0	0	72	139
<b>Grand Total</b>	<b>1</b>	<b>256</b>	<b>1</b>	<b>0</b>	<b>258</b>	<b>27</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>245</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>275</b>	<b>566</b>
<b>Approach%</b>	0.4%	99.2%	0.4%		-	81.8%	18.2%	0%		-	89.1%	10.9%	0%		-	-
<b>Totals %</b>	0.2%	45.2%	0.2%		45.6%	4.8%	1.1%	0%		5.8%	43.3%	5.3%	0%		48.6%	-
<b>PHF</b>	0.25	0.88	0.25		0.86	0.84	0.38	0		0.83	0.88	0.68	0		0.95	-
<b>Heavy</b>	1	52	0		53	20	3	0		23	60	21	0		81	-
<b>Heavy %</b>	100%	20.3%	0%		20.5%	74.1%	50%	0%		69.7%	24.5%	70%	0%		29.5%	-
<b>Lights</b>	0	204	1		205	7	3	0		10	185	9	0		194	-
<b>Lights %</b>	0%	79.7%	100%		79.5%	25.9%	50%	0%		30.3%	75.5%	30%	0%		70.5%	-
<b>Single-Unit Trucks</b>	1	20	0		21	9	3	0		12	25	6	0		31	-
<b>Single-Unit Trucks %</b>	100%	7.8%	0%		8.1%	33.3%	50%	0%		36.4%	10.2%	20%	0%		11.3%	-
<b>Buses</b>	0	8	0		8	0	0	0		0	11	0	0		11	-
<b>Buses %</b>	0%	3.1%	0%		3.1%	0%	0%	0%		0%	4.5%	0%	0%		4%	-
<b>Articulated Trucks</b>	0	24	0		24	11	0	0		11	24	15	0		39	-
<b>Articulated Trucks %</b>	0%	9.4%	0%		9.3%	40.7%	0%	0%		33.3%	9.8%	50%	0%		14.2%	-
<b>Pedestrians</b>	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
<b>Pedestrians%</b>	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



**Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (25.35 °C)**

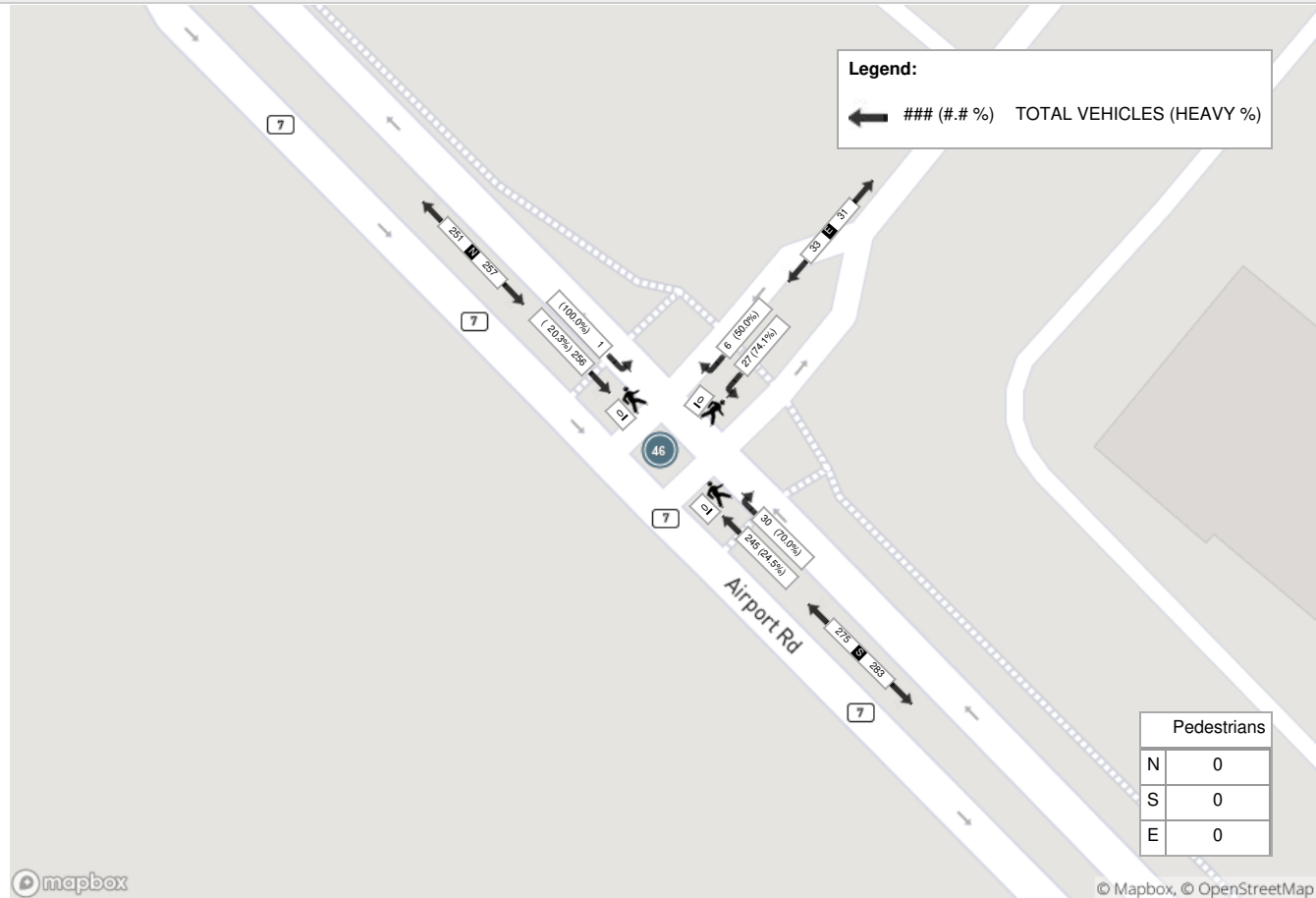
Start Time	N Approach AIRPORT RD					E Approach STREET A					S Approach AIRPORT RD					Int. Total (15 min)
	Left	Thru	UTurn	Peds	Approach Total	Left	Right	UTurn	Peds	Approach Total	Thru	Right	UTurn	Peds	Approach Total	
16:15:00	0	72	0	0	72	6	2	0	0	8	185	6	0	0	191	271
16:30:00	1	78	0	0	79	16	1	0	0	17	167	13	0	0	180	276
16:45:00	3	67	1	0	71	10	3	0	0	13	183	6	0	0	189	273
17:00:00	1	66	0	0	67	21	3	0	0	24	178	6	0	0	184	275
<b>Grand Total</b>	<b>5</b>	<b>283</b>	<b>1</b>	<b>0</b>	<b>289</b>	<b>53</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>713</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>744</b>	<b>1095</b>
<b>Approach%</b>	1.7%	97.9%	0.3%		-	85.5%	14.5%	0%		-	95.8%	4.2%	0%		-	-
<b>Totals %</b>	0.5%	25.8%	0.1%		26.4%	4.8%	0.8%	0%		5.7%	65.1%	2.8%	0%		67.9%	-
<b>PHF</b>	0.42	0.91	0.25		0.91	0.63	0.75	0		0.65	0.96	0.6	0		0.97	-
<b>Heavy</b>	3	55	0		58	22	2	0		24	53	19	0		72	-
<b>Heavy %</b>	60%	19.4%	0%		20.1%	41.5%	22.2%	0%		38.7%	7.4%	61.3%	0%		9.7%	-
<b>Lights</b>	2	228	1		231	31	7	0		38	660	12	0		672	-
<b>Lights %</b>	40%	80.6%	100%		79.9%	58.5%	77.8%	0%		61.3%	92.6%	38.7%	0%		90.3%	-
<b>Single-Unit Trucks</b>	1	18	0		19	10	2	0		12	20	1	0		21	-
<b>Single-Unit Trucks %</b>	20%	6.4%	0%		6.6%	18.9%	22.2%	0%		19.4%	2.8%	3.2%	0%		2.8%	-
<b>Buses</b>	0	22	0		22	0	0	0		0	0	0	0		0	-
<b>Buses %</b>	0%	7.8%	0%		7.6%	0%	0%	0%		0%	0%	0%	0%		0%	-
<b>Articulated Trucks</b>	2	15	0		17	12	0	0		12	33	18	0		51	-
<b>Articulated Trucks %</b>	40%	5.3%	0%		5.9%	22.6%	0%	0%		19.4%	4.6%	58.1%	0%		6.9%	-
<b>Pedestrians</b>	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
<b>Pedestrians%</b>	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-

**Peak Hour: 07:00 AM - 08:00 AM Weather: Mist (13.18 °C)**

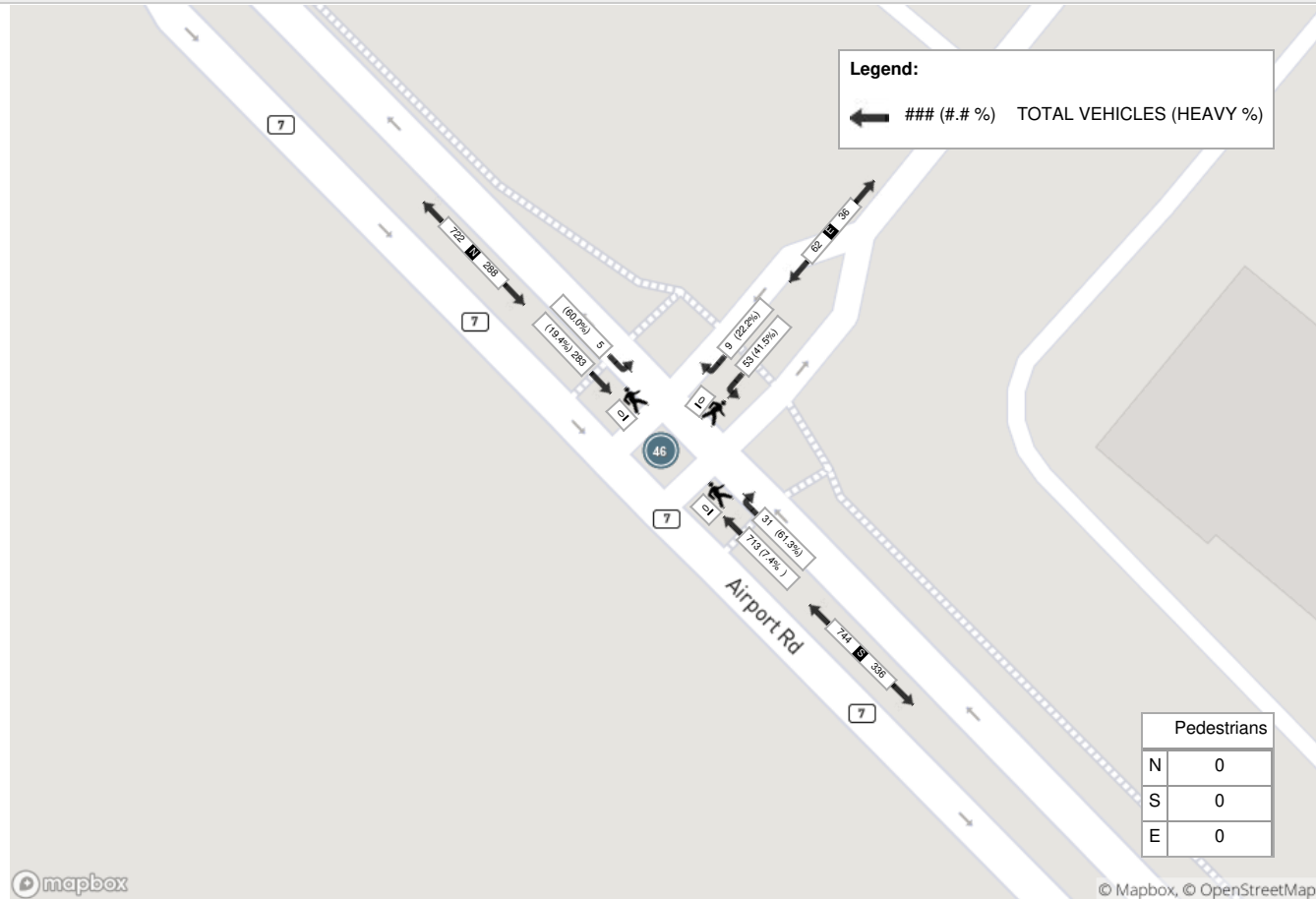




**Peak Hour: 12:45 PM - 01:45 PM Weather: Broken Clouds (23.38 °C)**



**Peak Hour: 04:15 PM - 05:15 PM Weather: Broken Clouds (25.35 °C)**





Turning Movement Count (33 . MAYFIELD RD & TORBRAM RD) CustID: 01409611 Miod: 368469

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)	Int. Total (1 hr)
	Left N-E	Thru N-S	Right N-W	U-Turn N-N	Peds N:	Approach Total	Left E-S	Thru E-W	Right E-N	U-Turn E-E	Peds E:	Approach Total	Left S-W	Thru S-N	Right S-E	U-Turn S-S	Peds S:	Approach Total	Left W-N	Thru W-E	Right W-S	U-Turn W-W	Peds W:	Approach Total		
07:00:00	0	21	2	0	0	23	9	141	1	0	0	151	4	7	3	0	0	14	0	171	8	0	0	179	367	
07:15:00	0	26	1	0	0	27	13	147	2	0	0	162	3	9	4	0	0	16	8	188	7	0	0	203	408	
07:30:00	2	45	10	0	0	57	14	153	1	0	0	168	5	4	3	0	0	12	3	193	9	0	0	205	442	
07:45:00	1	30	6	0	0	37	11	178	1	0	0	190	7	9	4	0	0	20	3	205	7	0	0	215	462	1679
08:00:00	1	35	3	0	0	39	10	147	1	0	0	158	12	2	6	0	0	20	2	211	25	0	0	238	455	1767
08:15:00	3	26	2	0	0	31	11	148	2	0	0	161	2	6	9	0	0	17	7	215	7	0	0	229	438	1797
08:30:00	3	20	4	0	0	27	9	135	3	0	0	147	3	6	10	0	0	19	3	180	13	0	0	196	389	1744
08:45:00	2	21	0	0	0	23	9	144	2	0	0	155	2	3	9	0	0	14	4	179	12	0	0	195	387	1669
***BREAK***																										
11:00:00	0	3	0	0	0	3	6	113	2	0	0	121	1	0	3	0	0	4	3	98	4	0	0	105	233	
11:15:00	2	6	0	0	0	8	9	99	2	0	0	110	2	5	7	0	0	14	4	115	7	0	0	126	258	
11:30:00	2	5	2	0	0	9	5	114	1	0	0	120	7	6	7	0	0	20	1	112	7	0	0	120	269	
11:45:00	1	7	2	0	0	10	6	119	7	0	0	132	3	8	8	0	0	19	4	106	4	0	0	114	275	1035
12:00:00	0	5	0	0	0	5	3	144	2	0	0	149	2	1	7	0	0	10	6	137	3	0	0	146	310	1112
12:15:00	0	3	2	0	0	5	8	102	1	0	0	111	2	7	3	0	0	12	5	106	7	0	0	118	246	1100
12:30:00	2	3	4	0	0	9	6	112	3	0	0	121	2	7	3	0	0	12	4	115	10	0	0	129	271	1102
12:45:00	0	8	1	0	0	9	5	130	1	0	0	136	2	4	3	0	0	9	5	116	2	0	0	123	277	1104
13:00:00	0	6	2	0	0	8	5	90	4	0	0	99	2	1	6	0	0	9	5	118	6	0	0	129	245	1039
13:15:00	0	2	5	0	0	7	7	104	3	0	0	114	6	5	4	0	0	15	2	132	8	0	0	142	278	1071
13:30:00	0	7	2	0	0	9	5	100	2	0	0	107	5	8	11	0	0	24	5	139	5	0	0	149	289	1089
13:45:00	2	5	2	0	0	9	3	132	3	0	0	138	4	7	8	0	0	19	7	146	4	0	0	157	323	1135
***BREAK***																										
15:00:00	1	5	1	0	0	7	13	178	4	0	0	195	9	21	7	0	0	37	5	152	9	0	0	166	405	
15:15:00	0	4	2	0	0	6	8	191	5	0	0	204	12	32	5	0	0	49	11	167	9	0	0	187	446	
15:30:00	0	4	1	0	0	5	6	197	2	0	0	205	5	27	16	0	0	48	17	184	10	0	0	211	469	
15:45:00	0	10	0	0	0	10	6	194	3	0	0	203	9	31	11	0	0	51	9	163	11	0	0	183	447	1767
16:00:00	0	7	2	0	0	9	13	194	6	0	0	213	9	37	12	0	0	58	8	180	13	0	0	201	481	1843
16:15:00	0	8	7	0	0	15	10	221	7	0	0	238	9	26	6	0	0	41	7	183	3	0	0	193	487	1884
16:30:00	1	4	3	0	0	8	5	221	5	0	0	231	7	30	9	0	0	46	7	193	6	0	0	206	491	1906
16:45:00	1	5	1	0	0	7	9	215	7	0	0	231	17	36	3	0	0	56	7	170	17	0	0	194	488	1947
17:00:00	0	4	0	0	0	4	9	213	4	0	0	226	13	28	6	0	0	47	8	190	10	0	0	208	485	1951
17:15:00	2	8	0	0	0	10	12	225	9	0	0	246	6	23	6	0	0	35	12	171	6	0	0	189	480	1944
17:30:00	0	7	1	0	0	8	6	200	5	0	0	211	7	22	7	0	0	36	10	183	7	0	0	200	455	1908
17:45:00	0	7	1	0	0	8	9	199	2	0	0	210	6	16	8	0	0	30	10	145	6	0	0	161	409	1829
Grand Total	26	357	69	0	0	452	260	5000	103	0	0	5363	185	434	214	0	0	833	192	5063	262	0	0	5517	12165	-
Approach%	5.8%	79%	15.3%	0%		-	4.8%	93.2%	1.9%	0%		-	22.2%	52.1%	25.7%	0%		-	3.5%	91.8%	4.7%	0%		-	-	-
Totals %	0.2%	2.9%	0.6%	0%		3.7%	2.1%	41.1%	0.8%	0%		44.1%	1.5%	3.6%	1.8%	0%		6.8%	1.6%	41.6%	2.2%	0%		45.4%	-	-
Heavy	1	7	2	0		-	6	689	8	0		-	5	8	12	0		-	6	732	7	0		-	-	-
Heavy %	3.8%	2%	2.9%	0%		-	2.3%	13.8%	7.8%	0%		-	2.7%	1.8%	5.6%	0%		-	3.1%	14.5%	2.7%	0%		-	-	-
Bicycles	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-



Peak Hour: 07:30 AM - 08:30 AM Weather: Light Rain (-0.1 °C)

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
07:30:00	2	45	10	0	0	57	14	153	1	0	0	168	5	4	3	0	0	12	3	193	9	0	0	205	442
07:45:00	1	30	6	0	0	37	11	178	1	0	0	190	7	9	4	0	0	20	3	205	7	0	0	215	462
08:00:00	1	35	3	0	0	39	10	147	1	0	0	158	12	2	6	0	0	20	2	211	25	0	0	238	455
08:15:00	3	26	2	0	0	31	11	148	2	0	0	161	2	6	9	0	0	17	7	215	7	0	0	229	438
Grand Total	7	136	21	0	0	164	46	626	5	0	0	677	26	21	22	0	0	69	15	824	48	0	0	887	1797
Approach%	4.3%	82.9%	12.8%	0%		-	6.8%	92.5%	0.7%	0%		-	37.7%	30.4%	31.9%	0%		-	1.7%	92.9%	5.4%	0%		-	-
Totals %	0.4%	7.6%	1.2%	0%		9.1%	2.6%	34.8%	0.3%	0%		37.7%	1.4%	1.2%	1.2%	0%		3.8%	0.8%	45.9%	2.7%	0%		49.4%	-
PHF	0.58	0.76	0.53	0		0.72	0.82	0.88	0.63	0		0.89	0.54	0.58	0.61	0		0.86	0.54	0.96	0.48	0		0.93	-
Heavy	0	2	0	0		2	1	82	1	0		84	1	2	2	0		5	1	91	1	0		93	-
Heavy %	0%	1.5%	0%	0%		1.2%	2.2%	13.1%	20%	0%		12.4%	3.8%	9.5%	9.1%	0%		7.2%	6.7%	11%	2.1%	0%		10.5%	-
Lights	7	134	21	0		162	45	544	4	0		593	25	19	20	0		64	14	733	47	0		794	-
Lights %	100%	98.5%	100%	0%		98.8%	97.8%	86.9%	80%	0%		87.6%	96.2%	90.5%	90.9%	0%		92.8%	93.3%	89%	97.9%	0%		89.5%	-
Single-Unit Trucks	0	1	0	0		1	1	42	1	0		44	0	1	1	0		2	0	38	1	0		39	-
Single-Unit Trucks %	0%	0.7%	0%	0%		0.6%	2.2%	6.7%	20%	0%		6.5%	0%	4.8%	4.5%	0%		2.9%	0%	4.6%	2.1%	0%		4.4%	-
Buses	0	1	0	0		1	0	11	0	0		11	1	1	1	0		3	1	13	0	0		14	-
Buses %	0%	0.7%	0%	0%		0.6%	0%	1.8%	0%	0%		1.6%	3.8%	4.8%	4.5%	0%		4.3%	6.7%	1.6%	0%	0%		1.6%	-
Articulated Trucks	0	0	0	0		0	0	29	0	0		29	0	0	0	0		0	0	40	0	0		40	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	4.6%	0%	0%		4.3%	0%	0%	0%	0%		0%	0%	4.9%	0%	0%		4.5%	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	%	-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		-	-



Turning Movement Count  
Location Name: MAYFIELD RD & TORBRAM RD  
Date: Thu, Nov 24, 2016    Deployment Lead: Chris Koukaras

Peak Hour: 01:00 PM - 02:00 PM    Weather: Light Drizzle (1 °C)

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
13:00:00	0	6	2	0	0	8	5	90	4	0	0	99	2	1	6	0	0	9	5	118	6	0	0	129	245
13:15:00	0	2	5	0	0	7	7	104	3	0	0	114	6	5	4	0	0	15	2	132	8	0	0	142	278
13:30:00	0	7	2	0	0	9	5	100	2	0	0	107	5	8	11	0	0	24	5	139	5	0	0	149	289
13:45:00	2	5	2	0	0	9	3	132	3	0	0	138	4	7	8	0	0	19	7	146	4	0	0	157	323
Grand Total	2	20	11	0	0	33	20	426	12	0	0	458	17	21	29	0	0	67	19	535	23	0	0	577	1135
Approach%	6.1%	60.6%	33.3%	0%		-	4.4%	93%	2.6%	0%		-	25.4%	31.3%	43.3%	0%		-	3.3%	92.7%	4%	0%		-	-
Totals %	0.2%	1.8%	1%	0%		2.9%	1.8%	37.5%	1.1%	0%		40.4%	1.5%	1.9%	2.6%	0%		5.9%	1.7%	47.1%	2%	0%		50.8%	-
PHF	0.25	0.71	0.55	0		0.92	0.71	0.81	0.75	0		0.83	0.71	0.66	0.66	0		0.7	0.68	0.92	0.72	0		0.92	-
Heavy	0	1	0	0		1	1	88	0	0		89	1	2	0	0		3	1	101	0	0		102	-
Heavy %	0%	5%	0%	0%		3%	5%	20.7%	0%	0%		19.4%	5.9%	9.5%	0%	0%		4.5%	5.3%	18.9%	0%	0%		17.7%	-
Lights	2	19	11	0		32	19	338	12	0		369	16	19	29	0		64	18	434	23	0		475	-
Lights %	100%	95%	100%	0%		97%	95%	79.3%	100%	0%		80.6%	94.1%	90.5%	100%	0%		95.5%	94.7%	81.1%	100%	0%		82.3%	-
Single-Unit Trucks	0	0	0	0		0	1	25	0	0		26	1	2	0	0		3	0	46	0	0		46	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	5%	5.9%	0%	0%		5.7%	5.9%	9.5%	0%	0%		4.5%	0%	8.6%	0%	0%		8%	-
Buses	0	1	0	0		1	0	19	0	0		19	0	0	0	0		0	0	2	0	0		2	-
Buses %	0%	5%	0%	0%		3%	0%	4.5%	0%	0%		4.1%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	-
Articulated Trucks	0	0	0	0		0	0	44	0	0		44	0	0	0	0		0	1	53	0	0		54	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	10.3%	0%	0%		9.6%	0%	0%	0%	0%		0%	5.3%	9.9%	0%	0%		9.4%	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-



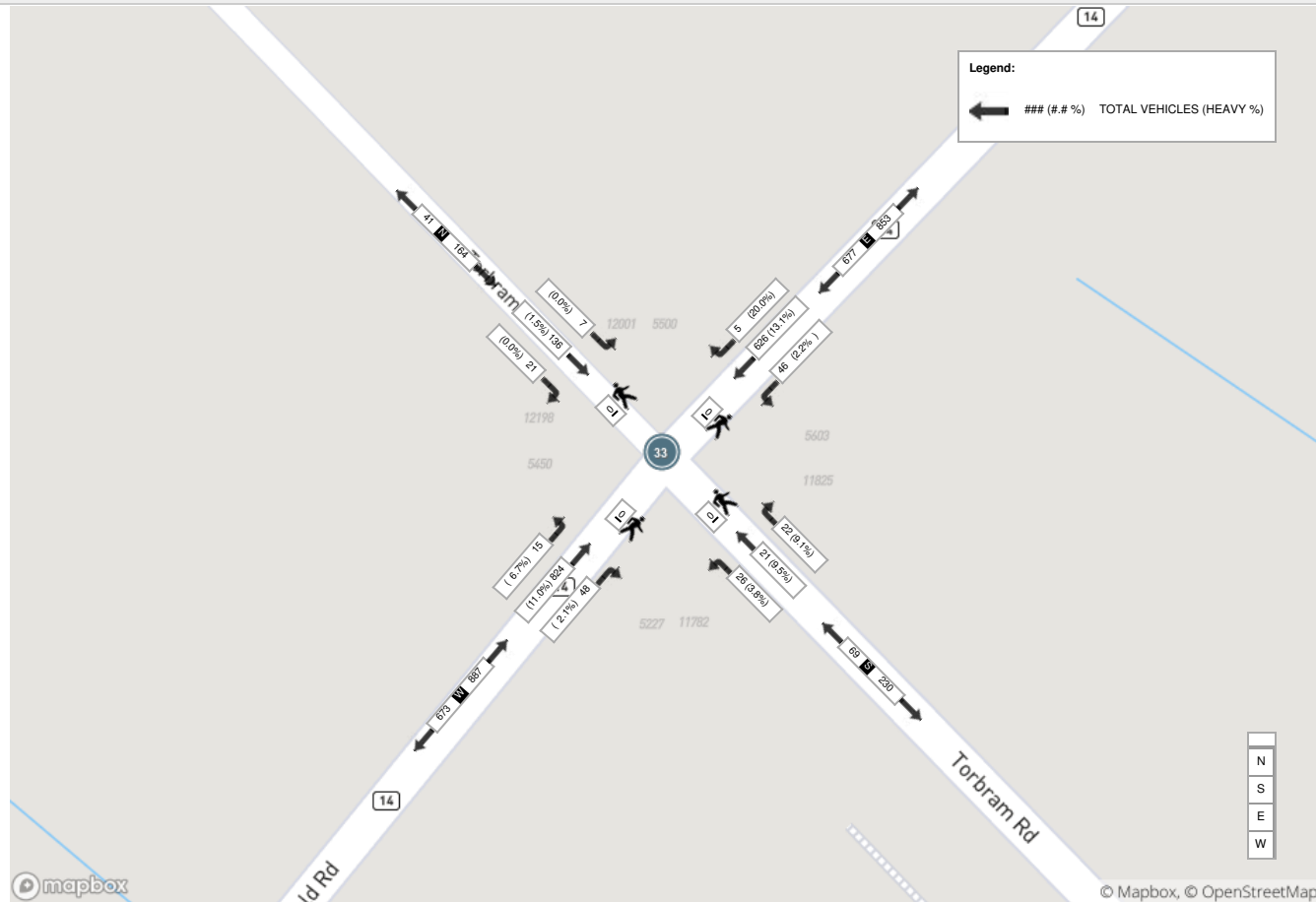
Turning Movement Count  
Location Name: MAYFIELD RD & TORBRAM RD  
Date: Thu, Nov 24, 2016    Deployment Lead: Chris Koukaras

Peak Hour: 04:15 PM - 05:15 PM    Weather: Light Drizzle (2.9 °C)

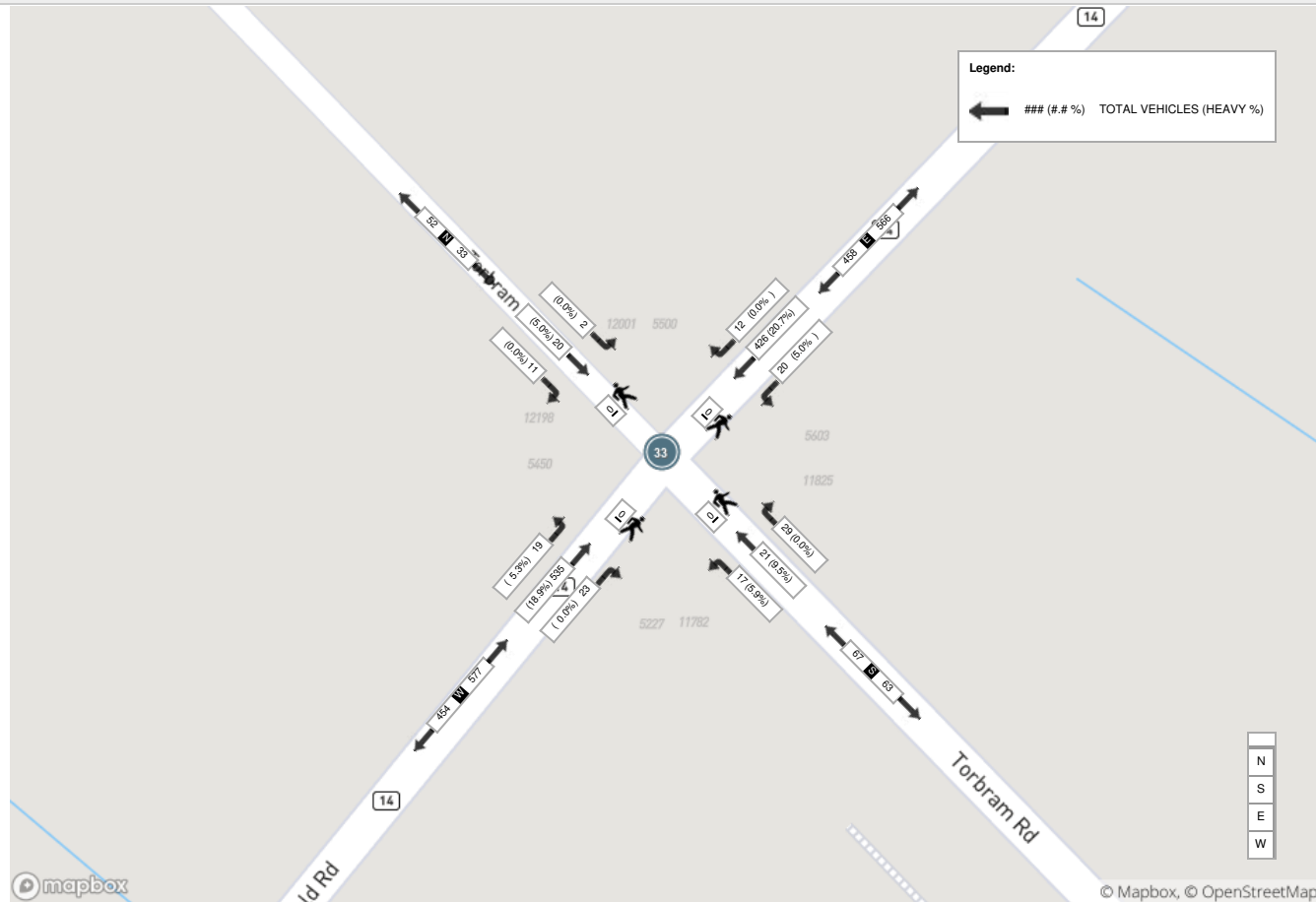
Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
16:15:00	0	8	7	0	0	15	10	221	7	0	0	238	9	26	6	0	0	41	7	183	3	0	0	193	487
16:30:00	1	4	3	0	0	8	5	221	5	0	0	231	7	30	9	0	0	46	7	193	6	0	0	206	491
16:45:00	1	5	1	0	0	7	9	215	7	0	0	231	17	36	3	0	0	56	7	170	17	0	0	194	488
17:00:00	0	4	0	0	0	4	9	213	4	0	0	226	13	28	6	0	0	47	8	190	10	0	0	208	485
Grand Total	2	21	11	0	0	34	33	870	23	0	0	926	46	120	24	0	0	190	29	736	36	0	0	801	1951
Approach%	5.9%	61.8%	32.4%	0%		-	3.6%	94%	2.5%	0%		-	24.2%	63.2%	12.6%	0%		-	3.6%	91.9%	4.5%	0%		-	-
Totals %	0.1%	1.1%	0.6%	0%		1.7%	1.7%	44.6%	1.2%	0%		47.5%	2.4%	6.2%	1.2%	0%		9.7%	1.5%	37.7%	1.8%	0%		41.1%	-
PHF	0.5	0.66	0.39	0		0.57	0.83	0.98	0.82	0		0.97	0.68	0.83	0.67	0		0.85	0.91	0.95	0.53	0		0.96	-
Heavy	0	0	1	0		1	0	76	1	0		77	0	0	1	0		1	1	86	0	0		87	-
Heavy %	0%	0%	9.1%	0%		2.9%	0%	8.7%	4.3%	0%		8.3%	0%	0%	4.2%	0%		0.5%	3.4%	11.7%	0%	0%		10.9%	-
Lights	2	21	10	0		33	33	794	22	0		849	46	120	23	0		189	28	650	36	0		714	-
Lights %	100%	100%	90.9%	0%		97.1%	100%	91.3%	95.7%	0%		91.7%	100%	100%	95.8%	0%		99.5%	96.6%	88.3%	100%	0%		89.1%	-
Single-Unit Trucks	0	0	0	0		0	0	29	0	0		29	0	0	0	0		0	1	27	0	0		28	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	3.3%	0%	0%		3.1%	0%	0%	0%	0%		0%	3.4%	3.7%	0%	0%		3.5%	-
Buses	0	0	1	0		1	0	12	1	0		13	0	0	1	0		1	0	18	0	0		18	-
Buses %	0%	0%	9.1%	0%		2.9%	0%	1.4%	4.3%	0%		1.4%	0%	0%	4.2%	0%		0.5%	0%	2.4%	0%	0%		2.2%	-
Articulated Trucks	0	0	0	0		0	0	35	0	0		35	0	0	0	0		0	0	41	0	0		41	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	4%	0%	0%		3.8%	0%	0%	0%	0%		0%	0%	5.6%	0%	0%		5.1%	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-



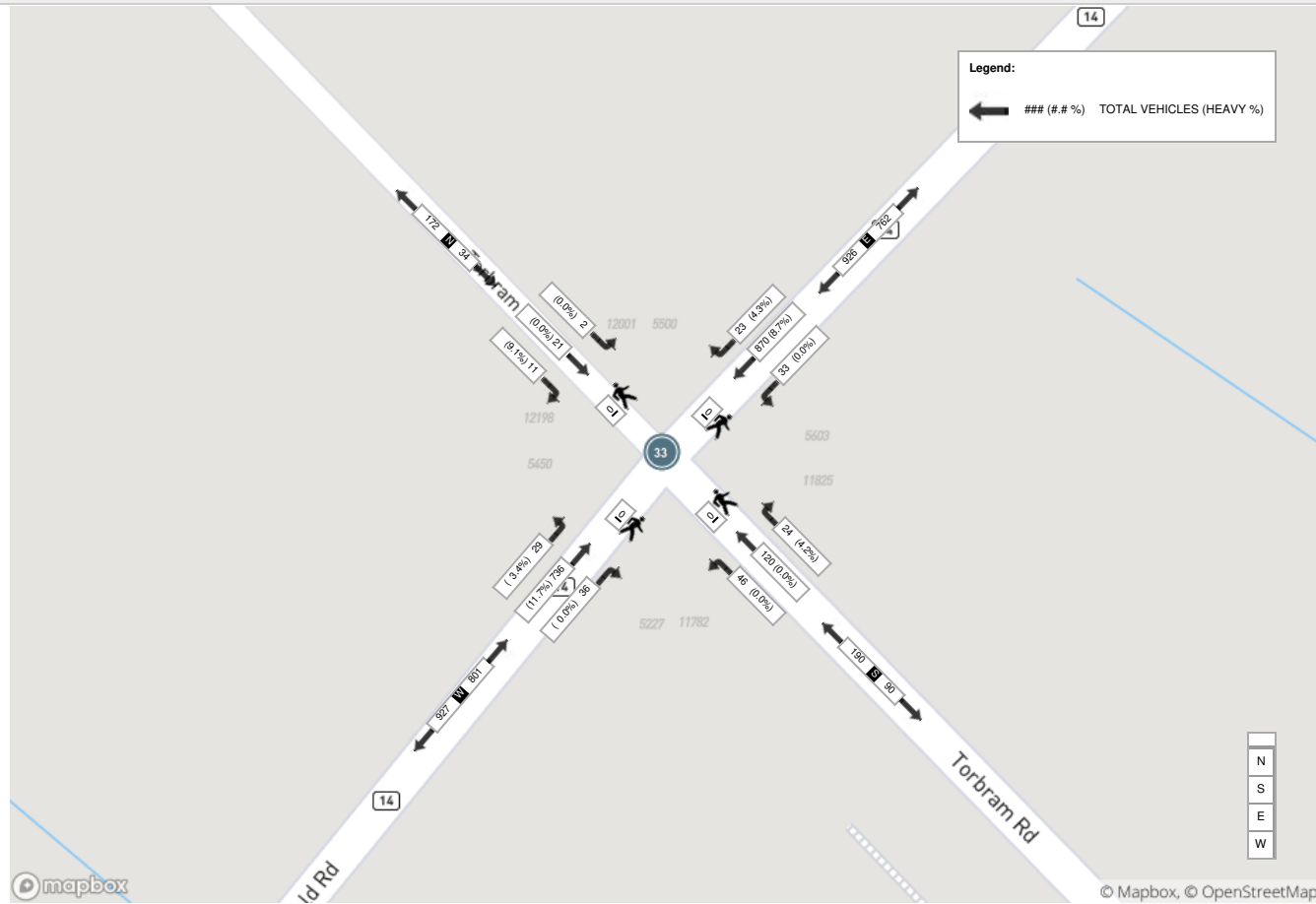
Peak Hour: 07:30 AM - 08:30 AM Weather: Light Rain (-0.1 °C)



Peak Hour: 01:00 PM - 02:00 PM Weather: Light Drizzle (1 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Drizzle (2.9 °C)





Turning Movement Count (33 . MAYFIELD RD & TORBRAM RD) CustID: 01409611 Miod: 368469

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)	Int. Total (1 hr)
	Left N-E	Thru N-S	Right N-W	U-Turn N-N	Peds N:	Approach Total	Left E-S	Thru E-W	Right E-N	U-Turn E-E	Peds E:	Approach Total	Left S-W	Thru S-N	Right S-E	U-Turn S-S	Peds S:	Approach Total	Left W-N	Thru W-E	Right W-S	U-Turn W-W	Peds W:	Approach Total		
07:00:00	0	21	2	0	0	23	9	141	1	0	0	151	4	7	3	0	0	14	0	171	8	0	0	179	367	
07:15:00	0	26	1	0	0	27	13	147	2	0	0	162	3	9	4	0	0	16	8	188	7	0	0	203	408	
07:30:00	2	45	10	0	0	57	14	153	1	0	0	168	5	4	3	0	0	12	3	193	9	0	0	205	442	
07:45:00	1	30	6	0	0	37	11	178	1	0	0	190	7	9	4	0	0	20	3	205	7	0	0	215	462	1679
08:00:00	1	35	3	0	0	39	10	147	1	0	0	158	12	2	6	0	0	20	2	211	25	0	0	238	455	1767
08:15:00	3	26	2	0	0	31	11	148	2	0	0	161	2	6	9	0	0	17	7	215	7	0	0	229	438	1797
08:30:00	3	20	4	0	0	27	9	135	3	0	0	147	3	6	10	0	0	19	3	180	13	0	0	196	389	1744
08:45:00	2	21	0	0	0	23	9	144	2	0	0	155	2	3	9	0	0	14	4	179	12	0	0	195	387	1669
***BREAK***																										
11:00:00	0	3	0	0	0	3	6	113	2	0	0	121	1	0	3	0	0	4	3	98	4	0	0	105	233	
11:15:00	2	6	0	0	0	8	9	99	2	0	0	110	2	5	7	0	0	14	4	115	7	0	0	126	258	
11:30:00	2	5	2	0	0	9	5	114	1	0	0	120	7	6	7	0	0	20	1	112	7	0	0	120	269	
11:45:00	1	7	2	0	0	10	6	119	7	0	0	132	3	8	8	0	0	19	4	106	4	0	0	114	275	1035
12:00:00	0	5	0	0	0	5	3	144	2	0	0	149	2	1	7	0	0	10	6	137	3	0	0	146	310	1112
12:15:00	0	3	2	0	0	5	8	102	1	0	0	111	2	7	3	0	0	12	5	106	7	0	0	118	246	1100
12:30:00	2	3	4	0	0	9	6	112	3	0	0	121	2	7	3	0	0	12	4	115	10	0	0	129	271	1102
12:45:00	0	8	1	0	0	9	5	130	1	0	0	136	2	4	3	0	0	9	5	116	2	0	0	123	277	1104
13:00:00	0	6	2	0	0	8	5	90	4	0	0	99	2	1	6	0	0	9	5	118	6	0	0	129	245	1039
13:15:00	0	2	5	0	0	7	7	104	3	0	0	114	6	5	4	0	0	15	2	132	8	0	0	142	278	1071
13:30:00	0	7	2	0	0	9	5	100	2	0	0	107	5	8	11	0	0	24	5	139	5	0	0	149	289	1089
13:45:00	2	5	2	0	0	9	3	132	3	0	0	138	4	7	8	0	0	19	7	146	4	0	0	157	323	1135
***BREAK***																										
15:00:00	1	5	1	0	0	7	13	178	4	0	0	195	9	21	7	0	0	37	5	152	9	0	0	166	405	
15:15:00	0	4	2	0	0	6	8	191	5	0	0	204	12	32	5	0	0	49	11	167	9	0	0	187	446	
15:30:00	0	4	1	0	0	5	6	197	2	0	0	205	5	27	16	0	0	48	17	184	10	0	0	211	469	
15:45:00	0	10	0	0	0	10	6	194	3	0	0	203	9	31	11	0	0	51	9	163	11	0	0	183	447	1767
16:00:00	0	7	2	0	0	9	13	194	6	0	0	213	9	37	12	0	0	58	8	180	13	0	0	201	481	1843
16:15:00	0	8	7	0	0	15	10	221	7	0	0	238	9	26	6	0	0	41	7	183	3	0	0	193	487	1884
16:30:00	1	4	3	0	0	8	5	221	5	0	0	231	7	30	9	0	0	46	7	193	6	0	0	206	491	1906
16:45:00	1	5	1	0	0	7	9	215	7	0	0	231	17	36	3	0	0	56	7	170	17	0	0	194	488	1947
17:00:00	0	4	0	0	0	4	9	213	4	0	0	226	13	28	6	0	0	47	8	190	10	0	0	208	485	1951
17:15:00	2	8	0	0	0	10	12	225	9	0	0	246	6	23	6	0	0	35	12	171	6	0	0	189	480	1944
17:30:00	0	7	1	0	0	8	6	200	5	0	0	211	7	22	7	0	0	36	10	183	7	0	0	200	455	1908
17:45:00	0	7	1	0	0	8	9	199	2	0	0	210	6	16	8	0	0	30	10	145	6	0	0	161	409	1829
Grand Total	26	357	69	0	0	452	260	5000	103	0	0	5363	185	434	214	0	0	833	192	5063	262	0	0	5517	12165	-
Approach%	5.8%	79%	15.3%	0%		-	4.8%	93.2%	1.9%	0%		-	22.2%	52.1%	25.7%	0%		-	3.5%	91.8%	4.7%	0%		-	-	-
Totals %	0.2%	2.9%	0.6%	0%		3.7%	2.1%	41.1%	0.8%	0%		44.1%	1.5%	3.6%	1.8%	0%		6.8%	1.6%	41.6%	2.2%	0%		45.4%	-	-
Heavy	1	7	2	0		-	6	689	8	0		-	5	8	12	0		-	6	732	7	0		-	-	-
Heavy %	3.8%	2%	2.9%	0%		-	2.3%	13.8%	7.8%	0%		-	2.7%	1.8%	5.6%	0%		-	3.1%	14.5%	2.7%	0%		-	-	-
Bicycles	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-



Turning Movement Count  
Location Name: MAYFIELD RD & TORBRAM RD  
Date: Thu, Nov 24, 2016    Deployment Lead: Chris Koukaras

Peak Hour: 07:30 AM - 08:30 AM    Weather: Light Rain (-0.1 °C)

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
07:30:00	2	45	10	0	0	57	14	153	1	0	0	168	5	4	3	0	0	12	3	193	9	0	0	205	442
07:45:00	1	30	6	0	0	37	11	178	1	0	0	190	7	9	4	0	0	20	3	205	7	0	0	215	462
08:00:00	1	35	3	0	0	39	10	147	1	0	0	158	12	2	6	0	0	20	2	211	25	0	0	238	455
08:15:00	3	26	2	0	0	31	11	148	2	0	0	161	2	6	9	0	0	17	7	215	7	0	0	229	438
Grand Total	7	136	21	0	0	164	46	626	5	0	0	677	26	21	22	0	0	69	15	824	48	0	0	887	1797
Approach%	4.3%	82.9%	12.8%	0%		-	6.8%	92.5%	0.7%	0%		-	37.7%	30.4%	31.9%	0%		-	1.7%	92.9%	5.4%	0%		-	-
Totals %	0.4%	7.6%	1.2%	0%		9.1%	2.6%	34.8%	0.3%	0%		37.7%	1.4%	1.2%	1.2%	0%		3.8%	0.8%	45.9%	2.7%	0%		49.4%	-
PHF	0.58	0.76	0.53	0		0.72	0.82	0.88	0.63	0		0.89	0.54	0.58	0.61	0		0.86	0.54	0.96	0.48	0		0.93	-
Heavy	0	2	0	0		2	1	82	1	0		84	1	2	2	0		5	1	91	1	0		93	-
Heavy %	0%	1.5%	0%	0%		1.2%	2.2%	13.1%	20%	0%		12.4%	3.8%	9.5%	9.1%	0%		7.2%	6.7%	11%	2.1%	0%		10.5%	-
Lights	7	134	21	0		162	45	544	4	0		593	25	19	20	0		64	14	733	47	0		794	-
Lights %	100%	98.5%	100%	0%		98.8%	97.8%	86.9%	80%	0%		87.6%	96.2%	90.5%	90.9%	0%		92.8%	93.3%	89%	97.9%	0%		89.5%	-
Single-Unit Trucks	0	1	0	0		1	1	42	1	0		44	0	1	1	0		2	0	38	1	0		39	-
Single-Unit Trucks %	0%	0.7%	0%	0%		0.6%	2.2%	6.7%	20%	0%		6.5%	0%	4.8%	4.5%	0%		2.9%	0%	4.6%	2.1%	0%		4.4%	-
Buses	0	1	0	0		1	0	11	0	0		11	1	1	1	0		3	1	13	0	0		14	-
Buses %	0%	0.7%	0%	0%		0.6%	0%	1.8%	0%	0%		1.6%	3.8%	4.8%	4.5%	0%		4.3%	6.7%	1.6%	0%	0%		1.6%	-
Articulated Trucks	0	0	0	0		0	0	29	0	0		29	0	0	0	0		0	0	40	0	0		40	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	4.6%	0%	0%		4.3%	0%	0%	0%	0%		0%	0%	4.9%	0%	0%		4.5%	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	%	-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		-	-



Peak Hour: 01:00 PM - 02:00 PM Weather: Light Drizzle (1 °C)

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
13:00:00	0	6	2	0	0	8	5	90	4	0	0	99	2	1	6	0	0	9	5	118	6	0	0	129	245
13:15:00	0	2	5	0	0	7	7	104	3	0	0	114	6	5	4	0	0	15	2	132	8	0	0	142	278
13:30:00	0	7	2	0	0	9	5	100	2	0	0	107	5	8	11	0	0	24	5	139	5	0	0	149	289
13:45:00	2	5	2	0	0	9	3	132	3	0	0	138	4	7	8	0	0	19	7	146	4	0	0	157	323
Grand Total	2	20	11	0	0	33	20	426	12	0	0	458	17	21	29	0	0	67	19	535	23	0	0	577	1135
Approach%	6.1%	60.6%	33.3%	0%		-	4.4%	93%	2.6%	0%		-	25.4%	31.3%	43.3%	0%		-	3.3%	92.7%	4%	0%		-	-
Totals %	0.2%	1.8%	1%	0%		2.9%	1.8%	37.5%	1.1%	0%		40.4%	1.5%	1.9%	2.6%	0%		5.9%	1.7%	47.1%	2%	0%		50.8%	-
PHF	0.25	0.71	0.55	0		0.92	0.71	0.81	0.75	0		0.83	0.71	0.66	0.66	0		0.7	0.68	0.92	0.72	0		0.92	-
Heavy	0	1	0	0		1	1	88	0	0		89	1	2	0	0		3	1	101	0	0		102	-
Heavy %	0%	5%	0%	0%		3%	5%	20.7%	0%	0%		19.4%	5.9%	9.5%	0%	0%		4.5%	5.3%	18.9%	0%	0%		17.7%	-
Lights	2	19	11	0		32	19	338	12	0		369	16	19	29	0		64	18	434	23	0		475	-
Lights %	100%	95%	100%	0%		97%	95%	79.3%	100%	0%		80.6%	94.1%	90.5%	100%	0%		95.5%	94.7%	81.1%	100%	0%		82.3%	-
Single-Unit Trucks	0	0	0	0		0	1	25	0	0		26	1	2	0	0		3	0	46	0	0		46	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	5%	5.9%	0%	0%		5.7%	5.9%	9.5%	0%	0%		4.5%	0%	8.6%	0%	0%		8%	-
Buses	0	1	0	0		1	0	19	0	0		19	0	0	0	0		0	0	2	0	0		2	-
Buses %	0%	5%	0%	0%		3%	0%	4.5%	0%	0%		4.1%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.3%	-
Articulated Trucks	0	0	0	0		0	0	44	0	0		44	0	0	0	0		0	1	53	0	0		54	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	10.3%	0%	0%		9.6%	0%	0%	0%	0%		0%	5.3%	9.9%	0%	0%		9.4%	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-

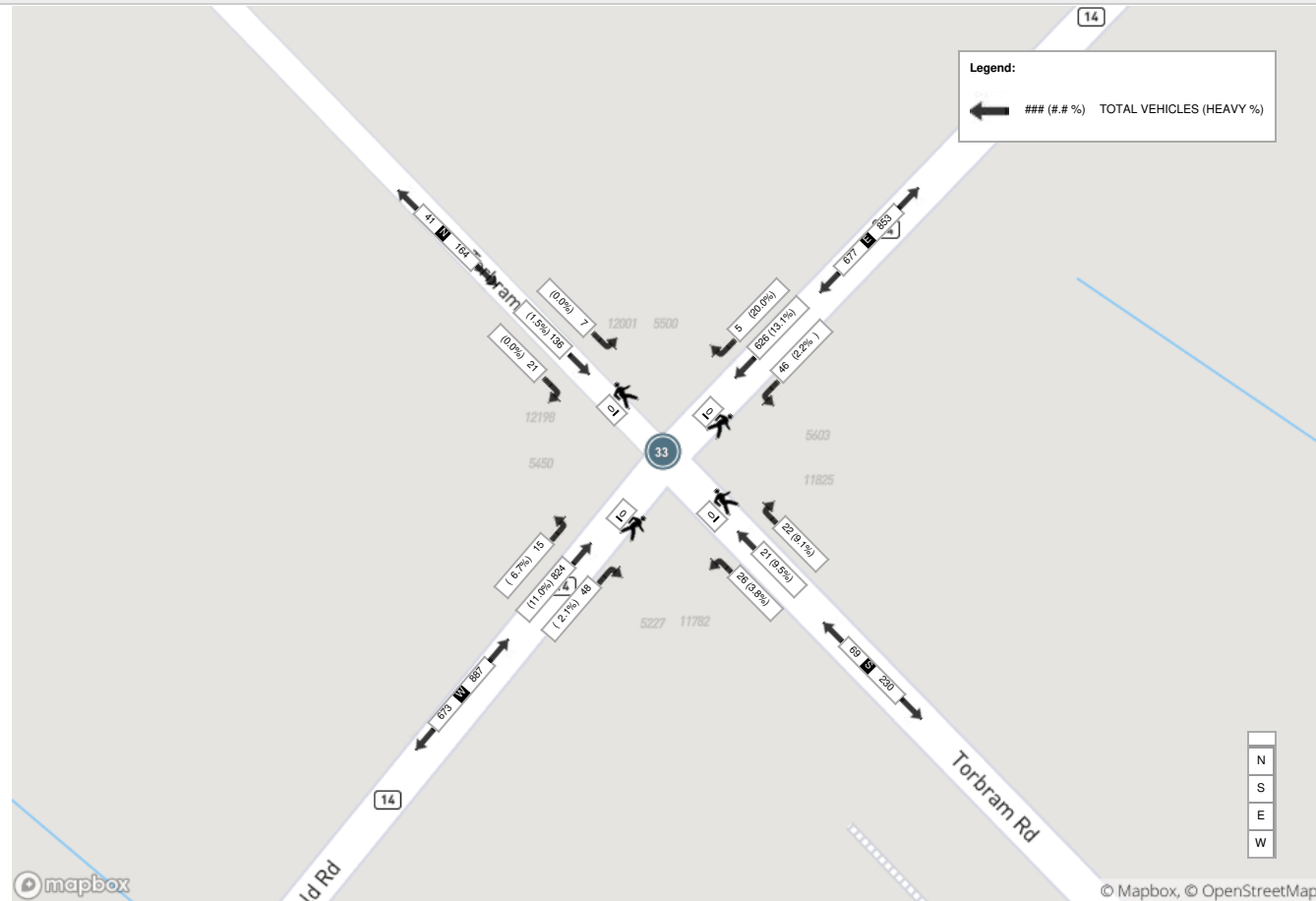




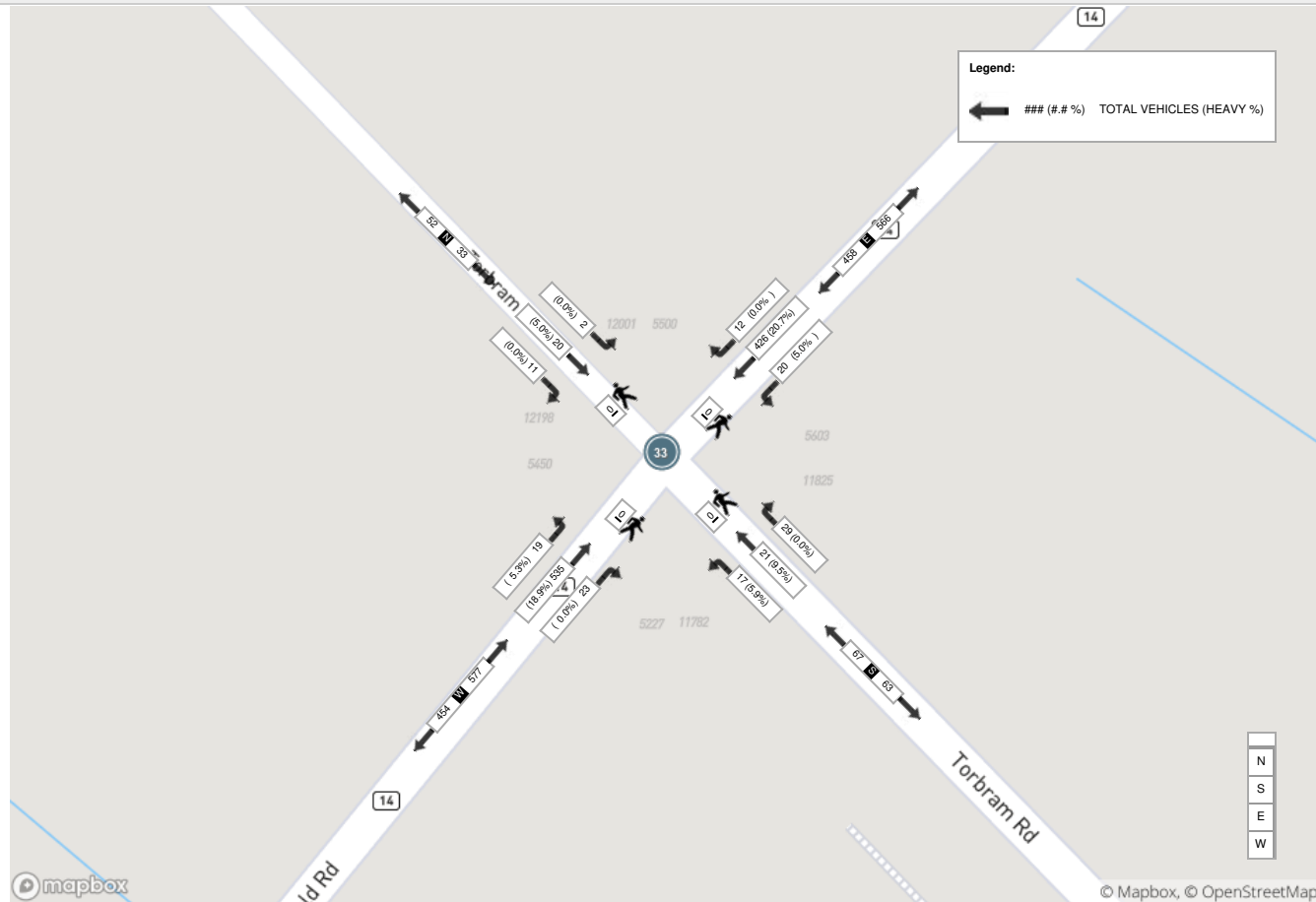
Peak Hour: 04:15 PM - 05:15 PM Weather: Light Drizzle (2.9 °C)

Start Time	N Approach TORBRAM RD						E Approach MAYFIELD RD						S Approach TORBRAM RD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
16:15:00	0	8	7	0	0	15	10	221	7	0	0	238	9	26	6	0	0	41	7	183	3	0	0	193	487
16:30:00	1	4	3	0	0	8	5	221	5	0	0	231	7	30	9	0	0	46	7	193	6	0	0	206	491
16:45:00	1	5	1	0	0	7	9	215	7	0	0	231	17	36	3	0	0	56	7	170	17	0	0	194	488
17:00:00	0	4	0	0	0	4	9	213	4	0	0	226	13	28	6	0	0	47	8	190	10	0	0	208	485
Grand Total	2	21	11	0	0	34	33	870	23	0	0	926	46	120	24	0	0	190	29	736	36	0	0	801	1951
Approach%	5.9%	61.8%	32.4%	0%		-	3.6%	94%	2.5%	0%		-	24.2%	63.2%	12.6%	0%		-	3.6%	91.9%	4.5%	0%		-	-
Totals %	0.1%	1.1%	0.6%	0%		1.7%	1.7%	44.6%	1.2%	0%		47.5%	2.4%	6.2%	1.2%	0%		9.7%	1.5%	37.7%	1.8%	0%		41.1%	-
PHF	0.5	0.66	0.39	0		0.57	0.83	0.98	0.82	0		0.97	0.68	0.83	0.67	0		0.85	0.91	0.95	0.53	0		0.96	-
Heavy	0	0	1	0		1	0	76	1	0		77	0	0	1	0		1	1	86	0	0		87	-
Heavy %	0%	0%	9.1%	0%		2.9%	0%	8.7%	4.3%	0%		8.3%	0%	0%	4.2%	0%		0.5%	3.4%	11.7%	0%	0%		10.9%	-
Lights	2	21	10	0		33	33	794	22	0		849	46	120	23	0		189	28	650	36	0		714	-
Lights %	100%	100%	90.9%	0%		97.1%	100%	91.3%	95.7%	0%		91.7%	100%	100%	95.8%	0%		99.5%	96.6%	88.3%	100%	0%		89.1%	-
Single-Unit Trucks	0	0	0	0		0	0	29	0	0		29	0	0	0	0		0	1	27	0	0		28	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	3.3%	0%	0%		3.1%	0%	0%	0%	0%		0%	3.4%	3.7%	0%	0%		3.5%	-
Buses	0	0	1	0		1	0	12	1	0		13	0	0	1	0		1	0	18	0	0		18	-
Buses %	0%	0%	9.1%	0%		2.9%	0%	1.4%	4.3%	0%		1.4%	0%	0%	4.2%	0%		0.5%	0%	2.4%	0%	0%		2.2%	-
Articulated Trucks	0	0	0	0		0	0	35	0	0		35	0	0	0	0		0	0	41	0	0		41	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	4%	0%	0%		3.8%	0%	0%	0%	0%		0%	0%	5.6%	0%	0%		5.1%	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-	-	-	-	%	-	-

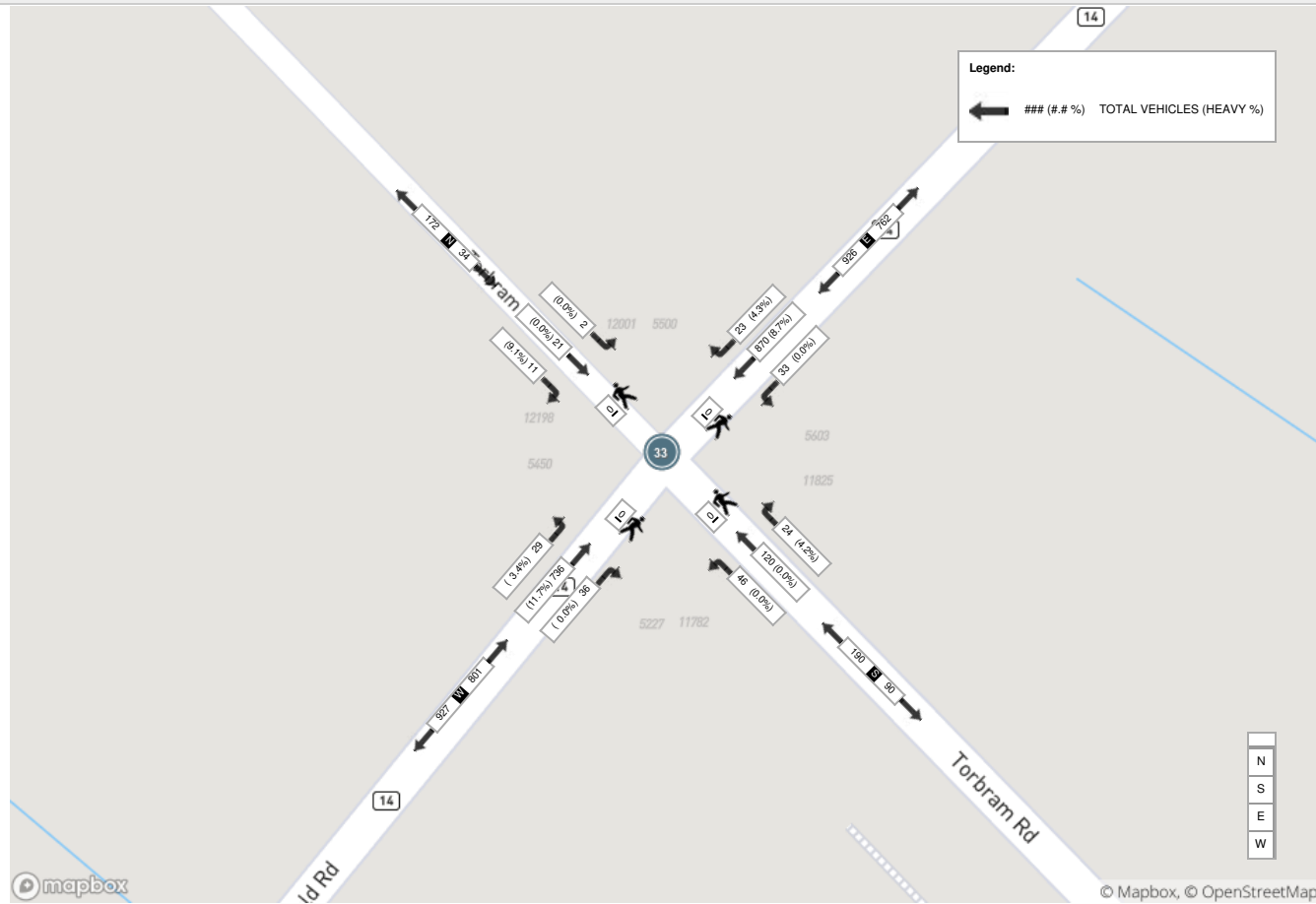
Peak Hour: 07:30 AM - 08:30 AM Weather: Light Rain (-0.1 °C)



Peak Hour: 01:00 PM - 02:00 PM Weather: Light Drizzle (1 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Light Drizzle (2.9 °C)





# Turning Movements Report - AM Period

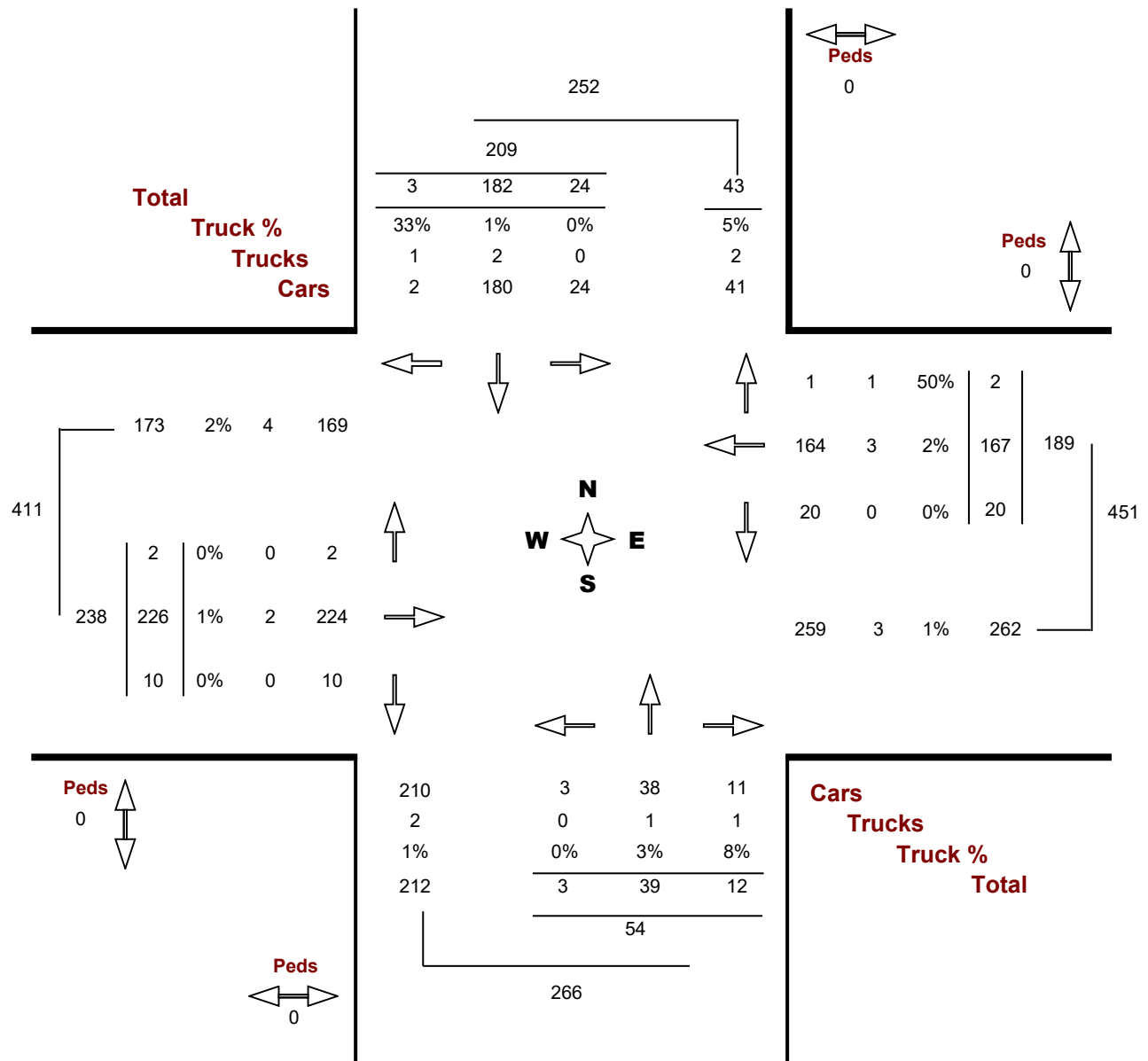
**Location.....** TORBRAM RD @ OLD SCHOOL RD

**Municipality.....** Caledon

**GeoID.....** 25493

**Count Date.....** Thursday, 07 September, 2017

**Peak Hour.....** 07:15 AM — 08:15 AM





# Turning Movements Report - PM Period

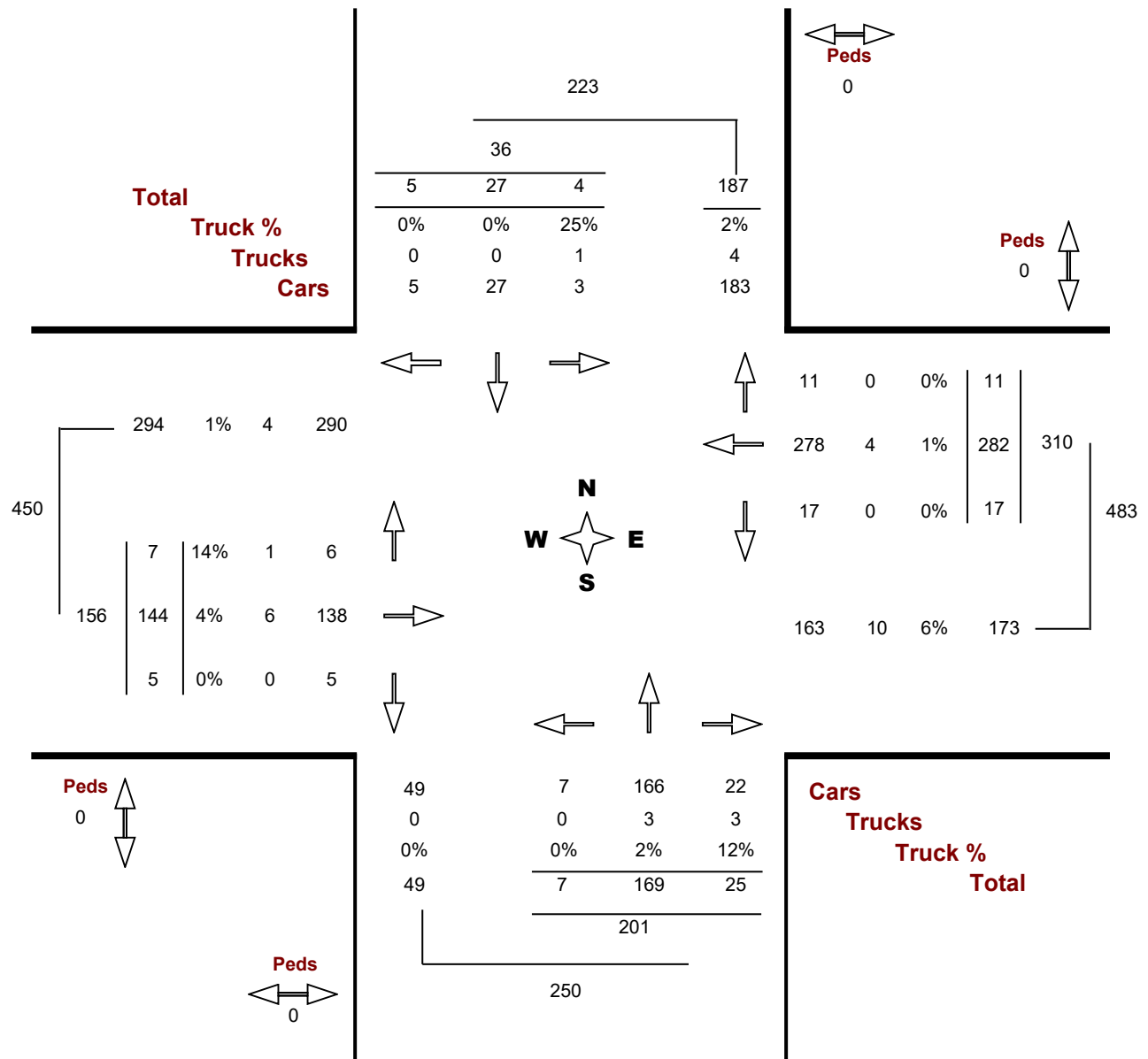
**Location.....** TORBRAM RD @ OLD SCHOOL RD

**Municipality.....** Caledon

**GeoID.....** 25493

**Count Date.....** Thursday, 07 September, 2017

**Peak Hour.....** 04:30 PM — 05:30 PM





# SIGNAL TIMING PLANS

## REGIONAL MUNICIPALITY OF PEEL

### Traffic Signal Timing Parameters

Database Date	June 23, 2021		Prepared Date	June 23, 2021
Database Rev	MaxView		Completed By	S.J
Timing Card / Field rev	-		Checked By	B.L

Location	Airport Road at Mayfield Road								
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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	Airport Road - NBLT Prot. Perm.	5	-	-	3.0	-	12	12	12
2	Airport Road - SB	12	12	23	4.0	2.9	43	43	43
3	Mayfield Road - EBLT Prot. Perm.	5	-	-	3.0	-	15	15	25
4	Mayfield Road - WB	12	12	27	4.0	3.1	50	50	55
5	Airport Road - SBLT Prot. Perm.	5	-	-	3.0	-	12	12	12
6	Airport Road - NB	12	12	23	4.0	2.9	43	43	43
7	Not In Use	-	-	-	-	-	-	-	-
8	Mayfield Road - EB	12	12	27	4.0	3.1	65	65	80

<b>System Control</b> Yes <b>Semi-Actuated Mode</b> Yes	<b>TIME (M-F)</b>	<b>PEAK</b>	<b>CYCLE LENGTH (s)</b>	<b>OFFSET (s)</b>
	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	August 26, 2010		Prepared Date	June 18, 2021
Database Rev	3		Completed By	S.J
Timing Card / Field rev	-		Checked By	M.Y

Location	Airport Road at Private Access								
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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	2.0	82	62	82
3	Not In Use	-	-	-	-	-	-	-	-
4	Private Access - WB	12	8	20	4.0	4.2	38	38	38
5	Not In Use	-	-	-	-	-	-	-	-
6	Airport Road - NB	12	8	21	4.6	2.0	82	62	82
7	Not In Use	-	-	-	-	-	-	-	-
8	Computer Phase - EB	12	8	20	4.0	4.2	38	38	38

<b>System Control</b> No <b>Semi-Actuated Mode</b> Yes	<b>TIME (M-F)</b>	<b>PEAK</b>	<b>CYCLE LENGTH (s)</b>	<b>OFFSET (s)</b>
	06:00 - 09:00	AM	120	113
	09:00 - 15:00	OFF	100	77
	15:00 - 19:00	PM	120	58

# REGIONAL MUNICIPALITY OF PEEL

## Traffic Signal Timing Parameters

Database Date	September 28, 2020		Prepared Date	June 18, 2021
Database Rev	11		Completed By	S.J
Timing Card / Field rev	-		Checked By	B.L

Location	Mayfield Road at Torbram Road								
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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	Mayfield Road - WBLT Prot. Perm.	5	-	-	3.0	-	10	10	10
2	Mayfield Road - EB	16	8	35	4.6	2.7	60	40	75
3	Not In Use	-	-	-	-	-	-	-	-
4	Torbram Road - NB	12	8	28	4.2	2.9	50	50	50
5	Mayfield Road - EBLT Prot. Perm.	5	-	-	3.0	-	10	10	10
6	Mayfield Road - WB	16	8	35	4.6	2.7	60	40	75
7	Not In Use	-	-	-	-	-	-	-	-
8	Torbram Road - SB	12	8	28	4.2	2.9	50	50	50

<b>System Control</b> No <b>Semi-Actuated Mode</b> No	<b>TIME (M-F)</b>	<b>PEAK</b>	<b>CYCLE LENGTH (s)</b>	<b>OFFSET (s)</b>
	07:00 - 09:00	AM	120	35
	09:00 - 15:00	OFF	100	0
	15:00 - 18:00	PM	135	43

# Appendix F

## Level of Service Definitions

## Level of Service Definitions

### Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	$\leq 10$	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 $\leq 20$	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 $\leq 35$	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	$> 35$ and $\leq 55$	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 $\leq 80$	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



## Level of Service Definitions

### Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	$\leq 10$	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	$> 10$ and $\leq 15$	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	$> 15$ and $\leq 25$	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	$> 25$ and $\leq 35$	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	$> 35$ and $\leq 50$	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

# Appendix G

## Synchro and Sim Traffic Results

Due to the Site Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Site Plan differs from the naming convention used in this analysis. The internal roads listed as Steet "A", Street "B", and Street "C" in the latest Site Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to **Appendix G**.

















# SYNCHRO REPORTS

Due to the Site Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Site Plan differs from the naming convention used in this analysis. The internal roads listed as Steet "A", Street "B", and Street "C" in the latest Site Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to **Appendix G**.

# HCM Unsignalized Intersection Capacity Analysis
























## 1: Torbram Road & Old School Road

2022 Existing AM  
01/25/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	154	15	16	66	1	5	64	21	4	207	11
Future Volume (vph)	6	154	15	16	66	1	5	64	21	4	207	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	167	16	17	72	1	5	70	23	4	225	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	190	90	98	241								
Volume Left (vph)	7	17	5	4								
Volume Right (vph)	16	1	23	12								
Hadj (s)	0.03	0.04	-0.06	-0.02								
Departure Headway (s)	4.9	5.1	4.9	4.7								
Degree Utilization, x	0.26	0.13	0.13	0.32								
Capacity (veh/h)	685	650	681	716								
Control Delay (s)	9.6	8.8	8.6	9.9								
Approach Delay (s)	9.6	8.8	8.6	9.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			9.4									
Level of Service			A									
Intersection Capacity Utilization			30.4%		ICU Level of Service				A			
Analysis Period (min)			15									













Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2022 Existing AM  
01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1009	189	46	633	9	81	49	38	12	199	30
Future Volume (vph)	36	1009	189	46	633	9	81	49	38	12	199	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4858	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.376			0.220			0.596			0.725		
Satd. Flow (perm)	686	4734	1597	413	4858	0	1120	1942	1587	1362	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			189		2				66			66
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		665.1			1370.8			471.0			3087.9	
Travel Time (s)		29.9			61.7			24.2			158.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	36	1009	189	46	633	9	81	49	38	12	199	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1009	189	46	642	0	81	49	38	12	199	30
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	10.0	60.0	60.0	10.0	60.0		50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%		41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Maximum Green (s)	7.0	52.7	52.7	7.0	52.7		42.9	42.9	42.9	42.9	42.9	42.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	64.0	52.7	52.7	64.0	52.7		42.9	42.9	42.9	42.9	42.9	42.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2022 Existing AM  
01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.53	0.44	0.44	0.53	0.44		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.08	0.49	0.23	0.15	0.30		0.20	0.07	0.06	0.02	0.29	0.05
Control Delay	12.5	25.0	3.6	27.2	40.1		28.5	25.9	2.1	25.3	29.0	0.5
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	12.5	25.0	3.6	27.2	40.1		28.5	25.9	2.1	25.3	29.0	0.5
LOS	B	C	A	C	D		C	C	A	C	C	A
Approach Delay		21.3			39.2			21.8			25.3	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 27.0

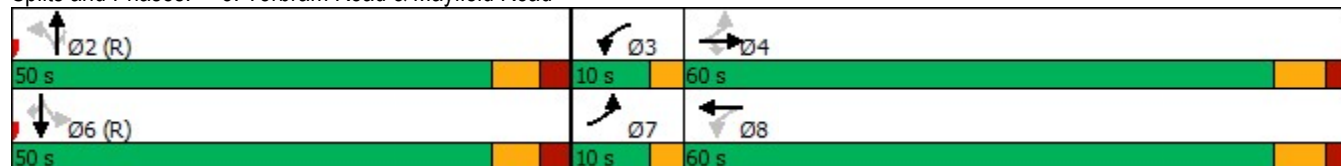
Intersection LOS: C

Intersection Capacity Utilization 65.4%

ICU Level of Service C

Analysis Period (min) 15
























Splits and Phases: 3: Torbram Road & Mayfield Road

















Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2022 Existing AM  
01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	562	291	91	450	36	141	197	79	57	541	132
Future Volume (vph)	206	562	291	91	450	36	141	197	79	57	541	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		0.0	50.0		70.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			48.0			80.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	1.00		1.00					0.98
Frt			0.850		0.989				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	3266	1515	1653	3267	0	1700	3386	1426	1475	3355	1353
Flt Permitted	0.387			0.441			0.321			0.628		
Satd. Flow (perm)	526	3266	1494	767	3267	0	574	3386	1426	975	3355	1333
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			291		8				92			132
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1370.8			111.9			458.9			458.4	
Travel Time (s)		82.2			6.7			27.5			27.5	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	206	562	291	91	450	36	141	197	79	57	541	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	206	562	291	91	486	0	141	197	79	57	541	132
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	10.0	10.0		25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0		15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0		15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6		10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2022 Existing AM  
01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0		5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	46.1	46.1	46.1	46.1		8.0	41.9	41.9	9.0	41.9	41.9
Total Split (s)	15.0	65.0	65.0	50.0	50.0		12.0	43.0	43.0	12.0	43.0	43.0
Total Split (%)	12.5%	54.2%	54.2%	41.7%	41.7%		10.0%	35.8%	35.8%	10.0%	35.8%	35.8%
Maximum Green (s)	12.0	57.9	57.9	42.9	42.9		9.0	36.1	36.1	9.0	36.1	36.1
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	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	7.1	7.1	7.1		3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		12.0	12.0	12.0	12.0			12.0	12.0		12.0	12.0
Flash Dont Walk (s)		27.0	27.0	27.0	27.0			23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0	0	0			0	0		0	0
Act Effct Green (s)	62.0	57.9	57.9	43.4	43.4		50.6	39.5	39.5	47.6	36.5	36.5
Actuated g/C Ratio	0.52	0.48	0.48	0.36	0.36		0.42	0.33	0.33	0.40	0.30	0.30
v/c Ratio	0.60	0.36	0.33	0.33	0.41		0.44	0.18	0.15	0.14	0.53	0.27
Control Delay	24.6	15.9	11.7	32.3	29.6		25.8	30.2	5.3	21.1	37.0	6.7
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	24.6	15.9	11.7	32.3	29.6		25.8	30.2	5.3	21.1	37.0	6.7
LOS	C	B	B	C	C		C	C	A	C	D	A
Approach Delay		16.4			30.1			24.0			30.3	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 24.0

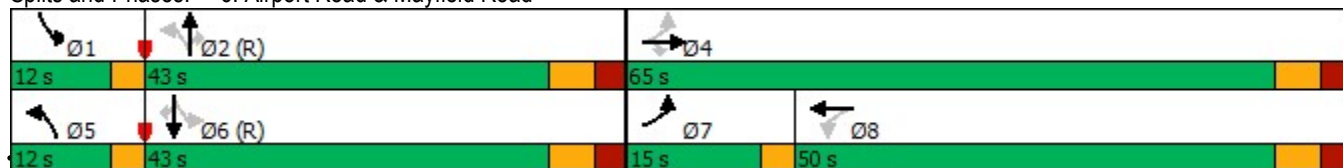
Intersection LOS: C

Intersection Capacity Utilization 100.4%

ICU Level of Service G

Analysis Period (min) 15























Splits and Phases: 6: Airport Road & Mayfield Road



# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2022 Existing AM  
01/25/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	447	83	2	592	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	447	83	2	592	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	447	86	2	592	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	930	1227	297	878	1144	228	596				538	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	930	1227	297	878	1144	228	596				538	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	97	99	95	62	100	98	92				100	
cM capacity (veh/h)	181	164	667	206	184	777	568				615	
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	5	34	78	17	46	224	224	86	2	296	296	3
Volume Left	5	0	78	0	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	181	612	206	777	568	1700	1700	1700	615	1700	1700	1700
Volume to Capacity	0.03	0.06	0.38	0.02	0.08	0.13	0.13	0.05	0.00	0.17	0.17	0.00
Queue Length 95th (m)	0.7	1.4	13.3	0.5	2.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	25.4	11.2	32.7	9.7	11.9	0.0	0.0	0.0	10.9	0.0	0.0	0.0
Lane LOS	D	B	D	A	B				B			
Approach Delay (s)	13.0			28.6			0.9			0.0		
Approach LOS	B			D								
Intersection Summary												
Average Delay				2.9								
Intersection Capacity Utilization				40.7%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2022 Existing AM  
01/25/2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	77	11	363	61	17	520
Future Volume (vph)	77	11	363	61	17	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8
Storage Length (m)	0.0	0.0		145.0	75.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.5				100.0	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1328	1383	3449	992	1116	3101
Flt Permitted	0.950				0.535	
Satd. Flow (perm)	1328	1383	3449	992	628	3101
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		11		61		
Link Speed (k/h)	50		80			80
Link Distance (m)	270.4		438.0			256.3
Travel Time (s)	19.5		19.7			11.5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%
Adj. Flow (vph)	77	11	363	61	17	520
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	11	363	61	17	520
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	4.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2022 Existing AM  
01/25/2023

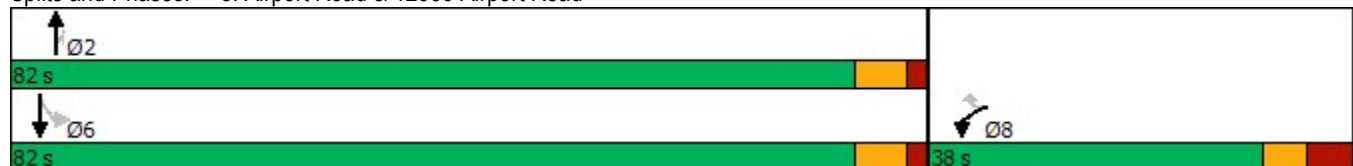
	↖	↗	↑	↘	↙	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
Switch Phase						
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6
Total Split (s)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Maximum Green (s)	29.8	29.8	75.4	75.4	75.4	75.4
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?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	13.2	13.2	86.1	86.1	86.1	86.1
Actuated g/C Ratio	0.12	0.12	0.80	0.80	0.80	0.80
v/c Ratio	0.48	0.06	0.13	0.08	0.03	0.21
Control Delay	54.7	20.7	3.8	1.4	4.4	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	20.7	3.8	1.4	4.4	4.2
LOS	D	C	A	A	A	A
Approach Delay	50.5		3.5			4.2
Approach LOS	D		A			A

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 108.2  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 7.8  
 Intersection Capacity Utilization 36.7%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service A










Splits and Phases: 8: Airport Road & 12333 Airport Road



# HCM Unsignalized Intersection Capacity Analysis

## 9: Airport Road & Healey Road

2022 Existing AM  
01/25/2023











						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	65	84	181	124	155	545
Future Volume (Veh/h)	65	84	181	124	155	545
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	91	197	135	168	592
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1192	264			332	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1192	264			332	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	88			86	
cM capacity (veh/h)	177	774			1239	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	162	332	760			
Volume Left	71	0	168			
Volume Right	91	135	0			
cSH	312	1700	1239			
Volume to Capacity	0.52	0.20	0.14			
Queue Length 95th (m)	22.5	0.0	3.8			
Control Delay (s)	28.3	0.0	3.2			
Lane LOS	D		A			
Approach Delay (s)	28.3	0.0	3.2			
Approach LOS	D					
Intersection Summary						
Average Delay		5.6				
Intersection Capacity Utilization		73.1%		ICU Level of Service		D
Analysis Period (min)		15				



# HCM Unsignalized Intersection Capacity Analysis

## 10: Airport Road & Old School Road

















2022 Existing AM  
01/25/2023

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	165	80	183	536	7
Future Volume (Veh/h)	11	165	80	183	536	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	11	165	80	183	536	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	879	536	543			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	879	536	543			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	96	70	92			
cM capacity (veh/h)	289	545	1036			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	176	263	536	7		
Volume Left	11	80	0	0		
Volume Right	165	0	0	7		
cSH	516	1036	1700	1700		
Volume to Capacity	0.34	0.08	0.32	0.00		
Queue Length 95th (m)	12.0	2.0	0.0	0.0		
Control Delay (s)	15.5	3.2	0.0	0.0		
Lane LOS	C	A				
Approach Delay (s)	15.5	3.2	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization		63.1%		ICU Level of Service		B
Analysis Period (min)		15				

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road





























2022 Existing PM  
01/25/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	72	5	13	251	7	17	185	26	6	56	7
Future Volume (vph)	11	72	5	13	251	7	17	185	26	6	56	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	78	5	14	273	8	18	201	28	7	61	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	95	295	247	76								
Volume Left (vph)	12	14	18	7								
Volume Right (vph)	5	8	28	8								
Hadj (s)	0.08	0.01	0.00	-0.01								
Departure Headway (s)	5.2	4.9	5.0	5.3								
Degree Utilization, x	0.14	0.40	0.34	0.11								
Capacity (veh/h)	622	693	662	613								
Control Delay (s)	9.1	11.1	10.6	8.9								
Approach Delay (s)	9.1	11.1	10.6	8.9								
Approach LOS	A	B	B	A								
Intersection Summary												
Delay				10.5								
Level of Service				B								
Intersection Capacity Utilization				38.1%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2022 Existing PM

01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	41	904	128	102	1036	12	140	114	53	3	50	27
Future Volume (vph)	41	904	128	102	1036	12	140	114	53	3	50	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4857	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.219			0.268			0.724			0.684		
Satd. Flow (perm)	399	4734	1597	504	4857	0	1360	1942	1587	1285	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128		2				59			59
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		665.1			1370.8			471.0			3087.9	
Travel Time (s)		29.9			61.7			24.2			158.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	41	904	128	102	1036	12	140	114	53	3	50	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	904	128	102	1048	0	140	114	53	3	50	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	10.0	75.0	75.0	10.0	75.0		50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	7.4%	55.6%	55.6%	7.4%	55.6%		37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	7.0	67.7	67.7	7.0	67.7		42.9	42.9	42.9	42.9	42.9	42.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	79.0	67.7	67.7	79.0	67.7		42.9	42.9	42.9	42.9	42.9	42.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2022 Existing PM  
01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.59	0.50	0.50	0.59	0.50		0.32	0.32	0.32	0.32	0.32	0.32
v/c Ratio	0.14	0.38	0.15	0.28	0.43		0.32	0.18	0.10	0.01	0.08	0.05
Control Delay	11.8	21.3	3.3	20.3	34.8		37.6	34.4	7.2	31.7	32.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	21.3	3.3	20.3	34.8		37.6	34.4	7.2	31.7	32.8	0.6
LOS	B	C	A	C	C		D	C	A	C	C	A
Approach Delay	18.8			33.5			31.2			21.9		
Approach LOS	B			C			C			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 26.8







Intersection LOS: C

Intersection Capacity Utilization 58.2%

ICU Level of Service B

Analysis Period (min) 15
























Splits and Phases: 3: Torbram Road & Mayfield Road

 Ø2 (R)	 Ø3	 Ø4
50 s	10 s	75 s
 Ø6 (R)	 Ø7	 Ø8
50 s	10 s	75 s

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2022 Existing PM

01/25/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	500	142	98	615	58	243	491	85	77	305	250
Future Volume (vph)	200	500	142	98	615	58	243	491	85	77	305	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		0.0	50.0		70.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			48.0			80.0			65.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	1.00		1.00					0.98
Frt			0.850		0.987				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	3266	1515	1653	3238	0	1700	3386	1426	1475	3355	1353
Flt Permitted	0.288			0.469			0.508			0.361		
Satd. Flow (perm)	392	3266	1493	815	3238	0	907	3386	1426	561	3355	1333
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142		8				85			250
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		1370.8			120.0			458.9			458.4	
Travel Time (s)		82.2			7.2			27.5			27.5	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	200	500	142	98	615	58	243	491	85	77	305	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	500	142	98	673	0	243	491	85	77	305	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	10.0	10.0		25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	0.0	0.0		15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	0.0	0.0		15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6		10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2022 Existing PM  
01/25/2023

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0		5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	46.1	46.1	46.1	46.1		8.0	41.9	41.9	9.0	41.9	41.9
Total Split (s)	25.0	80.0	80.0	55.0	55.0		12.0	43.0	43.0	12.0	43.0	43.0
Total Split (%)	18.5%	59.3%	59.3%	40.7%	40.7%		8.9%	31.9%	31.9%	8.9%	31.9%	31.9%
Maximum Green (s)	22.0	72.9	72.9	47.9	47.9		9.0	36.1	36.1	9.0	36.1	36.1
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	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	7.1	7.1	7.1		3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead			Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		12.0	12.0	12.0	12.0			12.0	12.0		12.0	12.0
Flash Dont Walk (s)		27.0	27.0	27.0	27.0			23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0	0	0			0	0		0	0
Act Effect Green (s)	77.0	72.9	72.9	54.5	54.5		49.9	37.1	37.1	48.0	36.1	36.1
Actuated g/C Ratio	0.57	0.54	0.54	0.40	0.40		0.37	0.27	0.27	0.36	0.27	0.27
v/c Ratio	0.61	0.28	0.16	0.30	0.51		0.63	0.53	0.19	0.30	0.34	0.46
Control Delay	35.1	25.6	15.4	32.0	32.3		40.1	44.3	8.5	30.4	41.1	7.5
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	35.1	25.6	15.4	32.0	32.3		40.1	44.3	8.5	30.4	41.1	7.5
LOS	D	C	B	C	C		D	D	A	C	D	A
Approach Delay		26.1			32.3			39.3			26.5	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 31.3

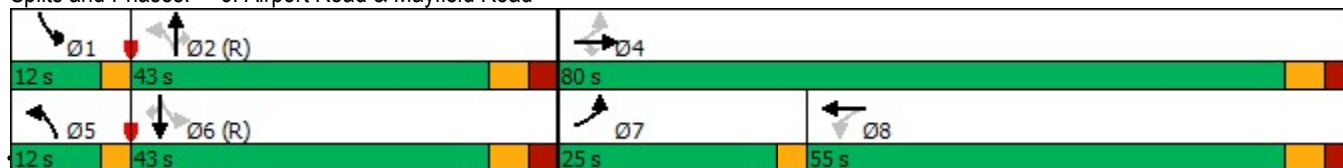
Intersection LOS: C

Intersection Capacity Utilization 106.0%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



























# HCM Unsignalized Intersection Capacity Analysis













## 7: Airport Road & Perdue Court/Davis Lane

2022 Existing PM  
01/25/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	614	90	17	428	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	614	90	17	428	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	614	94	17	428	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	930	1332	215	1100	1244	312	435				713	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	930	1332	215	1100	1244	312	435				713	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	95	99	90	11	100	99	89				97	
cM capacity (veh/h)	175	133	756	127	150	687	692				496	
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	8	77	113	4	78	307	307	94	17	214	214	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	175	713	127	687	692	1700	1700	1700	496	1700	1700	1700
Volume to Capacity	0.05	0.11	0.89	0.01	0.11	0.18	0.18	0.06	0.03	0.13	0.13	0.00
Queue Length 95th (m)	1.1	2.9	45.6	0.1	3.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Control Delay (s)	26.5	10.7	118.2	10.3	10.9	0.0	0.0	0.0	12.5	0.0	0.0	0.0
Lane LOS	D	B	F	B	B				B			
Approach Delay (s)	12.2		114.5		1.1				0.5			
Approach LOS	B		F									
Intersection Summary												
Average Delay	10.8											
Intersection Capacity Utilization	43.2%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2022 Existing PM  
01/25/2023

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	34	5	578	26	2	378
Future Volume (vph)	34	5	578	26	2	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8
Storage Length (m)	0.0	0.0		145.0	75.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	7.5				100.0	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1328	1383	3449	992	1116	3101
Flt Permitted	0.950				0.434	
Satd. Flow (perm)	1328	1383	3449	992	510	3101
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5		26		
Link Speed (k/h)	50		80			80
Link Distance (m)	270.4		438.0			254.9
Travel Time (s)	19.5		19.7			11.5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%
Adj. Flow (vph)	34	5	578	26	2	378
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	5	578	26	2	378
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	4.0		3.5			3.5
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm	Perm	NA

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

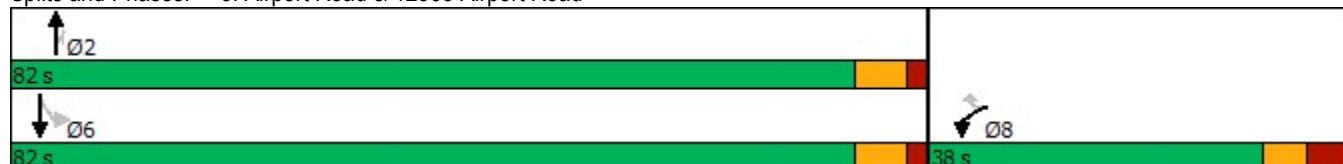
2022 Existing PM  
01/25/2023

	←	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	8		2			6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	6	6
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)	38.0	38.0	82.0	82.0	82.0	82.0
Total Split (%)	31.7%	31.7%	68.3%	68.3%	68.3%	68.3%
Maximum Green (s)	29.8	29.8	75.4	75.4	75.4	75.4
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?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effect Green (s)	12.1	12.1	92.8	92.8	92.8	92.8
Actuated g/C Ratio	0.11	0.11	0.86	0.86	0.86	0.86
v/c Ratio	0.23	0.03	0.19	0.03	0.00	0.14
Control Delay	50.6	28.0	2.8	1.3	3.5	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	28.0	2.8	1.3	3.5	2.7
LOS	D	C	A	A	A	A
Approach Delay	47.7		2.8			2.7
Approach LOS	D		A			A

Intersection Summary

Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 107.9	
Natural Cycle: 75	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.23	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 38.3%	ICU Level of Service A
Analysis Period (min) 15	










Splits and Phases: 8: Airport Road & 12333 Airport Road



# HCM Unsignalized Intersection Capacity Analysis

## 9: Airport Road & Healey Road











2022 Existing PM  
01/25/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	98	235	503	59	71	242
Future Volume (Veh/h)	98	235	503	59	71	242
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	107	255	547	64	77	263
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	996	579			611	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	579			611	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	57	50			92	
cM capacity (veh/h)	248	515			978	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	362	611	340			
Volume Left	107	0	77			
Volume Right	255	64	0			
cSH	390	1700	978			
Volume to Capacity	0.93	0.36	0.08			
Queue Length 95th (m)	80.1	0.0	2.0			
Control Delay (s)	62.1	0.0	2.7			
Lane LOS	F		A			
Approach Delay (s)	62.1	0.0	2.7			
Approach LOS	F					
Intersection Summary						
Average Delay			17.8			
Intersection Capacity Utilization			76.6%	ICU Level of Service	D	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 10: Airport Road & Old School Road






























2022 Existing PM  
01/25/2023

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	74	247	489	237	21
Future Volume (Veh/h)	24	74	247	489	237	21
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)	24	74	247	489	237	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1220	237	258			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1220	237	258			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	85	91	81			
cM capacity (veh/h)	159	802	1318			
Direction, Lane #	EB 1	NB 1	SB 1	SB 2		
Volume Total	98	736	237	21		
Volume Left	24	247	0	0		
Volume Right	74	0	0	21		
cSH	402	1318	1700	1700		
Volume to Capacity	0.24	0.19	0.14	0.01		
Queue Length 95th (m)	7.5	5.5	0.0	0.0		
Control Delay (s)	16.8	4.3	0.0	0.0		
Lane LOS	C	A				
Approach Delay (s)	16.8	4.3	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay				4.4		
Intersection Capacity Utilization				67.8%	ICU Level of Service	C
Analysis Period (min)				15		

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB AM (opt)

01/24/2023













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Future Volume (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.098			0.308			0.274			0.623		
Satd. Flow (perm)	133	4939	1493	536	3630	961	490	3386	1426	967	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			285			145			119			202
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB AM (opt)

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	24.0	57.0	57.0	10.0	43.0	43.0	13.0	44.0	44.0	9.0	40.0	40.0
Total Split (%)	20.0%	47.5%	47.5%	8.3%	35.8%	35.8%	10.8%	36.7%	36.7%	7.5%	33.3%	33.3%
Maximum Green (s)	21.0	49.9	49.9	7.0	35.9	35.9	10.0	37.1	37.1	6.0	33.1	33.1
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	64.0	50.2	50.2	48.5	37.7	37.7	50.0	38.9	38.9	42.9	33.2	33.2
Actuated g/C Ratio	0.53	0.42	0.42	0.40	0.31	0.31	0.42	0.32	0.32	0.36	0.28	0.28
v/c Ratio	0.93	0.43	0.50	0.35	0.84	0.09	0.69	0.19	0.16	0.18	0.62	0.39
Control Delay	94.9	35.6	20.1	19.1	47.0	0.5	37.5	30.5	2.9	23.1	41.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.9	35.6	20.1	19.1	47.0	0.5	37.5	30.5	2.9	23.1	41.3	7.0
LOS	F	D	C	B	D	A	D	C	A	C	D	A
Approach Delay		40.8			42.9			28.6			31.6	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.9

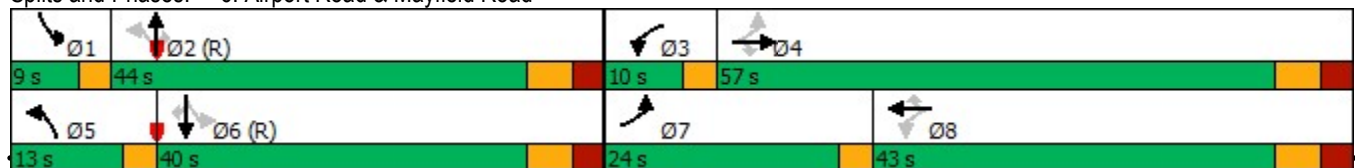
Intersection LOS: D

Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2026 Future Background AM (optimized) 2022-5841 9:00 am 01/01/2026 Baseline

Synchro 11 Report

C.F. Crozier & Associates

















Page 8

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road





























2026 FB AM

01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	167	15	16	72	1	5	72	21	4	244	11
Future Volume (vph)	6	167	15	16	72	1	5	72	21	4	244	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	182	16	17	78	1	5	78	23	4	265	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	205	96	106	281								
Volume Left (vph)	7	17	5	4								
Volume Right (vph)	16	1	23	12								
Hadj (s)	0.03	0.04	-0.05	-0.02								
Departure Headway (s)	5.0	5.2	5.0	4.8								
Degree Utilization, x	0.29	0.14	0.15	0.38								
Capacity (veh/h)	660	623	656	703								
Control Delay (s)	10.1	9.1	8.9	10.7								
Approach Delay (s)	10.1	9.1	8.9	10.7								
Approach LOS	B	A	A	B								
Intersection Summary												
Delay			10.0									
Level of Service			B									
Intersection Capacity Utilization			32.9%	ICU Level of Service					A			
Analysis Period (min)			15									













Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	37	1509	259	181	1380	9	292	55	117	12	216	49
Future Volume (vph)	37	1509	259	181	1380	9	292	55	117	12	216	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.131			0.084			0.582			0.721		
Satd. Flow (perm)	239	4734	1597	158	4861	0	1094	1942	1587	1355	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		1				117			94
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	37	1509	259	181	1380	9	292	55	117	12	216	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1509	259	181	1389	0	292	55	117	12	216	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	52.0	52.0	15.0	59.0		53.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	6.7%	43.3%	43.3%	12.5%	49.2%		44.2%	44.2%	44.2%	44.2%	44.2%	44.2%
Maximum Green (s)	5.0	44.7	44.7	12.0	51.7		45.9	45.9	45.9	45.9	45.9	45.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	54.0	44.7	44.7	64.0	51.7		45.9	45.9	45.9	45.9	45.9	45.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.45	0.37	0.37	0.53	0.43		0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.22	0.86	0.34	0.74	0.66		0.70	0.07	0.17	0.02	0.29	0.08
Control Delay	17.0	40.6	4.4	64.3	14.1		41.8	24.0	4.9	23.4	27.1	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	40.6	4.4	64.3	14.1		41.8	24.0	4.9	23.4	27.1	0.6
LOS	B	D	A	E	B		D	C	A	C	C	A
Approach Delay	34.9			19.9			30.4			22.3		
Approach LOS	C			B			C			C		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 27.8

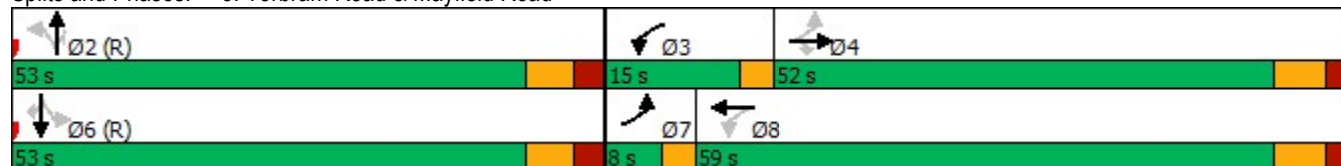
Intersection LOS: C

Intersection Capacity Utilization 88.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

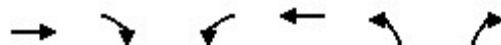
2026 FB AM  
01/24/2023

	→	↘	↙	←	↖	↗		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↖	↗		
Traffic Volume (vph)	1559	110	14	1396	231	35		
Future Volume (vph)	1559	110	14	1396	231	35		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (m)	3.8	3.5	3.5	3.8	3.8	3.8		
Storage Length (m)		55.0	75.0		55.0	0.0		
Storage Lanes		1	1		1	1		
Taper Length (m)			7.5		7.5			
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00		
Frt		0.850				0.850		
Flt Protected			0.950		0.950			
Satd. Flow (prot)	4734	1566	1750	4864	1809	1619		
Flt Permitted			0.082		0.950			
Satd. Flow (perm)	4734	1566	151	4864	1809	1619		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		108				28		
Link Speed (k/h)	80			80	50			
Link Distance (m)	716.7			643.7	353.1			
Travel Time (s)	32.3			29.0	25.4			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%		
Adj. Flow (vph)	1559	110	14	1396	231	35		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	1559	110	14	1396	231	35		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(m)	3.5			3.5	3.8			
Link Offset(m)	0.0			0.0	0.0			
Crosswalk Width(m)	4.8			4.8	4.8			
Two way Left Turn Lane								
Headway Factor	0.97	1.01	1.01	0.97	0.97	0.97		
Turning Speed (k/h)		15	25		25	15		
Number of Detectors	2	1	1	2	1	1		
Detector Template	Thru	Right	Left	Thru	Left	Right		
Leading Detector (m)	10.0	10.0	25.0	10.0	25.0	10.0		
Trailing Detector (m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Position(m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Size(m)	0.6	10.0	10.0	0.6	10.0	10.0		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(m)	9.4			9.4				
Detector 2 Size(m)	0.6			0.6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Perm	NA	Perm	Perm		

# Lanes, Volumes, Timings

## 4: Mayfield Connector & Mayfield Road

2026 FB AM  
01/24/2023

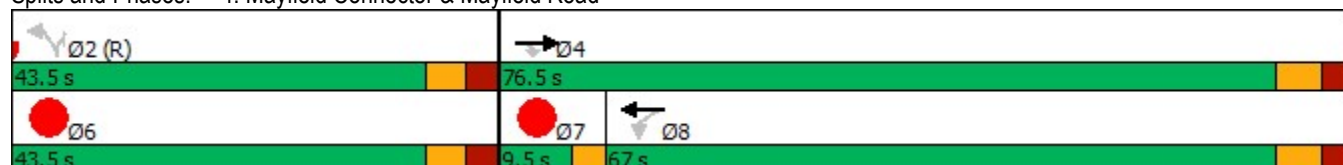


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Protected Phases	4			8			6	7
Permitted Phases		4	8		2	2		
Detector Phase	4	4	8	8	2	2		
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	5.0	5.0
Minimum Split (s)	25.1	25.1	25.1	25.1	24.6	24.6	24.6	9.5
Total Split (s)	76.5	76.5	67.0	67.0	43.5	43.5	43.5	9.5
Total Split (%)	63.8%	63.8%	55.8%	55.8%	36.3%	36.3%	36%	8%
Maximum Green (s)	69.4	69.4	59.9	59.9	36.9	36.9	36.9	6.5
Yellow Time (s)	4.0	4.0	4.0	4.0	3.7	3.7	3.7	3.0
All-Red Time (s)	3.1	3.1	3.1	3.1	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.1	7.1	7.1	7.1	6.6	6.6		
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?			Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	
Act Effct Green (s)	52.5	52.5	52.5	52.5	53.8	53.8		
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.45	0.45		
v/c Ratio	0.75	0.15	0.21	0.66	0.29	0.05		
Control Delay	59.5	24.7	43.1	47.7	23.8	10.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	59.5	24.7	43.1	47.7	23.8	10.1		
LOS	E	C	D	D	C	B		
Approach Delay	57.2			47.7	22.0			
Approach LOS	E			D	C			

### Intersection Summary

Area Type: Other  
Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
Natural Cycle: 60  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.75  
Intersection Signal Delay: 50.4  
Intersection LOS: D  
Intersection Capacity Utilization 54.3%  
ICU Level of Service A  
Analysis Period (min) 15






























### Splits and Phases: 4: Mayfield Connector & Mayfield Road

















Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Future Volume (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.098			0.308			0.265			0.623		
Satd. Flow (perm)	133	4939	1493	536	3630	961	474	3386	1426	967	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			266			117			92			202
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	889	398	98	963	38	211	206	87	66	572	202
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	41.1	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	26.0	67.4	67.4	41.4	41.4	41.4	14.0	43.6	43.6	9.0	38.6	38.6
Total Split (%)	21.7%	56.2%	56.2%	34.5%	34.5%	34.5%	11.7%	36.3%	36.3%	7.5%	32.2%	32.2%
Maximum Green (s)	23.0	60.3	60.3	34.3	34.3	34.3	11.0	36.7	36.7	6.0	31.7	31.7
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0	27.0	27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0		0	0
Act Effect Green (s)	64.4	60.3	60.3	37.7	37.7	37.7	49.6	38.5	38.5	41.7	32.0	32.0
Actuated g/C Ratio	0.54	0.50	0.50	0.31	0.31	0.31	0.41	0.32	0.32	0.35	0.27	0.27
v/c Ratio	0.92	0.36	0.45	0.58	0.85	0.10	0.69	0.19	0.17	0.18	0.64	0.40
Control Delay	90.9	31.0	19.9	52.7	47.4	0.5	37.2	30.8	6.4	23.5	42.9	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.9	31.0	19.9	52.7	47.4	0.5	37.2	30.8	6.4	23.5	42.9	7.3
LOS	F	C	B	D	D	A	D	C	A	C	D	A
Approach Delay		37.4			46.2			29.3			32.8	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 37.8

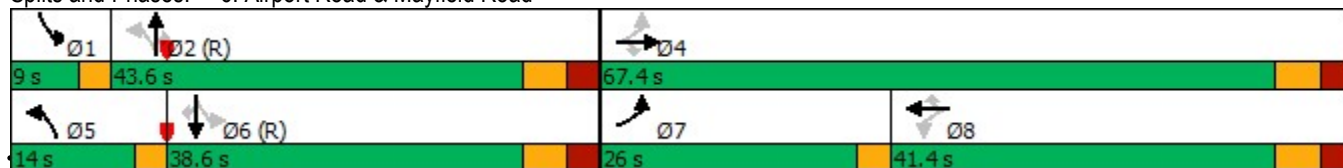
Intersection LOS: D

Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2026 Future Background AM 2022-5841 9:00 am 01/01/2026 Baseline

Synchro 11 Report























C.F. Crozier & Associates

Page 8

# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2026 FB AM  
01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	490	83	2	700	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	490	83	2	700	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	490	86	2	700	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1059	1378	351	974	1295	250	704				581	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1059	1378	351	974	1295	250	704				581	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	97	99	95	55	100	98	91				100	
cM capacity (veh/h)	143	131	614	172	147	753	497				584	
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	5	34	78	17	46	245	245	86	2	350	350	3
Volume Left	5	0	78	0	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	143	554	172	753	497	1700	1700	1700	584	1700	1700	1700
Volume to Capacity	0.03	0.06	0.45	0.02	0.09	0.14	0.14	0.05	0.00	0.21	0.21	0.00
Queue Length 95th (m)	0.9	1.6	16.9	0.6	2.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	31.1	11.9	42.2	9.9	13.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0
Lane LOS	D	B	E	A	B				B			
Approach Delay (s)	14.4	36.4		1.0			0.0					
Approach LOS	B	E										
Intersection Summary												
Average Delay	3.2											
Intersection Capacity Utilization	43.7%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2026 FB AM  
01/24/2023

							Ø4
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	77	11	402	61	17	625	
Future Volume (vph)	77	11	402	61	17	625	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8	
Storage Length (m)	0.0	0.0		145.0	75.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	7.5				100.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1328	1383	3449	992	1116	3101	
Flt Permitted	0.950				0.515		
Satd. Flow (perm)	1328	1383	3449	992	605	3101	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		11		61			
Link Speed (k/h)	50		80			80	
Link Distance (m)	270.4		438.0			348.1	
Travel Time (s)	19.5		19.7			15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%	
Adj. Flow (vph)	77	11	402	61	17	625	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	77	11	402	61	17	625	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	4.0		3.5			3.5	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1	1	2	1	1	2	
Detector Template	Left	Right	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2026 FB AM  
01/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Protected Phases			2			6	4
Permitted Phases	8	8		2	6		
Detector Phase	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
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6	36.2
Total Split (s)	50.0	50.0	70.0	70.0	70.0	70.0	50.0
Total Split (%)	41.7%	41.7%	58.3%	58.3%	58.3%	58.3%	42%
Maximum Green (s)	41.8	41.8	63.4	63.4	63.4	63.4	41.8
Yellow Time (s)	4.0	4.0	4.6	4.6	4.6	4.6	4.0
All-Red Time (s)	4.2	4.2	2.0	2.0	2.0	2.0	4.2
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?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0	20.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	12.7	12.7	74.1	74.1	74.1	74.1	
Actuated g/C Ratio	0.13	0.13	0.77	0.77	0.77	0.77	
v/c Ratio	0.44	0.06	0.15	0.08	0.04	0.26	
Control Delay	46.7	18.4	4.2	1.5	4.7	4.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	46.7	18.4	4.2	1.5	4.7	4.7	
LOS	D	B	A	A	A	A	
Approach Delay	43.2		3.9			4.7	
Approach LOS	D		A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 95.7

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 7.2

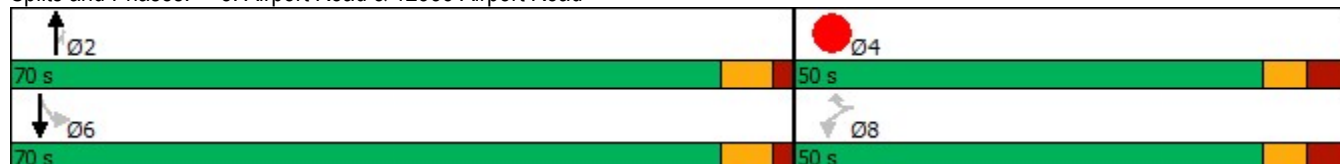
Intersection LOS: A

Intersection Capacity Utilization 39.6%

ICU Level of Service A

Analysis Period (min) 15






























Splits and Phases: 8: Airport Road & 12333 Airport Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB PM (opt)

01/24/2023













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Future Volume (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.100			0.297			0.427			0.402		
Satd. Flow (perm)	136	4939	1493	516	3630	961	762	3386	1426	624	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			128			106			296
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB PM (opt)

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	37.0	64.4	64.4	14.6	42.0	42.0	17.0	45.0	45.0	11.0	39.0	39.0
Total Split (%)	27.4%	47.7%	47.7%	10.8%	31.1%	31.1%	12.6%	33.3%	33.3%	8.1%	28.9%	28.9%
Maximum Green (s)	34.0	57.3	57.3	11.6	34.9	34.9	14.0	38.1	38.1	8.0	32.1	32.1
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	76.0	60.0	60.0	50.0	37.0	37.0	53.0	38.4	38.4	43.7	32.1	32.1
Actuated g/C Ratio	0.56	0.44	0.44	0.37	0.27	0.27	0.39	0.28	0.28	0.32	0.24	0.24
v/c Ratio	0.97	0.42	0.25	0.43	0.93	0.17	0.84	0.54	0.20	0.40	0.43	0.55
Control Delay	113.5	14.6	2.7	22.6	63.7	1.0	52.9	43.4	6.0	33.0	45.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.5	14.6	2.7	22.6	63.7	1.0	52.9	43.4	6.0	33.0	45.7	8.6
LOS	F	B	A	C	E	A	D	D	A	C	D	A
Approach Delay		36.1			56.0			43.0			29.2	
Approach LOS		D			E			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 41.6

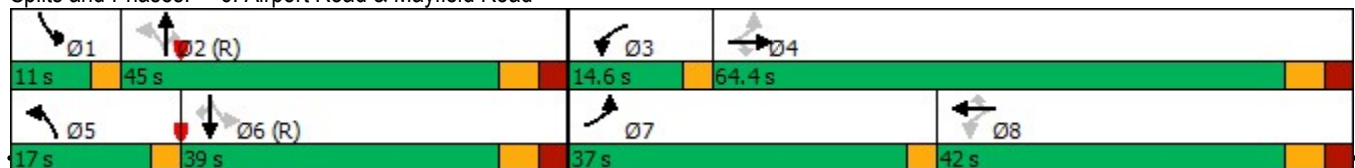
Intersection LOS: D

Intersection Capacity Utilization 108.8%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2026 Future Background PM (Optimized) 2022-5841 4:00 pm 01/01/2026 Baseline

Synchro 11 Report

C.F. Crozier & Associates

















Page 8

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2026 FB PM





























01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	78	5	13	272	7	17	201	26	6	61	7
Future Volume (vph)	11	78	5	13	272	7	17	201	26	6	61	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	85	5	14	296	8	18	218	28	7	66	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	102	318	264	81								
Volume Left (vph)	12	14	18	7								
Volume Right (vph)	5	8	28	8								
Hadj (s)	0.08	0.01	0.00	-0.01								
Departure Headway (s)	5.4	5.0	5.1	5.4								
Degree Utilization, x	0.15	0.44	0.38	0.12								
Capacity (veh/h)	605	681	649	593								
Control Delay (s)	9.4	11.9	11.2	9.2								
Approach Delay (s)	9.4	11.9	11.2	9.2								
Approach LOS	A	B	B	A								
Intersection Summary												
Delay				11.1								
Level of Service				B								
Intersection Capacity Utilization				40.4%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FB PM













01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	41	1599	243	157	1502	12	305	124	160	3	55	27
Future Volume (vph)	41	1599	243	157	1502	12	305	124	160	3	55	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.121			0.068			0.721			0.677		
Satd. Flow (perm)	221	4734	1597	128	4861	0	1355	1942	1587	1272	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		1				160			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	41	1599	243	157	1502	12	305	124	160	3	55	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	1599	243	157	1514	0	305	124	160	3	55	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	63.0	63.0	18.0	73.0		54.0	54.0	54.0	54.0	54.0	54.0
Total Split (%)	5.9%	46.7%	46.7%	13.3%	54.1%		40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	5.0	55.7	55.7	15.0	65.7		46.9	46.9	46.9	46.9	46.9	46.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	65.0	55.7	55.7	78.0	65.7		46.9	46.9	46.9	46.9	46.9	46.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FB PM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.48	0.41	0.41	0.58	0.49		0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.25	0.82	0.30	0.61	0.64		0.65	0.18	0.24	0.01	0.08	0.05
Control Delay	17.0	39.5	3.9	66.0	7.6		44.8	31.7	5.3	29.0	30.1	0.1
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	17.0	39.5	3.9	66.0	7.6		44.8	31.7	5.3	29.0	30.1	0.1
LOS	B	D	A	E	A		D	C	A	C	C	A
Approach Delay	34.4			13.1			31.3			20.6		
Approach LOS	C			B			C			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 25.3

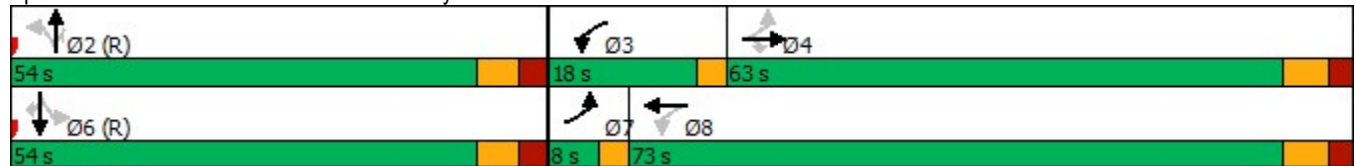
Intersection LOS: C

Intersection Capacity Utilization 78.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2026 FB PM  
01/24/2023

	→	↘	↙	←	↖	↗		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↖	↗		
Traffic Volume (vph)	1667	98	41	1544	104	23		
Future Volume (vph)	1667	98	41	1544	104	23		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (m)	3.8	3.5	3.5	3.8	3.8	3.8		
Storage Length (m)		55.0	75.0		55.0	0.0		
Storage Lanes		1	1		1	1		
Taper Length (m)			7.5		7.5			
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00		
Frt		0.850				0.850		
Flt Protected			0.950		0.950			
Satd. Flow (prot)	4734	1566	1750	4864	1809	1619		
Flt Permitted			0.079		0.950			
Satd. Flow (perm)	4734	1566	146	4864	1809	1619		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		98				23		
Link Speed (k/h)	80			80	50			
Link Distance (m)	716.7			643.7	353.1			
Travel Time (s)	32.3			29.0	25.4			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%		
Adj. Flow (vph)	1667	98	41	1544	104	23		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	1667	98	41	1544	104	23		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(m)	3.5			3.5	3.8			
Link Offset(m)	0.0			0.0	0.0			
Crosswalk Width(m)	4.8			4.8	4.8			
Two way Left Turn Lane								
Headway Factor	0.97	1.01	1.01	0.97	0.97	0.97		
Turning Speed (k/h)		15	25		25	15		
Number of Detectors	2	1	1	2	1	1		
Detector Template	Thru	Right	Left	Thru	Left	Right		
Leading Detector (m)	10.0	10.0	25.0	10.0	25.0	10.0		
Trailing Detector (m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Position(m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Size(m)	0.6	10.0	10.0	0.6	10.0	10.0		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(m)	9.4			9.4				
Detector 2 Size(m)	0.6			0.6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Perm	NA	Perm	Perm		

# Lanes, Volumes, Timings

## 4: Mayfield Connector & Mayfield Road

2026 FB PM  
01/24/2023

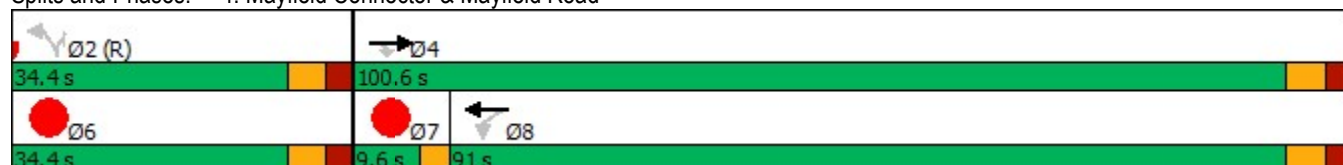


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Protected Phases	4			8			6	7
Permitted Phases		4	8		2	2		
Detector Phase	4	4	8	8	2	2		
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	5.0	5.0
Minimum Split (s)	25.1	25.1	25.1	25.1	24.6	24.6	24.6	9.5
Total Split (s)	100.6	100.6	91.0	91.0	34.4	34.4	34.4	9.6
Total Split (%)	74.5%	74.5%	67.4%	67.4%	25.5%	25.5%	25%	7%
Maximum Green (s)	93.5	93.5	83.9	83.9	27.8	27.8	27.8	6.6
Yellow Time (s)	4.0	4.0	4.0	4.0	3.7	3.7	3.7	3.0
All-Red Time (s)	3.1	3.1	3.1	3.1	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.1	7.1	7.1	7.1	6.6	6.6		
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?			Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	
Act Effect Green (s)	66.9	66.9	66.9	66.9	54.4	54.4		
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.40	0.40		
v/c Ratio	0.71	0.12	0.57	0.64	0.14	0.03		
Control Delay	58.2	21.8	67.2	48.9	28.9	11.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	58.2	21.8	67.2	48.9	28.9	11.3		
LOS	E	C	E	D	C	B		
Approach Delay	56.1			49.4	25.7			
Approach LOS	E			D	C			

### Intersection Summary






























Area Type: Other  
Cycle Length: 135  
Actuated Cycle Length: 135  
Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
Natural Cycle: 65  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.71  
Intersection Signal Delay: 52.0  
Intersection LOS: D  
Intersection Capacity Utilization 55.5%  
ICU Level of Service B  
Analysis Period (min) 15

### Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB PM  
01/24/2023













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Future Volume (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.100			0.297			0.427			0.402		
Satd. Flow (perm)	136	4939	1493	516	3630	961	762	3386	1426	624	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			104			94			296
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	922	190	114	923	61	333	519	94	101	344	296
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FB PM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	41.1	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	37.0	79.0	79.0	42.0	42.0	42.0	17.0	45.0	45.0	11.0	39.0	39.0
Total Split (%)	27.4%	58.5%	58.5%	31.1%	31.1%	31.1%	12.6%	33.3%	33.3%	8.1%	28.9%	28.9%
Maximum Green (s)	34.0	71.9	71.9	34.9	34.9	34.9	14.0	38.1	38.1	8.0	32.1	32.1
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0	27.0	27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0		0	0
Act Effect Green (s)	76.0	71.9	71.9	37.0	37.0	37.0	53.0	38.4	38.4	43.7	32.1	32.1
Actuated g/C Ratio	0.56	0.53	0.53	0.27	0.27	0.27	0.39	0.28	0.28	0.32	0.24	0.24
v/c Ratio	0.97	0.35	0.22	0.81	0.93	0.18	0.84	0.54	0.20	0.40	0.43	0.55
Control Delay	113.5	11.7	2.6	85.9	63.7	2.3	52.9	43.4	7.9	33.0	45.7	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	113.5	11.7	2.6	85.9	63.7	2.3	52.9	43.4	7.9	33.0	45.7	8.6
LOS	F	B	A	F	E	A	D	D	A	C	D	A
Approach Delay		34.2			62.6			43.2			29.2	
Approach LOS		C			E			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 42.7

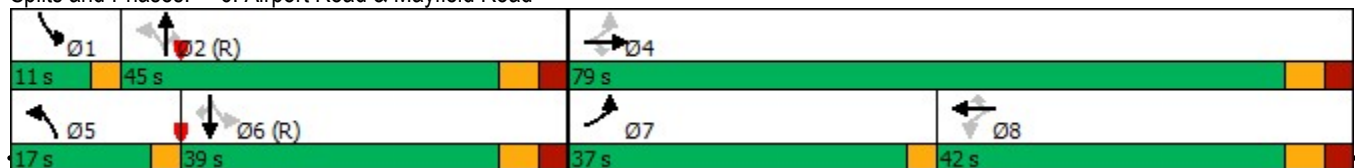
Intersection LOS: D

Intersection Capacity Utilization 108.8%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2026 Future Background PM 2022-5841 4:00 pm 01/01/2026 Baseline

Synchro 11 Report























C.F. Crozier & Associates

Page 8

# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2026 FB PM  
01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	791	90	17	470	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	791	90	17	470	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	791	94	17	470	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1060	1551	236	1298	1463	400	477				890	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1060	1551	236	1298	1463	400	477				890	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	94	99	90	0	100	99	88				96	
cM capacity (veh/h)	138	96	732	89	109	602	658				399	
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	8	77	113	4	78	396	396	94	17	235	235	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	138	675	89	602	658	1700	1700	1700	399	1700	1700	1700
Volume to Capacity	0.06	0.11	1.27	0.01	0.12	0.23	0.23	0.06	0.04	0.14	0.14	0.00
Queue Length 95th (m)	1.5	3.1	65.6	0.2	3.2	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Control Delay (s)	32.8	11.0	271.9	11.0	11.2	0.0	0.0	0.0	14.4	0.0	0.0	0.0
Lane LOS	D	B	F	B	B				B			
Approach Delay (s)	13.1		263.0		0.9				0.5			
Approach LOS	B		F									
Intersection Summary												
Average Delay	19.9											
Intersection Capacity Utilization	48.1%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2026 FB PM  
01/24/2023

							Ø4
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	34	5	754	26	2	418	
Future Volume (vph)	34	5	754	26	2	418	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8	
Storage Length (m)	0.0	0.0		145.0	75.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	7.5				100.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1328	1383	3449	992	1116	3101	
Flt Permitted	0.950				0.366		
Satd. Flow (perm)	1328	1383	3449	992	430	3101	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		5		26			
Link Speed (k/h)	50		80			80	
Link Distance (m)	270.4		438.0			348.1	
Travel Time (s)	19.5		19.7			15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%	
Adj. Flow (vph)	34	5	754	26	2	418	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	34	5	754	26	2	418	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	4.0		3.5			3.5	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1	1	2	1	1	2	
Detector Template	Left	Right	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2026 FB PM  
01/24/2023



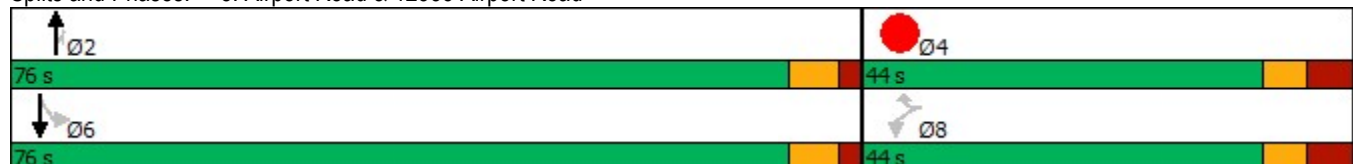
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Protected Phases			2			6	4
Permitted Phases	8	8		2	6		
Detector Phase	8	8	2	2	6	6	
Switch Phase							
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6	36.2
Total Split (s)	44.0	44.0	76.0	76.0	76.0	76.0	44.0
Total Split (%)	36.7%	36.7%	63.3%	63.3%	63.3%	63.3%	37%
Maximum Green (s)	35.8	35.8	69.4	69.4	69.4	69.4	35.8
Yellow Time (s)	4.0	4.0	4.6	4.6	4.6	4.6	4.0
All-Red Time (s)	4.2	4.2	2.0	2.0	2.0	2.0	4.2
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?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0	20.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effect Green (s)	12.1	12.1	86.9	86.9	86.9	86.9	
Actuated g/C Ratio	0.12	0.12	0.85	0.85	0.85	0.85	
v/c Ratio	0.22	0.03	0.26	0.03	0.01	0.16	
Control Delay	47.1	26.4	3.2	1.4	3.5	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.1	26.4	3.2	1.4	3.5	2.9	
LOS	D	C	A	A	A	A	
Approach Delay	44.4		3.1			2.9	
Approach LOS	D		A			A	

Intersection Summary

Area Type: Other  
Cycle Length: 120  
Actuated Cycle Length: 101.9  
Natural Cycle: 75  
Control Type: Semi Act-Uncoord  
Maximum v/c Ratio: 0.26  
Intersection Signal Delay: 4.4  
Intersection Capacity Utilization 43.2%  
Analysis Period (min) 15

Intersection LOS: A  
ICU Level of Service A

Splits and Phases: 8: Airport Road & 12333 Airport Road



















# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road





























2031 FB AM

01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	185	15	16	79	1	5	79	21	4	267	11
Future Volume (vph)	6	185	15	16	79	1	5	79	21	4	267	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	201	16	17	86	1	5	86	23	4	290	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	224	104	114	306								
Volume Left (vph)	7	17	5	4								
Volume Right (vph)	16	1	23	12								
Hadj (s)	0.03	0.04	-0.05	-0.02								
Departure Headway (s)	5.2	5.4	5.2	5.0								
Degree Utilization, x	0.32	0.16	0.16	0.42								
Capacity (veh/h)	643	601	632	688								
Control Delay (s)	10.7	9.4	9.2	11.5								
Approach Delay (s)	10.7	9.4	9.2	11.5								
Approach LOS	B	A	A	B								
Intersection Summary												
Delay				10.6								
Level of Service				B								
Intersection Capacity Utilization				34.8%	ICU Level of Service	A						
Analysis Period (min)				15								













Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2031 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	37	1848	259	181	1592	9	292	60	117	12	238	49
Future Volume (vph)	37	1848	259	181	1592	9	292	60	117	12	238	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.087			0.074			0.545			0.718		
Satd. Flow (perm)	159	4734	1597	139	4861	0	1024	1942	1587	1349	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		1				117			94
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	37	1848	259	181	1592	9	292	60	117	12	238	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1848	259	181	1601	0	292	60	117	12	238	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	58.0	58.0	12.0	62.0		50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	6.7%	48.3%	48.3%	10.0%	51.7%		41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Maximum Green (s)	5.0	50.7	50.7	9.0	54.7		42.9	42.9	42.9	42.9	42.9	42.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	60.0	50.7	50.7	67.0	54.7		42.9	42.9	42.9	42.9	42.9	42.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2031 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.50	0.42	0.42	0.56	0.46		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.26	0.92	0.31	0.90	0.72		0.80	0.09	0.18	0.02	0.34	0.08
Control Delay	16.6	41.9	3.6	79.4	24.5		52.5	26.1	5.4	25.3	30.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	41.9	3.6	79.4	24.5		52.5	26.1	5.4	25.3	30.0	0.7
LOS	B	D	A	E	C		D	C	A	C	C	A
Approach Delay	36.8			30.1			37.3			25.0		
Approach LOS	D			C			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 33.6

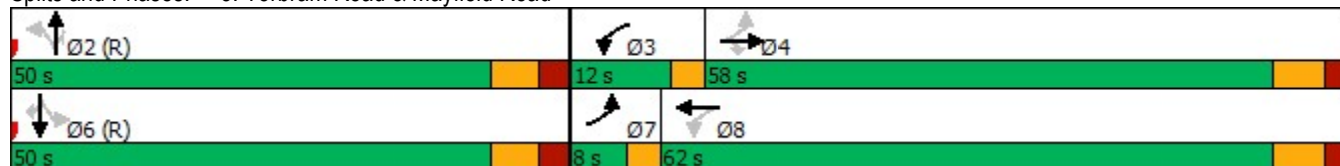
Intersection LOS: C

Intersection Capacity Utilization 95.7%

ICU Level of Service F

Analysis Period (min) 15


Splits and Phases: 3: Torbram Road & Mayfield Road





Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2031 FB AM  
01/24/2023

							Ø6	Ø7
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑		
Traffic Volume (vph)	1914	110	14	1639	231	35		
Future Volume (vph)	1914	110	14	1639	231	35		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (m)	3.8	3.5	3.5	3.8	3.8	3.8		
Storage Length (m)		55.0	75.0		55.0	0.0		
Storage Lanes		1	1		1	1		
Taper Length (m)			7.5		7.5			
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00		
Frt		0.850				0.850		
Flt Protected			0.950		0.950			
Satd. Flow (prot)	4734	1566	1750	4864	1809	1619		
Flt Permitted			0.062		0.950			
Satd. Flow (perm)	4734	1566	114	4864	1809	1619		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		94				15		
Link Speed (k/h)	80			80	50			
Link Distance (m)	716.7			643.7	353.1			
Travel Time (s)	32.3			29.0	25.4			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%		
Adj. Flow (vph)	1914	110	14	1639	231	35		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	1914	110	14	1639	231	35		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(m)	3.5			3.5	3.8			
Link Offset(m)	0.0			0.0	0.0			
Crosswalk Width(m)	4.8			4.8	4.8			
Two way Left Turn Lane								
Headway Factor	0.97	1.01	1.01	0.97	0.97	0.97		
Turning Speed (k/h)		15	25		25	15		
Number of Detectors	2	1	1	2	1	1		
Detector Template	Thru	Right	Left	Thru	Left	Right		
Leading Detector (m)	10.0	10.0	25.0	10.0	25.0	10.0		
Trailing Detector (m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Position(m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Size(m)	0.6	10.0	10.0	0.6	10.0	10.0		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(m)	9.4			9.4				
Detector 2 Size(m)	0.6			0.6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Perm	NA	Perm	Perm		

Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

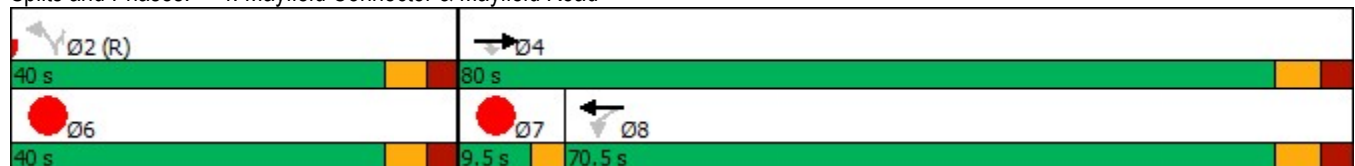
2031 FB AM  
01/24/2023

	→	↘	↙	←	↖	↗		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Protected Phases	4			8			6	7
Permitted Phases		4	8		2	2		
Detector Phase	4	4	8	8	2	2		
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	5.0	5.0
Minimum Split (s)	25.1	25.1	25.1	25.1	24.6	24.6	24.6	9.5
Total Split (s)	80.0	80.0	70.5	70.5	40.0	40.0	40.0	9.5
Total Split (%)	66.7%	66.7%	58.8%	58.8%	33.3%	33.3%	33%	8%
Maximum Green (s)	72.9	72.9	63.4	63.4	33.4	33.4	33.4	6.5
Yellow Time (s)	4.0	4.0	4.0	4.0	3.7	3.7	3.7	3.0
All-Red Time (s)	3.1	3.1	3.1	3.1	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.1	7.1	7.1	7.1	6.6	6.6		
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?			Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	
Act Effct Green (s)	64.1	64.1	64.1	64.1	42.2	42.2		
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.35	0.35		
v/c Ratio	0.76	0.13	0.23	0.63	0.36	0.06		
Control Delay	44.0	15.6	28.6	29.9	32.7	20.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	44.0	15.6	28.6	29.9	32.7	20.0		
LOS	D	B	C	C	C	B		
Approach Delay	42.5			29.9	31.0			
Approach LOS	D			C	C			

Intersection Summary

Area Type: Other  
Cycle Length: 120  
Actuated Cycle Length: 120  
Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
Natural Cycle: 65  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.76  
Intersection Signal Delay: 36.4  
Intersection LOS: D  
Intersection Capacity Utilization 61.2%  
ICU Level of Service B  
Analysis Period (min) 15

























Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2031 FB AM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	1077	414	103	1115	40	219	217	91	69	601	209
Future Volume (vph)	249	1077	414	103	1115	40	219	217	91	69	601	209
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.118			0.248			0.240			0.616		
Satd. Flow (perm)	161	4939	1493	431	5216	961	429	3386	1426	957	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			332			145			119			209
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	249	1077	414	103	1115	40	219	217	91	69	601	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	1077	414	103	1115	40	219	217	91	69	601	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2031 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	26.0	52.9	52.9	14.2	41.1	41.1	15.0	43.9	43.9	9.0	37.9	37.9
Total Split (%)	21.7%	44.1%	44.1%	11.8%	34.3%	34.3%	12.5%	36.6%	36.6%	7.5%	31.6%	31.6%
Maximum Green (s)	23.0	45.8	45.8	11.2	34.0	34.0	12.0	37.0	37.0	6.0	31.0	31.0
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	64.1	48.7	48.7	49.1	36.6	36.6	49.9	38.8	38.8	41.1	31.4	31.4
Actuated g/C Ratio	0.53	0.41	0.41	0.41	0.30	0.30	0.42	0.32	0.32	0.34	0.26	0.26
v/c Ratio	0.90	0.54	0.52	0.39	0.70	0.10	0.73	0.20	0.17	0.20	0.69	0.42
Control Delay	78.0	36.4	16.4	20.0	40.3	0.5	39.4	30.6	3.2	23.7	44.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.0	36.4	16.4	20.0	40.3	0.5	39.4	30.6	3.2	23.7	44.7	7.4
LOS	E	D	B	C	D	A	D	C	A	C	D	A
Approach Delay		37.6			37.3			29.5			34.2	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 35.9

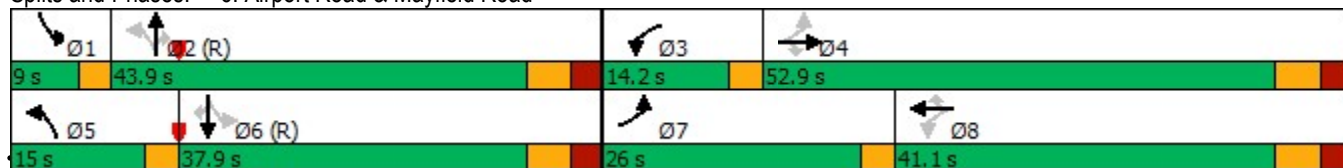
Intersection LOS: D

Intersection Capacity Utilization 97.6%

ICU Level of Service F

Analysis Period (min) 15























Splits and Phases: 6: Airport Road & Mayfield Road



# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2031 FB AM  
01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	513	83	2	731	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	513	83	2	731	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	513	86	2	731	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1102	1432	366	1013	1349	262	735				604	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1102	1432	366	1013	1349	262	735				604	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	96	99	94	51	100	98	90				100	
cM capacity (veh/h)	132	121	599	160	136	740	479				567	
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	5	34	78	17	46	256	256	86	2	366	366	3
Volume Left	5	0	78	0	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	132	537	160	740	479	1700	1700	1700	567	1700	1700	1700
Volume to Capacity	0.04	0.06	0.49	0.02	0.10	0.15	0.15	0.05	0.00	0.21	0.21	0.00
Queue Length 95th (m)	0.9	1.6	18.6	0.6	2.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	33.3	12.2	47.1	10.0	13.3	0.0	0.0	0.0	11.4	0.0	0.0	0.0
Lane LOS	D	B	E	A	B				B			
Approach Delay (s)	14.9	40.4		0.9					0.0			
Approach LOS	B	E										
Intersection Summary												
Average Delay	3.3											
Intersection Capacity Utilization	44.5%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2031 FB AM  
01/24/2023

							Ø4
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	77	11	422	61	17	652	
Future Volume (vph)	77	11	422	61	17	652	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8	
Storage Length (m)	0.0	0.0		145.0	75.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	7.5				100.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1328	1383	3449	992	1116	3101	
Flt Permitted	0.950				0.506		
Satd. Flow (perm)	1328	1383	3449	992	594	3101	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		11		61			
Link Speed (k/h)	50		80			80	
Link Distance (m)	270.4		438.0			348.1	
Travel Time (s)	19.5		19.7			15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%	
Adj. Flow (vph)	77	11	422	61	17	652	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	77	11	422	61	17	652	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	4.0		3.5			3.5	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1	1	2	1	1	2	
Detector Template	Left	Right	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2031 FB AM  
01/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Protected Phases			2			6	4
Permitted Phases	8	8		2	6		
Detector Phase	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
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6	36.2
Total Split (s)	49.0	49.0	71.0	71.0	71.0	71.0	49.0
Total Split (%)	40.8%	40.8%	59.2%	59.2%	59.2%	59.2%	41%
Maximum Green (s)	40.8	40.8	64.4	64.4	64.4	64.4	40.8
Yellow Time (s)	4.0	4.0	4.6	4.6	4.6	4.6	4.0
All-Red Time (s)	4.2	4.2	2.0	2.0	2.0	2.0	4.2
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?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0	20.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effect Green (s)	12.8	12.8	75.2	75.2	75.2	75.2	
Actuated g/C Ratio	0.13	0.13	0.78	0.78	0.78	0.78	
v/c Ratio	0.44	0.06	0.16	0.08	0.04	0.27	
Control Delay	47.4	18.5	4.2	1.5	4.6	4.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.4	18.5	4.2	1.5	4.6	4.8	
LOS	D	B	A	A	A	A	
Approach Delay	43.8		3.9			4.8	
Approach LOS	D		A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 96.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 7.2

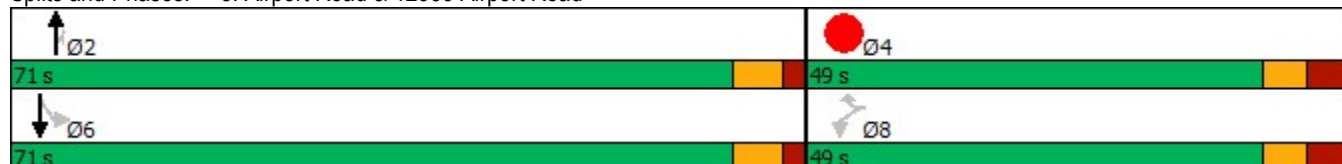
Intersection LOS: A

Intersection Capacity Utilization 40.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Airport Road & 12333 Airport Road





















# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road





























2031 FB PM

01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	87	5	13	300	7	17	222	26	6	67	7
Future Volume (vph)	11	87	5	13	300	7	17	222	26	6	67	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	95	5	14	326	8	18	241	28	7	73	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	112	348	287	88								
Volume Left (vph)	12	14	18	7								
Volume Right (vph)	5	8	28	8								
Hadj (s)	0.08	0.01	0.00	0.00								
Departure Headway (s)	5.6	5.1	5.3	5.6								
Degree Utilization, x	0.17	0.50	0.42	0.14								
Capacity (veh/h)	581	662	629	564								
Control Delay (s)	9.8	13.1	12.1	9.5								
Approach Delay (s)	9.8	13.1	12.1	9.5								
Approach LOS	A	B	B	A								
Intersection Summary												
Delay				12.0								
Level of Service				B								
Intersection Capacity Utilization				43.3%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2031 FB PM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	41	1903	243	157	1850	12	305	137	160	3	60	27
Future Volume (vph)	41	1903	243	157	1850	12	305	137	160	3	60	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.068			0.061			0.718			0.660		
Satd. Flow (perm)	124	4734	1597	115	4861	0	1349	1942	1587	1240	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		1				153			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	41	1903	243	157	1850	12	305	137	160	3	60	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	1903	243	157	1862	0	305	137	160	3	60	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	70.0	70.0	16.0	78.0		49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	5.9%	51.9%	51.9%	11.9%	57.8%		36.3%	36.3%	36.3%	36.3%	36.3%	36.3%
Maximum Green (s)	5.0	62.7	62.7	13.0	70.7		41.9	41.9	41.9	41.9	41.9	41.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	72.0	62.7	62.7	83.0	70.7		41.9	41.9	41.9	41.9	41.9	41.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2031 FB PM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.53	0.46	0.46	0.61	0.52		0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.33	0.87	0.28	0.68	0.73		0.73	0.23	0.27	0.01	0.10	0.05
Control Delay	18.2	37.6	3.3	65.8	13.9		53.2	35.8	7.0	32.3	33.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	37.6	3.3	65.8	13.9		53.2	35.8	7.0	32.3	33.8	0.2
LOS	B	D	A	E	B		D	D	A	C	C	A
Approach Delay	33.5			17.9			37.0			23.7		
Approach LOS	C			B			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.3

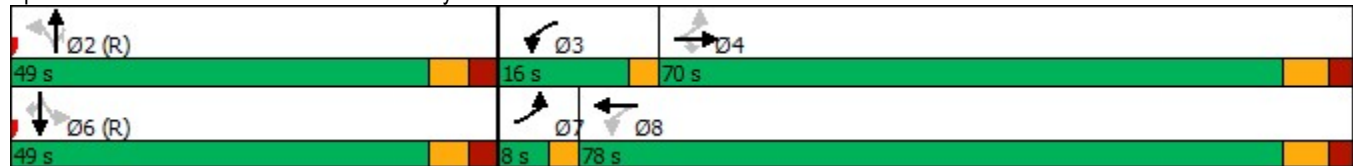
Intersection LOS: C

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2031 FB PM  
01/24/2023

	→	↘	↙	←	↖	↗		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Lane Configurations	↑↑↑	↗	↙	↑↑↑	↖	↗		
Traffic Volume (vph)	1990	98	41	1916	104	23		
Future Volume (vph)	1990	98	41	1916	104	23		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (m)	3.8	3.5	3.5	3.8	3.8	3.8		
Storage Length (m)		55.0	75.0		55.0	0.0		
Storage Lanes		1	1		1	1		
Taper Length (m)			7.5		7.5			
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00		
Frt		0.850				0.850		
Flt Protected			0.950		0.950			
Satd. Flow (prot)	4734	1566	1750	4864	1809	1619		
Flt Permitted			0.062		0.950			
Satd. Flow (perm)	4734	1566	114	4864	1809	1619		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		98				23		
Link Speed (k/h)	80			80	50			
Link Distance (m)	716.7			643.7	353.1			
Travel Time (s)	32.3			29.0	25.4			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%		
Adj. Flow (vph)	1990	98	41	1916	104	23		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	1990	98	41	1916	104	23		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(m)	3.5			3.5	3.8			
Link Offset(m)	0.0			0.0	0.0			
Crosswalk Width(m)	4.8			4.8	4.8			
Two way Left Turn Lane								
Headway Factor	0.97	1.01	1.01	0.97	0.97	0.97		
Turning Speed (k/h)		15	25		25	15		
Number of Detectors	2	1	1	2	1	1		
Detector Template	Thru	Right	Left	Thru	Left	Right		
Leading Detector (m)	10.0	10.0	25.0	10.0	25.0	10.0		
Trailing Detector (m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Position(m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Size(m)	0.6	10.0	10.0	0.6	10.0	10.0		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(m)	9.4			9.4				
Detector 2 Size(m)	0.6			0.6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Perm	NA	Perm	Perm		

Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2031 FB PM  
01/24/2023

	→	↘	↙	←	↖	↗		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Protected Phases	4			8			6	7
Permitted Phases		4	8		2	2		
Detector Phase	4	4	8	8	2	2		
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	5.0	5.0
Minimum Split (s)	25.1	25.1	25.1	25.1	24.6	24.6	24.6	9.5
Total Split (s)	107.5	107.5	98.0	98.0	27.5	27.5	27.5	9.5
Total Split (%)	79.6%	79.6%	72.6%	72.6%	20.4%	20.4%	20%	7%
Maximum Green (s)	100.4	100.4	90.9	90.9	20.9	20.9	20.9	6.5
Yellow Time (s)	4.0	4.0	4.0	4.0	3.7	3.7	3.7	3.0
All-Red Time (s)	3.1	3.1	3.1	3.1	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.1	7.1	7.1	7.1	6.6	6.6		
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?			Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	
Act Effct Green (s)	82.0	82.0	82.0	82.0	39.3	39.3		
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.29	0.29		
v/c Ratio	0.69	0.10	0.59	0.65	0.20	0.05		
Control Delay	40.3	11.0	64.7	39.3	40.3	15.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	40.3	11.0	64.7	39.3	40.3	15.2		
LOS	D	B	E	D	D	B		
Approach Delay	38.9			39.8	35.8			
Approach LOS	D			D	D			

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 39.3

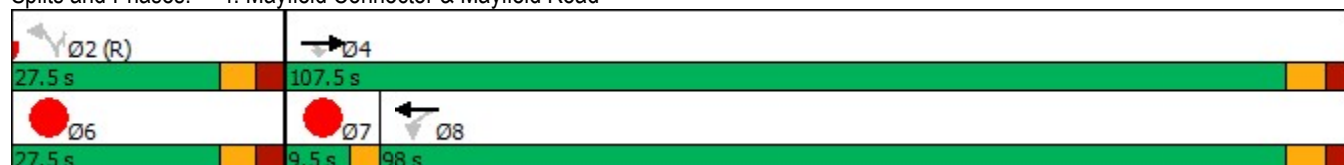
Intersection LOS: D

Intersection Capacity Utilization 59.9%

ICU Level of Service B

























Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2031 FB PM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	1090	198	120	1130	64	346	545	98	105	360	309
Future Volume (vph)	347	1090	198	120	1130	64	346	545	98	105	360	309
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.104			0.250			0.415			0.358		
Satd. Flow (perm)	142	4939	1493	435	5216	961	741	3386	1426	556	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			191			128			106			309
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	347	1090	198	120	1130	64	346	545	98	105	360	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	347	1090	198	120	1130	64	346	545	98	105	360	309
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2031 FB PM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	37.0	62.8	62.8	15.4	41.2	41.2	17.0	43.8	43.8	13.0	39.8	39.8
Total Split (%)	27.4%	46.5%	46.5%	11.4%	30.5%	30.5%	12.6%	32.4%	32.4%	9.6%	29.5%	29.5%
Maximum Green (s)	34.0	55.7	55.7	12.4	34.1	34.1	14.0	36.9	36.9	10.0	32.9	32.9
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	75.2	58.8	58.8	48.8	35.4	35.4	53.8	37.8	37.8	45.9	32.9	32.9
Actuated g/C Ratio	0.56	0.44	0.44	0.36	0.26	0.26	0.40	0.28	0.28	0.34	0.24	0.24
v/c Ratio	0.97	0.51	0.26	0.50	0.83	0.18	0.88	0.58	0.21	0.42	0.44	0.55
Control Delay	97.1	13.1	4.6	25.6	53.3	1.2	57.2	44.8	6.8	32.2	45.3	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.1	13.1	4.6	25.6	53.3	1.2	57.2	44.8	6.8	32.2	45.3	8.5
LOS	F	B	A	C	D	A	E	D	A	C	D	A
Approach Delay		29.9			48.2			45.4			28.8	
Approach LOS		C			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 38.1

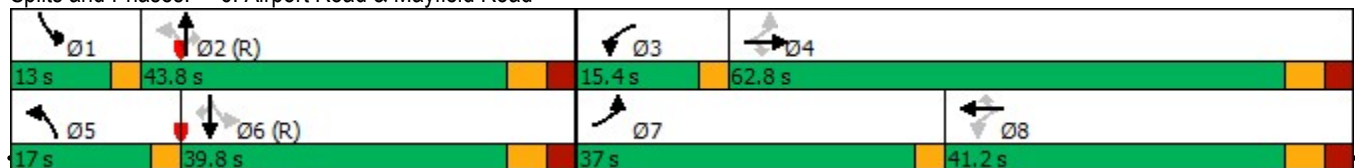
Intersection LOS: D

Intersection Capacity Utilization 110.1%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2031 Future Background PM 2022-5841 4:00 pm 01/01/2026 Baseline

Synchro 11 Report

C.F. Crozier & Associates

Page 8
























# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2031 FB PM

01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	824	90	17	493	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	824	90	17	493	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	824	94	17	493	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1100	1607	248	1342	1519	417	500				923	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1100	1607	248	1342	1519	417	500				923	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	94	99	89	0	100	99	88				96	
cM capacity (veh/h)	128	89	720	82	100	588	639				383	
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	8	77	113	4	78	412	412	94	17	246	246	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	128	659	82	588	639	1700	1700	1700	383	1700	1700	1700
Volume to Capacity	0.06	0.12	1.39	0.01	0.12	0.24	0.24	0.06	0.04	0.14	0.14	0.00
Queue Length 95th (m)	1.6	3.2	70.1	0.2	3.3	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Control Delay (s)	35.0	11.2	323.3	11.2	11.4	0.0	0.0	0.0	14.8	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				B			
Approach Delay (s)	13.4		312.6		0.9				0.5			
Approach LOS	B		F									
Intersection Summary												
Average Delay	22.7											
Intersection Capacity Utilization	49.0%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2031 FB PM  
01/24/2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	34	5	785	26	2	438	
Future Volume (vph)	34	5	785	26	2	438	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8	
Storage Length (m)	0.0	0.0		145.0	75.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	7.5				100.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1328	1383	3449	992	1116	3101	
Flt Permitted	0.950				0.355		
Satd. Flow (perm)	1328	1383	3449	992	417	3101	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		5		26			
Link Speed (k/h)	50		80			80	
Link Distance (m)	270.4		438.0			348.1	
Travel Time (s)	19.5		19.7			15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%	
Adj. Flow (vph)	34	5	785	26	2	438	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	34	5	785	26	2	438	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	4.0		3.5			3.5	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1	1	2	1	1	2	
Detector Template	Left	Right	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2031 FB PM  
01/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Protected Phases			2			6	4
Permitted Phases	8	8		2	6		
Detector Phase	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
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6	36.2
Total Split (s)	43.0	43.0	77.0	77.0	77.0	77.0	43.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%	64.2%	64.2%	36%
Maximum Green (s)	34.8	34.8	70.4	70.4	70.4	70.4	34.8
Yellow Time (s)	4.0	4.0	4.6	4.6	4.6	4.6	4.0
All-Red Time (s)	4.2	4.2	2.0	2.0	2.0	2.0	4.2
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?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0	20.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effect Green (s)	12.1	12.1	87.9	87.9	87.9	87.9	
Actuated g/C Ratio	0.12	0.12	0.85	0.85	0.85	0.85	
v/c Ratio	0.22	0.03	0.27	0.03	0.01	0.17	
Control Delay	47.7	26.8	3.2	1.4	3.5	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.7	26.8	3.2	1.4	3.5	2.9	
LOS	D	C	A	A	A	A	
Approach Delay	45.0		3.2			2.9	
Approach LOS	D		A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 102.9

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.27

Intersection Signal Delay: 4.3

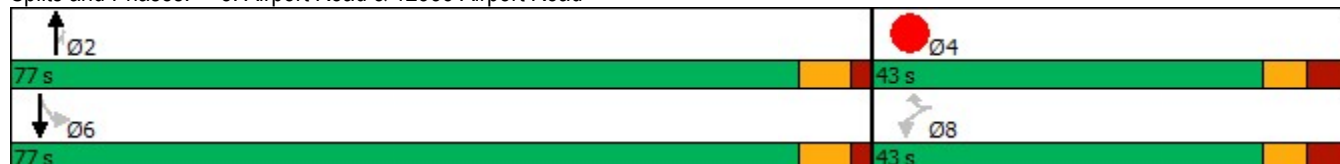
Intersection LOS: A

Intersection Capacity Utilization 44.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Airport Road & 12333 Airport Road



















# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2036 FB AM





























01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	205	15	16	88	1	5	88	21	4	293	11
Future Volume (vph)	6	205	15	16	88	1	5	88	21	4	293	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	223	16	17	96	1	5	96	23	4	318	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	246	114	124	334								
Volume Left (vph)	7	17	5	4								
Volume Right (vph)	16	1	23	12								
Hadj (s)	0.04	0.04	-0.04	-0.01								
Departure Headway (s)	5.4	5.6	5.4	5.1								
Degree Utilization, x	0.37	0.18	0.19	0.47								
Capacity (veh/h)	623	575	606	667								
Control Delay (s)	11.4	9.8	9.6	12.6								
Approach Delay (s)	11.4	9.8	9.6	12.6								
Approach LOS	B	A	A	B								
Intersection Summary												
Delay				11.4								
Level of Service				B								
Intersection Capacity Utilization				36.9%	ICU Level of Service	A						
Analysis Period (min)				15								

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2036 FB AM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	37	2011	259	181	1695	9	292	67	117	12	263	49
Future Volume (vph)	37	2011	259	181	1695	9	292	67	117	12	263	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.076			0.076			0.512			0.713		
Satd. Flow (perm)	139	4734	1597	143	4861	0	962	1942	1587	1340	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		1				117			66
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	37	2011	259	181	1695	9	292	67	117	12	263	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	2011	259	181	1704	0	292	67	117	12	263	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	10.0	60.0	60.0	10.0	60.0		50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	8.3%	50.0%	50.0%	8.3%	50.0%		41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
Maximum Green (s)	7.0	52.7	52.7	7.0	52.7		42.9	42.9	42.9	42.9	42.9	42.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	64.0	52.7	52.7	64.0	52.7		42.9	42.9	42.9	42.9	42.9	42.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.53	0.44	0.44	0.53	0.44		0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.22	0.97	0.31	1.05	0.80		0.85	0.10	0.18	0.03	0.38	0.09
Control Delay	15.2	46.5	3.4	114.4	30.2		59.5	26.2	5.4	25.3	30.7	3.9
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	15.2	46.5	3.4	114.4	30.2		59.5	26.2	5.4	25.3	30.7	3.9
LOS	B	D	A	F	C		E	C	A	C	C	A
Approach Delay		41.2			38.3			41.5			26.4	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 39.2

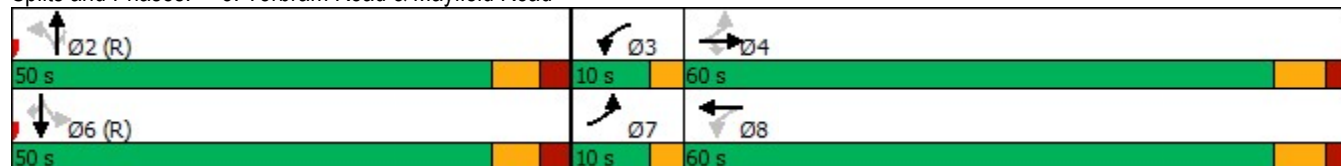
Intersection LOS: D

Intersection Capacity Utilization 100.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FB AM  
01/24/2023

							Ø6	Ø7
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑		
Traffic Volume (vph)	2086	110	14	1756	231	35		
Future Volume (vph)	2086	110	14	1756	231	35		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (m)	3.8	3.5	3.5	3.8	3.8	3.8		
Storage Length (m)		55.0	75.0		55.0	0.0		
Storage Lanes		1	1		1	1		
Taper Length (m)			7.5		7.5			
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00		
Frt		0.850				0.850		
Flt Protected			0.950		0.950			
Satd. Flow (prot)	4734	1566	1750	4864	1809	1619		
Flt Permitted			0.058		0.950			
Satd. Flow (perm)	4734	1566	107	4864	1809	1619		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		91				11		
Link Speed (k/h)	80			80	50			
Link Distance (m)	716.7			643.7	353.1			
Travel Time (s)	32.3			29.0	25.4			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%		
Adj. Flow (vph)	2086	110	14	1756	231	35		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	2086	110	14	1756	231	35		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(m)	3.5			3.5	3.8			
Link Offset(m)	0.0			0.0	0.0			
Crosswalk Width(m)	4.8			4.8	4.8			
Two way Left Turn Lane								
Headway Factor	0.97	1.01	1.01	0.97	0.97	0.97		
Turning Speed (k/h)		15	25		25	15		
Number of Detectors	2	1	1	2	1	1		
Detector Template	Thru	Right	Left	Thru	Left	Right		
Leading Detector (m)	10.0	10.0	25.0	10.0	25.0	10.0		
Trailing Detector (m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Position(m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Size(m)	0.6	10.0	10.0	0.6	10.0	10.0		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(m)	9.4			9.4				
Detector 2 Size(m)	0.6			0.6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Perm	NA	Perm	Perm		



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

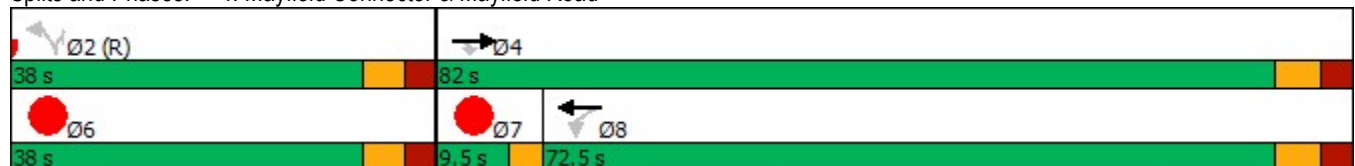
2036 FB AM  
01/24/2023

	→	↘	↙	←	↖	↗		
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Protected Phases	4			8			6	7
Permitted Phases		4	8		2	2		
Detector Phase	4	4	8	8	2	2		
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	5.0	5.0
Minimum Split (s)	25.1	25.1	25.1	25.1	24.6	24.6	24.6	9.5
Total Split (s)	82.0	82.0	72.5	72.5	38.0	38.0	38.0	9.5
Total Split (%)	68.3%	68.3%	60.4%	60.4%	31.7%	31.7%	32%	8%
Maximum Green (s)	74.9	74.9	65.4	65.4	31.4	31.4	31.4	6.5
Yellow Time (s)	4.0	4.0	4.0	4.0	3.7	3.7	3.7	3.0
All-Red Time (s)	3.1	3.1	3.1	3.1	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.1	7.1	7.1	7.1	6.6	6.6		
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?			Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	
Act Effect Green (s)	69.1	69.1	69.1	69.1	37.2	37.2		
Actuated g/C Ratio	0.58	0.58	0.58	0.58	0.31	0.31		
v/c Ratio	0.77	0.12	0.23	0.63	0.41	0.07		
Control Delay	36.5	12.5	25.6	25.9	37.0	24.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	36.5	12.5	25.6	25.9	37.0	24.8		
LOS	D	B	C	C	D	C		
Approach Delay	35.3			25.9	35.4			
Approach LOS	D			C	D			

Intersection Summary

























Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 31.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 64.5%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2036 FB AM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	261	1168	431	109	1188	43	227	229	96	73	632	217
Future Volume (vph)	261	1168	431	109	1188	43	227	229	96	73	632	217
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.101			0.217			0.214			0.609		
Satd. Flow (perm)	137	4939	1493	377	5216	961	383	3386	1426	946	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			307			145			119			217
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	261	1168	431	109	1188	43	227	229	96	73	632	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	1168	431	109	1188	43	227	229	96	73	632	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FB AM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	27.0	53.4	53.4	14.8	41.2	41.2	14.0	42.8	42.8	9.0	37.8	37.8
Total Split (%)	22.5%	44.5%	44.5%	12.3%	34.3%	34.3%	11.7%	35.7%	35.7%	7.5%	31.5%	31.5%
Maximum Green (s)	24.0	46.3	46.3	11.8	34.1	34.1	11.0	35.9	35.9	6.0	30.9	30.9
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	65.2	49.6	49.6	49.3	36.8	36.8	48.8	37.7	37.7	40.6	30.9	30.9
Actuated g/C Ratio	0.54	0.41	0.41	0.41	0.31	0.31	0.41	0.31	0.31	0.34	0.26	0.26
v/c Ratio	0.94	0.57	0.54	0.44	0.74	0.11	0.82	0.22	0.18	0.21	0.73	0.43
Control Delay	82.1	32.9	15.3	21.2	41.4	0.6	50.5	31.6	4.0	24.6	46.6	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.1	32.9	15.3	21.2	41.4	0.6	50.5	31.6	4.0	24.6	46.6	7.5
LOS	F	C	B	C	D	A	D	C	A	C	D	A
Approach Delay		35.8			38.5			34.6			35.7	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.4

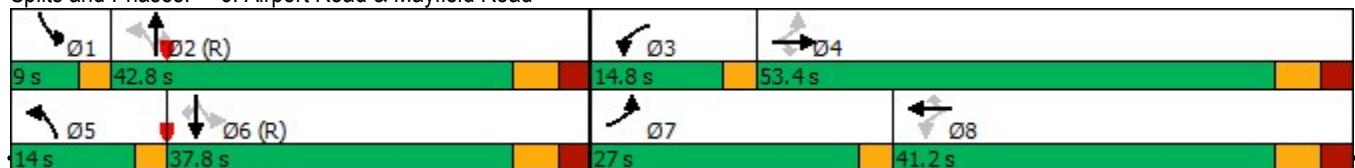
Intersection LOS: D

Intersection Capacity Utilization 98.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2036 Future Background AM 2022-5841 9:00 am 01/01/2026 Baseline

Synchro 11 Report























C.F. Crozier & Associates

Page 8

# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2036 FB AM  
01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	538	83	2	765	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	538	83	2	765	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	538	86	2	765	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1148	1491	384	1055	1408	274	769				629	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1491	384	1055	1408	274	769				629	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	96	99	94	47	100	98	90				100	
cM capacity (veh/h)	121	111	584	148	125	727	459				550	
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	5	34	78	17	46	269	269	86	2	382	382	3
Volume Left	5	0	78	0	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	121	519	148	727	459	1700	1700	1700	550	1700	1700	1700
Volume to Capacity	0.04	0.07	0.53	0.02	0.10	0.16	0.16	0.05	0.00	0.23	0.23	0.00
Queue Length 95th (m)	1.0	1.7	20.6	0.6	2.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	35.9	12.4	53.4	10.1	13.7	0.0	0.0	0.0	11.6	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				B			
Approach Delay (s)	15.4			45.7			0.9			0.0		
Approach LOS	C	E										
Intersection Summary												
Average Delay	3.6											
Intersection Capacity Utilization	45.5%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2036 FB AM  
01/24/2023

							Ø4
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	77	11	443	61	17	682	
Future Volume (vph)	77	11	443	61	17	682	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8	
Storage Length (m)	0.0	0.0		145.0	75.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	7.5				100.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1328	1383	3449	992	1116	3101	
Flt Permitted	0.950				0.495		
Satd. Flow (perm)	1328	1383	3449	992	581	3101	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		11		61			
Link Speed (k/h)	50		80			80	
Link Distance (m)	270.4		438.0			348.1	
Travel Time (s)	19.5		19.7			15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%	
Adj. Flow (vph)	77	11	443	61	17	682	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	77	11	443	61	17	682	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	4.0		3.5			3.5	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1	1	2	1	1	2	
Detector Template	Left	Right	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2036 FB AM  
01/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Protected Phases			2			6	4
Permitted Phases	8	8		2	6		
Detector Phase	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
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6	36.2
Total Split (s)	48.0	48.0	72.0	72.0	72.0	72.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	40%
Maximum Green (s)	39.8	39.8	65.4	65.4	65.4	65.4	39.8
Yellow Time (s)	4.0	4.0	4.6	4.6	4.6	4.6	4.0
All-Red Time (s)	4.2	4.2	2.0	2.0	2.0	2.0	4.2
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?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0	20.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	12.8	12.8	76.1	76.1	76.1	76.1	
Actuated g/C Ratio	0.13	0.13	0.78	0.78	0.78	0.78	
v/c Ratio	0.44	0.06	0.17	0.08	0.04	0.28	
Control Delay	48.0	18.8	4.2	1.5	4.6	4.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.0	18.8	4.2	1.5	4.6	4.8	
LOS	D	B	A	A	A	A	
Approach Delay	44.4		3.9			4.8	
Approach LOS	D		A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 97.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 7.1

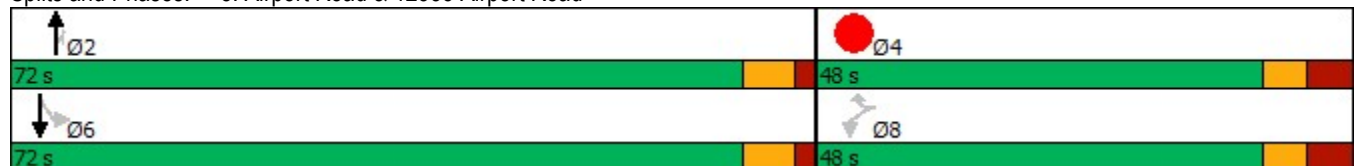
Intersection LOS: A

Intersection Capacity Utilization 41.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Airport Road & 12333 Airport Road



















# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2036 FB PM

01/24/2023





























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	97	5	13	332	7	17	246	26	6	74	7
Future Volume (vph)	11	97	5	13	332	7	17	246	26	6	74	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	105	5	14	361	8	18	267	28	7	80	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	122	383	313	95								
Volume Left (vph)	12	14	18	7								
Volume Right (vph)	5	8	28	8								
Hadj (s)	0.08	0.01	0.01	0.00								
Departure Headway (s)	5.8	5.3	5.5	5.9								
Degree Utilization, x	0.20	0.56	0.48	0.16								
Capacity (veh/h)	552	644	609	534								
Control Delay (s)	10.2	15.0	13.4	10.0								
Approach Delay (s)	10.2	15.0	13.4	10.0								
Approach LOS	B	B	B	A								
Intersection Summary												
Delay				13.3								
Level of Service				B								
Intersection Capacity Utilization				46.7%	ICU Level of Service	A						
Analysis Period (min)				15								



Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2036 FB PM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	41	2050	243	157	2018	12	305	152	160	3	67	27
Future Volume (vph)	41	2050	243	157	2018	12	305	152	160	3	67	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.062			0.059			0.713			0.637		
Satd. Flow (perm)	113	4734	1597	111	4861	0	1340	1942	1587	1197	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		1				122			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	41	2050	243	157	2018	12	305	152	160	3	67	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	2050	243	157	2030	0	305	152	160	3	67	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	72.0	72.0	14.0	78.0		49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	5.9%	53.3%	53.3%	10.4%	57.8%		36.3%	36.3%	36.3%	36.3%	36.3%	36.3%
Maximum Green (s)	5.0	64.7	64.7	11.0	70.7		41.9	41.9	41.9	41.9	41.9	41.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	74.0	64.7	64.7	83.0	70.7		41.9	41.9	41.9	41.9	41.9	41.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FB PM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.55	0.48	0.48	0.61	0.52		0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.34	0.90	0.27	0.77	0.80		0.73	0.25	0.28	0.01	0.11	0.05
Control Delay	18.6	39.1	3.1	71.2	20.4		53.6	36.3	11.3	32.3	34.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	39.1	3.1	71.2	20.4		53.6	36.3	11.3	32.3	34.0	0.2
LOS	B	D	A	E	C		D	D	B	C	C	A
Approach Delay	35.0			24.0			38.4			24.5		
Approach LOS	D			C			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 30.6

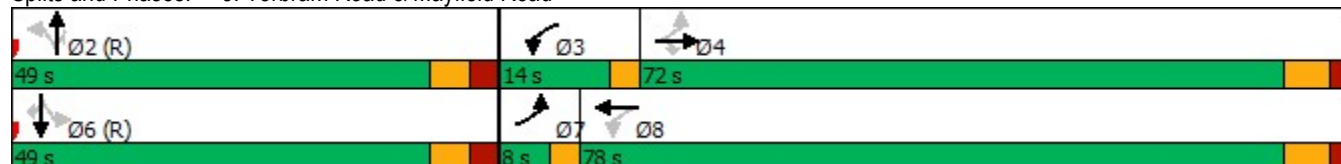
Intersection LOS: C

Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FB PM  
01/24/2023

							Ø6	Ø7
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑↑↑	↑	↓	↑↑↑	↓	↑		
Traffic Volume (vph)	2146	98	41	2095	104	23		
Future Volume (vph)	2146	98	41	2095	104	23		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width (m)	3.8	3.5	3.5	3.8	3.8	3.8		
Storage Length (m)		55.0	75.0		55.0	0.0		
Storage Lanes		1	1		1	1		
Taper Length (m)			7.5		7.5			
Lane Util. Factor	0.91	1.00	1.00	0.91	1.00	1.00		
Frt		0.850				0.850		
Flt Protected			0.950		0.950			
Satd. Flow (prot)	4734	1566	1750	4864	1809	1619		
Flt Permitted			0.053		0.950			
Satd. Flow (perm)	4734	1566	98	4864	1809	1619		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		98				22		
Link Speed (k/h)	80			80	50			
Link Distance (m)	716.7			643.7	353.1			
Travel Time (s)	32.3			29.0	25.4			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Heavy Vehicles (%)	12%	2%	2%	9%	2%	2%		
Adj. Flow (vph)	2146	98	41	2095	104	23		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	2146	98	41	2095	104	23		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(m)	3.5			3.5	3.8			
Link Offset(m)	0.0			0.0	0.0			
Crosswalk Width(m)	4.8			4.8	4.8			
Two way Left Turn Lane								
Headway Factor	0.97	1.01	1.01	0.97	0.97	0.97		
Turning Speed (k/h)		15	25		25	15		
Number of Detectors	2	1	1	2	1	1		
Detector Template	Thru	Right	Left	Thru	Left	Right		
Leading Detector (m)	10.0	10.0	25.0	10.0	25.0	10.0		
Trailing Detector (m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Position(m)	0.0	0.0	15.0	0.0	15.0	0.0		
Detector 1 Size(m)	0.6	10.0	10.0	0.6	10.0	10.0		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel								
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(m)	9.4			9.4				
Detector 2 Size(m)	0.6			0.6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Perm	NA	Perm	Perm		

Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FB PM  
01/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø6	Ø7
Protected Phases	4			8			6	7
Permitted Phases		4	8		2	2		
Detector Phase	4	4	8	8	2	2		
Switch Phase								
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	5.0	5.0
Minimum Split (s)	25.1	25.1	25.1	25.1	24.6	24.6	24.6	9.5
Total Split (s)	108.5	108.5	99.0	99.0	26.5	26.5	26.5	9.5
Total Split (%)	80.4%	80.4%	73.3%	73.3%	19.6%	19.6%	20%	7%
Maximum Green (s)	101.4	101.4	91.9	91.9	19.9	19.9	19.9	6.5
Yellow Time (s)	4.0	4.0	4.0	4.0	3.7	3.7	3.7	3.0
All-Red Time (s)	3.1	3.1	3.1	3.1	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.1	7.1	7.1	7.1	6.6	6.6		
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?			Yes	Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	Max	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	
Act Effect Green (s)	87.4	87.4	87.4	87.4	33.9	33.9		
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.25	0.25		
v/c Ratio	0.70	0.09	0.65	0.67	0.23	0.05		
Control Delay	32.2	8.5	65.6	34.1	44.1	16.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	32.2	8.5	65.6	34.1	44.1	16.7		
LOS	C	A	E	C	D	B		
Approach Delay	31.2			34.7	39.1			
Approach LOS	C			C	D			

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:NBL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 33.1

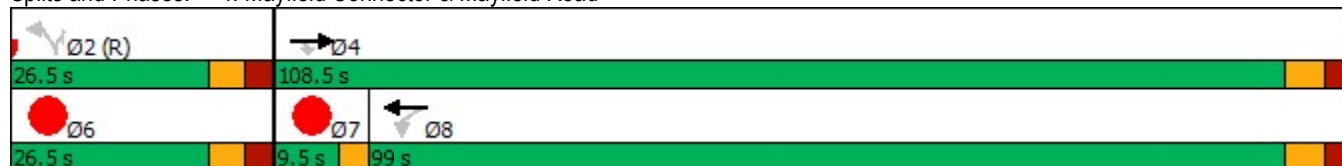
Intersection LOS: C

Intersection Capacity Utilization 62.9%

ICU Level of Service B

Analysis Period (min) 15































Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2036 FB PM

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	359	1171	206	126	1230	68	360	573	103	110	378	323
Future Volume (vph)	359	1171	206	126	1230	68	360	573	103	110	378	323
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.108			0.229			0.398			0.348		
Satd. Flow (perm)	147	4939	1493	398	5216	961	711	3386	1426	540	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			179			128			106			323
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	359	1171	206	126	1230	68	360	573	103	110	378	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	359	1171	206	126	1230	68	360	573	103	110	378	323
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FB PM  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	36.0	59.8	59.8	17.4	41.2	41.2	18.0	44.8	44.8	13.0	39.8	39.8
Total Split (%)	26.7%	44.3%	44.3%	12.9%	30.5%	30.5%	13.3%	33.2%	33.2%	9.6%	29.5%	29.5%
Maximum Green (s)	33.0	52.7	52.7	14.4	34.1	34.1	15.0	37.9	37.9	10.0	32.9	32.9
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	74.2	57.5	57.5	47.8	34.1	34.1	54.8	38.7	38.7	46.0	32.9	32.9
Actuated g/C Ratio	0.55	0.43	0.43	0.35	0.25	0.25	0.41	0.29	0.29	0.34	0.24	0.24
v/c Ratio	1.00	0.56	0.28	0.55	0.93	0.20	0.90	0.59	0.21	0.45	0.46	0.57
Control Delay	97.5	17.7	6.6	27.9	62.7	1.3	60.2	44.6	7.3	32.4	45.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.5	17.7	6.6	27.9	62.7	1.3	60.2	44.6	7.3	32.4	45.7	8.5
LOS	F	B	A	C	E	A	E	D	A	C	D	A
Approach Delay		32.9			56.7			46.3			29.1	
Approach LOS		C			E			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 41.8

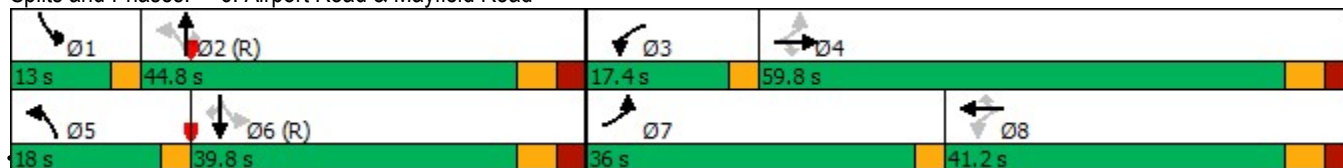
Intersection LOS: D

Intersection Capacity Utilization 111.5%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road
























# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2036 FB PM

01/24/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	859	90	17	517	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	859	90	17	517	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	859	94	17	517	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1142	1666	260	1389	1578	434	524				958	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1142	1666	260	1389	1578	434	524				958	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	93	99	89	0	100	99	87				95	
cM capacity (veh/h)	118	81	706	75	92	573	621				367	
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	8	77	113	4	78	430	430	94	17	258	258	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	118	642	75	573	621	1700	1700	1700	367	1700	1700	1700
Volume to Capacity	0.07	0.12	1.52	0.01	0.13	0.25	0.25	0.06	0.05	0.15	0.15	0.00
Queue Length 95th (m)	1.7	3.3	74.7	0.2	3.4	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Control Delay (s)	37.6	11.4	384.5	11.3	11.6	0.0	0.0	0.0	15.3	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				C			
Approach Delay (s)	13.8		371.7		0.9				0.5			
Approach LOS	B		F									
Intersection Summary												
Average Delay	25.9											
Intersection Capacity Utilization	50.0%			ICU Level of Service					A			
Analysis Period (min)	15											



Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2036 FB PM

01/24/2023

							Ø4
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Lane Configurations							
Traffic Volume (vph)	34	5	818	26	2	460	
Future Volume (vph)	34	5	818	26	2	460	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (m)	4.0	4.0	3.8	3.5	3.5	3.8	
Storage Length (m)	0.0	0.0		145.0	75.0		
Storage Lanes	1	1		1	1		
Taper Length (m)	7.5				100.0		
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		0.850		0.850			
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1328	1383	3449	992	1116	3101	
Flt Permitted	0.950				0.343		
Satd. Flow (perm)	1328	1383	3449	992	403	3101	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		5		26			
Link Speed (k/h)	50		80			80	
Link Distance (m)	270.4		438.0			348.1	
Travel Time (s)	19.5		19.7			15.7	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Heavy Vehicles (%)	42%	22%	7%	61%	60%	19%	
Adj. Flow (vph)	34	5	818	26	2	460	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	34	5	818	26	2	460	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(m)	4.0		3.5			3.5	
Link Offset(m)	0.0		0.0			0.0	
Crosswalk Width(m)	4.8		4.8			4.8	
Two way Left Turn Lane							
Headway Factor	0.94	0.94	0.97	1.01	1.01	0.97	
Turning Speed (k/h)	25	15		15	25		
Number of Detectors	1	1	2	1	1	2	
Detector Template	Left	Right	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)			9.4			9.4	
Detector 2 Size(m)			0.6			0.6	
Detector 2 Type			Cl+Ex			Cl+Ex	
Detector 2 Channel							
Detector 2 Extend (s)			0.0			0.0	
Turn Type	Perm	Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & 12333 Airport Road

2036 FB PM  
01/24/2023

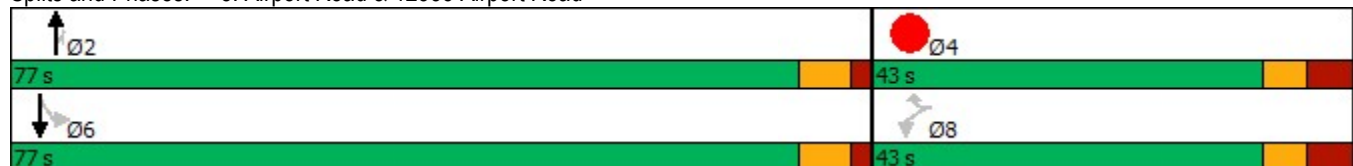


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø4
Protected Phases			2			6	4
Permitted Phases	8	8		2	6		
Detector Phase	8	8	2	2	6	6	
Switch Phase							
Minimum Initial (s)	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	36.2	36.2	35.6	35.6	35.6	35.6	36.2
Total Split (s)	43.0	43.0	77.0	77.0	77.0	77.0	43.0
Total Split (%)	35.8%	35.8%	64.2%	64.2%	64.2%	64.2%	36%
Maximum Green (s)	34.8	34.8	70.4	70.4	70.4	70.4	34.8
Yellow Time (s)	4.0	4.0	4.6	4.6	4.6	4.6	4.0
All-Red Time (s)	4.2	4.2	2.0	2.0	2.0	2.0	4.2
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?							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	Max	Max	None
Walk Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)	20.0	20.0	21.0	21.0	21.0	21.0	20.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0
Act Effct Green (s)	12.1	12.1	87.9	87.9	87.9	87.9	
Actuated g/C Ratio	0.12	0.12	0.85	0.85	0.85	0.85	
v/c Ratio	0.22	0.03	0.28	0.03	0.01	0.17	
Control Delay	47.7	26.8	3.3	1.4	3.5	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.7	26.8	3.3	1.4	3.5	2.9	
LOS	D	C	A	A	A	A	
Approach Delay	45.0		3.2			2.9	
Approach LOS	D		A			A	

Intersection Summary

Area Type: Other  
Cycle Length: 120  
Actuated Cycle Length: 102.9  
Natural Cycle: 75  
Control Type: Semi Act-Uncoord  
Maximum v/c Ratio: 0.28  
Intersection Signal Delay: 4.3  
Intersection Capacity Utilization 44.9%  
Analysis Period (min) 15  
Intersection LOS: A  
ICU Level of Service A






























Splits and Phases: 8: Airport Road & 12333 Airport Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FT AM (opt)













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Future Volume (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.103			0.297			0.231			0.563		
Satd. Flow (perm)	140	4939	1493	516	3630	961	413	3386	1426	874	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			318			145			119			202
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FT AM (opt)

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	39.9	39.9	9.0	36.9	36.9
Total Split (s)	23.0	53.0	53.0	12.0	42.0	42.0	15.0	46.0	46.0	9.0	40.0	40.0
Total Split (%)	19.2%	44.2%	44.2%	10.0%	35.0%	35.0%	12.5%	38.3%	38.3%	7.5%	33.3%	33.3%
Maximum Green (s)	20.0	45.9	45.9	9.0	34.9	34.9	12.0	39.1	39.1	6.0	33.1	33.1
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	62.0	47.1	47.1	47.8	36.0	36.0	52.0	40.9	40.9	42.9	33.1	33.1
Actuated g/C Ratio	0.52	0.39	0.39	0.40	0.30	0.30	0.43	0.34	0.34	0.36	0.28	0.28
v/c Ratio	0.94	0.48	0.56	0.35	0.93	0.14	0.90	0.27	0.15	0.24	0.68	0.39
Control Delay	91.7	38.7	20.6	19.7	56.2	0.8	58.2	30.1	2.7	23.2	43.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.7	38.7	20.6	19.7	56.2	0.8	58.2	30.1	2.7	23.2	43.3	7.0
LOS	F	D	C	B	E	A	E	C	A	C	D	A
Approach Delay		41.7			50.5			38.1			33.5	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 41.8

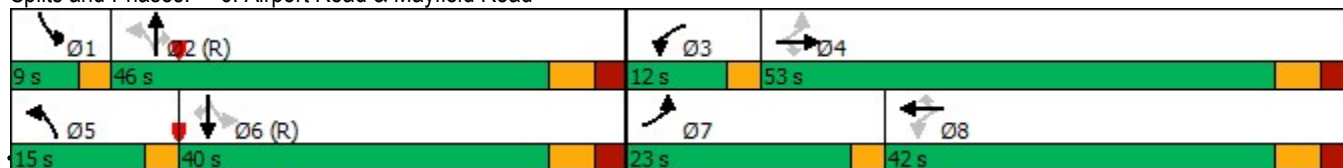
Intersection LOS: D

Intersection Capacity Utilization 100.2%

ICU Level of Service G

Analysis Period (min) 15

















Splits and Phases: 6: Airport Road & Mayfield Road



# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road











2026 FT AM  
01/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	172	19	45	74	1	6	75	29	4	263	11
Future Volume (vph)	6	172	19	45	74	1	6	75	29	4	263	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	187	21	49	80	1	7	82	32	4	286	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	215	130	121	302								
Volume Left (vph)	7	49	7	4								
Volume Right (vph)	21	1	32	12								
Hadj (s)	0.01	0.08	-0.07	-0.02								
Departure Headway (s)	5.2	5.4	5.2	5.0								
Degree Utilization, x	0.31	0.20	0.18	0.42								
Capacity (veh/h)	634	599	626	677								
Control Delay (s)	10.6	9.8	9.4	11.6								
Approach Delay (s)	10.6	9.8	9.4	11.6								
Approach LOS	B	A	A	B								
Intersection Summary												
Delay				10.7								
Level of Service				B								
Intersection Capacity Utilization				42.7%	ICU Level of Service	A						
Analysis Period (min)				15								

# HCM Unsignalized Intersection Capacity Analysis





























## 2: Torbram Road & Torbram Connector

2026 FT AM  
01/20/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	66	8	109	112	28	301
Future Volume (Veh/h)	66	8	109	112	28	301
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	9	118	122	30	327
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	566	179			240	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566	179			240	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	99			98	
cM capacity (veh/h)	475	864			1327	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	72	9	240	357		
Volume Left	72	0	0	30		
Volume Right	0	9	122	0		
cSH	475	864	1700	1327		
Volume to Capacity	0.15	0.01	0.14	0.02		
Queue Length 95th (m)	4.2	0.3	0.0	0.6		
Control Delay (s)	13.9	9.2	0.0	0.9		
Lane LOS	B	A		A		
Approach Delay (s)	13.4		0.0	0.9		
Approach LOS	B					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			43.6%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FT AM  
01/20/2023













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	116	1658	259	188	1422	66	292	103	135	55	239	74
Future Volume (vph)	116	1658	259	188	1422	66	292	103	135	55	239	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4840	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.088			0.082			0.550			0.690		
Satd. Flow (perm)	161	4734	1597	154	4840	0	1033	1942	1587	1296	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		7				135			74
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	116	1658	259	188	1422	66	292	103	135	55	239	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	1658	259	188	1488	0	292	103	135	55	239	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	12.0	54.0	54.0	14.0	56.0		52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	10.0%	45.0%	45.0%	11.7%	46.7%		43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Maximum Green (s)	9.0	46.7	46.7	11.0	48.7		44.9	44.9	44.9	44.9	44.9	44.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	60.0	46.7	46.7	64.0	48.7		44.9	44.9	44.9	44.9	44.9	44.9



Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FT AM

01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.50	0.39	0.39	0.53	0.41		0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.59	0.90	0.33	0.81	0.76		0.76	0.14	0.20	0.11	0.33	0.12
Control Delay	29.8	42.4	4.1	65.7	34.4		47.1	25.5	4.9	25.5	28.4	6.0
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	29.8	42.4	4.1	65.7	34.4		47.1	25.5	4.9	25.5	28.4	6.0
LOS	C	D	A	E	C		D	C	A	C	C	A
Approach Delay	36.8			37.9			32.2			23.5		
Approach LOS	D			D			C			C		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 35.6

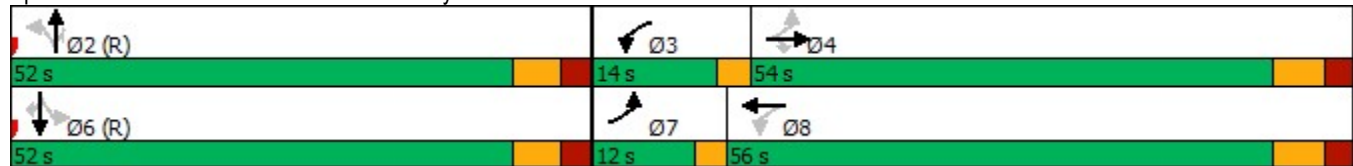
Intersection LOS: D

Intersection Capacity Utilization 92.5%

ICU Level of Service F

Analysis Period (min) 15



























Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2026 FT AM

01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	166	1602	110	14	1453	56	231	0	35	28	0	49
Future Volume (vph)	166	1602	110	14	1453	56	231	0	35	28	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.087			0.129			0.725			0.734		
Satd. Flow (perm)	139	4734	1566	238	4864	1170	1381	1583	0	1049	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			60			65			303
Link Speed (k/h)		80			80			50				50
Link Distance (m)		716.7			643.7			353.1				866.6
Travel Time (s)		32.3			29.0			25.4				62.4
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	166	1602	110	14	1453	56	231	0	35	28	0	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1602	110	14	1453	56	231	35	0	28	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	

# Lanes, Volumes, Timings

## 4: Mayfield Connector & Mayfield Road

2026 FT AM  
01/20/2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	21.0	76.0	76.0	55.0	55.0	55.0	44.0	44.0		44.0	44.0	
Total Split (%)	17.5%	63.3%	63.3%	45.8%	45.8%	45.8%	36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	18.0	68.9	68.9	47.9	47.9	47.9	37.4	37.4		37.4	37.4	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	64.3	60.2	60.2	43.0	43.0	43.0	46.1	46.1		46.1	46.1	
Actuated g/C Ratio	0.54	0.50	0.50	0.36	0.36	0.36	0.38	0.38		0.38	0.38	
v/c Ratio	0.70	0.67	0.13	0.16	0.83	0.12	0.44	0.05		0.07	0.07	
Control Delay	51.6	45.9	16.7	34.8	46.5	11.6	32.9	2.1		28.0	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.6	45.9	16.7	34.8	46.5	11.6	32.9	2.1		28.0	0.2	
LOS	D	D	B	C	D	B	C	A		C	A	
Approach Delay		44.7			45.1			28.8			10.3	
Approach LOS		D			D			C			B	

### Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 43.1

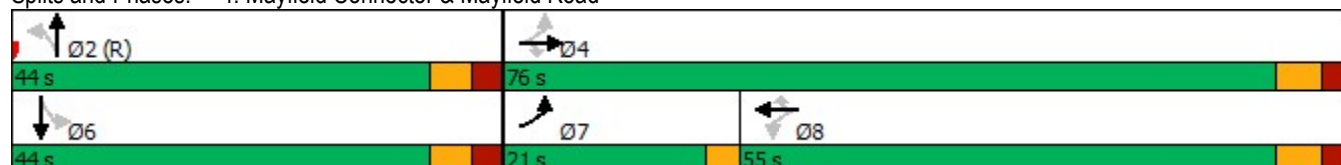
Intersection LOS: D

Intersection Capacity Utilization 77.8%

ICU Level of Service D

Analysis Period (min) 15






























### Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2026 FT AM

01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Future Volume (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.102			0.297			0.231			0.563		
Satd. Flow (perm)	139	4939	1493	516	3630	961	413	3386	1426	874	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271			117			92			202
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	238	925	433	98	1010	55	277	311	87	82	633	202
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FT AM  
01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	41.1	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	22.0	65.0	65.0	43.0	43.0	43.0	15.0	46.0	46.0	9.0	40.0	40.0
Total Split (%)	18.3%	54.2%	54.2%	35.8%	35.8%	35.8%	12.5%	38.3%	38.3%	7.5%	33.3%	33.3%
Maximum Green (s)	19.0	57.9	57.9	35.9	35.9	35.9	12.0	39.1	39.1	6.0	33.1	33.1
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0	27.0	27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0		0	0
Act Effect Green (s)	62.0	57.9	57.9	36.4	36.4	36.4	52.0	40.9	40.9	42.9	33.1	33.1
Actuated g/C Ratio	0.52	0.48	0.48	0.30	0.30	0.30	0.43	0.34	0.34	0.36	0.28	0.28
v/c Ratio	0.96	0.39	0.50	0.63	0.92	0.15	0.90	0.27	0.16	0.24	0.68	0.39
Control Delay	95.7	31.4	20.2	56.3	54.2	0.8	58.2	30.1	6.0	23.2	43.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.7	31.4	20.2	56.3	54.2	0.8	58.2	30.1	6.0	23.2	43.3	7.0
LOS	F	C	C	E	D	A	E	C	A	C	D	A
Approach Delay		38.0			51.9			38.5			33.5	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 40.8

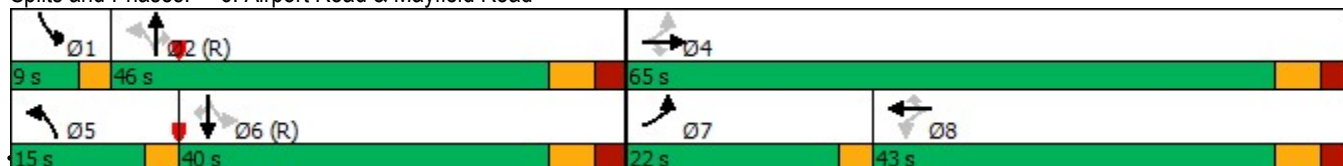
Intersection LOS: D

Intersection Capacity Utilization 100.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road

























# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2026 FT AM























01/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	611	83	2	777	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	611	83	2	777	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	611	86	2	777	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1196	1576	390	1134	1493	310	781				702	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1196	1576	390	1134	1493	310	781				702	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	95	99	94	40	100	98	90				100	
cM capacity (veh/h)	111	99	578	129	111	688	452				503	
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	5	34	78	17	46	306	306	86	2	388	388	3
Volume Left	5	0	78	0	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	111	506	129	688	452	1700	1700	1700	503	1700	1700	1700
Volume to Capacity	0.05	0.07	0.60	0.02	0.10	0.18	0.18	0.05	0.00	0.23	0.23	0.00
Queue Length 95th (m)	1.1	1.7	24.7	0.6	2.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	39.0	12.6	68.3	10.4	13.9	0.0	0.0	0.0	12.2	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				B			
Approach Delay (s)	16.0	57.9		0.9			0.0					
Approach LOS	C	F										
Intersection Summary												
Average Delay	4.1											
Intersection Capacity Utilization	45.8%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2026 FT AM

01/20/2023













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	77	77	0	11	121	402	61	17	625	95
Future Volume (vph)	22	0	77	77	0	11	121	402	61	17	625	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3059	0
Flt Permitted	0.750			0.707			0.375			0.515		
Satd. Flow (perm)	1155	1342	0	988	1324	0	505	3449	992	605	3059	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		284			462				61		25	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	22	0	77	77	0	11	121	402	61	17	625	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	77	0	77	11	0	121	402	61	17	720	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	



Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2026 FT AM

01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		35.6	35.6	35.6	35.6	35.6	
Total Split (s)	41.0	41.0		41.0	41.0		79.0	79.0	79.0	79.0	79.0	
Total Split (%)	34.2%	34.2%		34.2%	34.2%		65.8%	65.8%	65.8%	65.8%	65.8%	
Maximum Green (s)	32.8	32.8		32.8	32.8		72.4	72.4	72.4	72.4	72.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	14.5	14.5		14.5	14.5		78.2	78.2	78.2	78.2	78.2	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.77	0.77	0.77	0.77	0.77	
v/c Ratio	0.13	0.18		0.55	0.02		0.31	0.15	0.08	0.04	0.31	
Control Delay	39.7	0.9		55.8	0.1		8.6	4.7	1.7	5.4	5.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	39.7	0.9		55.8	0.1		8.6	4.7	1.7	5.4	5.4	
LOS	D	A		E	A		A	A	A	A	A	
Approach Delay		9.5			48.8			5.2			5.4	
Approach LOS		A			D			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 101.7

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 8.1

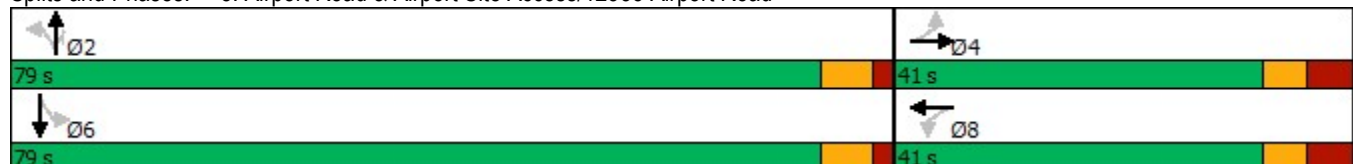
Intersection LOS: A

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 8: Airport Road & Airport Site Access/12333 Airport Road



# HCM Unsignalized Intersection Capacity Analysis

## 12: Torbram Road & Site Access "1"










2026 FT AM  
01/20/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	252	36	12	355
Future Volume (Veh/h)	12	3	252	36	12	355
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	274	39	13	386
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	706	294			313	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	706	294			313	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			99	
cM capacity (veh/h)	401	751			1259	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	313	399			
Volume Left	13	0	13			
Volume Right	3	39	0			
cSH	440	1700	1259			
Volume to Capacity	0.04	0.18	0.01			
Queue Length 95th (m)	0.9	0.0	0.3			
Control Delay (s)	13.5	0.0	0.4			
Lane LOS	B		A			
Approach Delay (s)	13.5	0.0	0.4			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			38.4%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 13: Torbram Road & Site Access "2"

2026 FT AM  
01/20/2023





















						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	218	36	12	355
Future Volume (Veh/h)	12	3	218	36	12	355
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	237	39	13	386
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	668	256			276	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	668	256			276	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			99	
cM capacity (veh/h)	422	787			1299	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	276	399			
Volume Left	13	0	13			
Volume Right	3	39	0			
cSH	462	1700	1299			
Volume to Capacity	0.03	0.16	0.01			
Queue Length 95th (m)	0.9	0.0	0.2			
Control Delay (s)	13.1	0.0	0.4			
Lane LOS	B		A			
Approach Delay (s)	13.1	0.0	0.4			
Approach LOS	B					
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		38.4%		ICU Level of Service		A
Analysis Period (min)		15				

# HCM Unsignalized Intersection Capacity Analysis

## 14: Mayfield Connector & Airport Connector













2026 FT AM

01/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	6	2	44	15	63	9	66	58	23	24	0
Future Volume (vph)	0	6	2	44	15	63	9	66	58	23	24	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	7	2	48	16	68	10	72	63	25	26	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	0	9	48	84	10	135	25	26				
Volume Left (vph)	0	0	48	0	10	0	25	0				
Volume Right (vph)	0	2	0	68	0	63	0	0				
Hadj (s)	0.00	-0.12	0.53	-0.53	0.53	-0.29	0.53	0.03				
Departure Headway (s)	5.1	5.0	5.5	4.4	5.4	4.6	5.5	5.0				
Degree Utilization, x	0.00	0.01	0.07	0.10	0.02	0.17	0.04	0.04				
Capacity (veh/h)	685	688	625	774	641	755	627	691				
Control Delay (s)	6.9	6.8	7.7	6.7	7.3	7.4	7.5	7.0				
Approach Delay (s)	6.8		7.1		7.4		7.3					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.2									
Level of Service			A									
Intersection Capacity Utilization			29.5%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis 15: Mayfield Connector & Torbram Connector

























2026 FT AM  
01/20/2023

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	18	35	0	0	0
Future Volume (vph)	0	18	35	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	20	38	0	0	0
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total (vph)	0	20	38	0	0	
Volume Left (vph)	0	0	38	0	0	
Volume Right (vph)	0	20	0	0	0	
Hadj (s)	0.00	-0.67	0.53	0.00	0.00	
Departure Headway (s)	4.6	3.9	5.1	4.5	4.4	
Degree Utilization, x	0.00	0.02	0.05	0.00	0.00	
Capacity (veh/h)	783	892	696	796	821	
Control Delay (s)	6.4	5.8	7.2	6.3	7.4	
Approach Delay (s)	5.8		7.2		0.0	
Approach LOS	A		A		A	
Intersection Summary						
Delay			6.7			
Level of Service			A			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2026 FT PM (opt)

01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Future Volume (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.093			0.283			0.353			0.339		
Satd. Flow (perm)	127	4939	1493	492	3630	961	630	3386	1426	526	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230			128			106			296
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FT PM (opt)  
01/24/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	33.0	62.5	62.5	17.5	47.0	47.0	18.0	43.0	43.0	12.0	37.0	37.0
Total Split (%)	24.4%	46.3%	46.3%	13.0%	34.8%	34.8%	13.3%	31.9%	31.9%	8.9%	27.4%	27.4%
Maximum Green (s)	30.0	55.4	55.4	14.5	39.9	39.9	15.0	36.1	36.1	9.0	30.1	30.1
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	77.0	61.0	61.0	52.9	39.9	39.9	52.0	36.4	36.4	42.7	30.1	30.1
Actuated g/C Ratio	0.57	0.45	0.45	0.39	0.30	0.30	0.39	0.27	0.27	0.32	0.22	0.22
v/c Ratio	1.02	0.43	0.29	0.42	0.88	0.19	1.02	0.63	0.20	0.53	0.55	0.56
Control Delay	121.1	12.6	3.1	21.2	56.1	1.1	87.8	47.1	6.3	38.4	49.6	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.1	12.6	3.1	21.2	56.1	1.1	87.8	47.1	6.3	38.4	49.6	9.2
LOS	F	B	A	C	E	A	F	D	A	D	D	A
Approach Delay		35.0			49.2			57.8			33.5	
Approach LOS		C			D			E			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 43.5

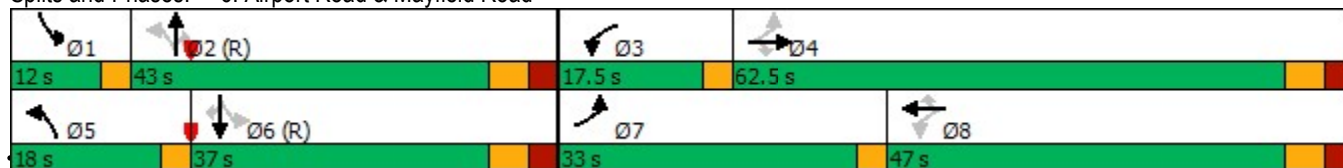
Intersection LOS: D

Intersection Capacity Utilization 110.7%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road





















# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2026 FT PM











01/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	80	7	23	279	7	21	228	74	6	67	7
Future Volume (vph)	11	80	7	23	279	7	21	228	74	6	67	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	87	8	25	303	8	23	248	80	7	73	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	107	336	351	88								
Volume Left (vph)	12	25	23	7								
Volume Right (vph)	8	8	80	8								
Hadj (s)	0.06	0.02	-0.05	0.00								
Departure Headway (s)	5.8	5.3	5.2	5.7								
Degree Utilization, x	0.17	0.50	0.51	0.14								
Capacity (veh/h)	556	637	644	553								
Control Delay (s)	9.9	13.5	13.6	9.7								
Approach Delay (s)	9.9	13.5	13.6	9.7								
Approach LOS	A	B	B	A								
Intersection Summary												
Delay				12.7								
Level of Service				B								
Intersection Capacity Utilization				48.7%	ICU Level of Service	A						
Analysis Period (min)				15								

# HCM Unsignalized Intersection Capacity Analysis




























## 2: Torbram Road & Torbram Connector

2026 FT PM  
01/20/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	110	47	213	52	10	88
Future Volume (Veh/h)	110	47	213	52	10	88
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	51	232	57	11	96
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	378	260			289	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378	260			289	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	93			99	
cM capacity (veh/h)	618	778			1273	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	120	51	289	107		
Volume Left	120	0	0	11		
Volume Right	0	51	57	0		
cSH	618	778	1700	1273		
Volume to Capacity	0.19	0.07	0.17	0.01		
Queue Length 95th (m)	5.7	1.7	0.0	0.2		
Control Delay (s)	12.2	10.0	0.0	0.9		
Lane LOS	B	A		A		
Approach Delay (s)	11.5		0.0	0.9		
Approach LOS	B					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			27.1%		ICU Level of Service	A
Analysis Period (min)			15			













Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FT PM  
01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	68	1649	243	167	1678	42	305	148	169	49	83	122
Future Volume (vph)	68	1649	243	167	1678	42	305	148	169	49	83	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.996				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4850	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.088			0.077			0.703			0.641		
Satd. Flow (perm)	161	4734	1597	145	4850	0	1321	1942	1587	1204	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		4				128			87
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	68	1649	243	167	1678	42	305	148	169	49	83	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1649	243	167	1720	0	305	148	169	49	83	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	73.0	73.0	14.0	79.0		48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	5.9%	54.1%	54.1%	10.4%	58.5%		35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	5.0	65.7	65.7	11.0	71.7		40.9	40.9	40.9	40.9	40.9	40.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	75.0	65.7	65.7	84.0	71.7		40.9	40.9	40.9	40.9	40.9	40.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2026 FT PM  
01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.56	0.49	0.49	0.62	0.53		0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.46	0.72	0.27	0.75	0.67		0.76	0.25	0.30	0.13	0.14	0.24
Control Delay	21.1	29.5	3.0	67.1	9.3		56.5	37.0	11.7	35.6	35.1	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	29.5	3.0	67.1	9.3		56.5	37.0	11.7	35.6	35.1	13.3
LOS	C	C	A	E	A		E	D	B	D	D	B
Approach Delay	25.9			14.5			39.7			24.7		
Approach LOS	C			B			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 23.1

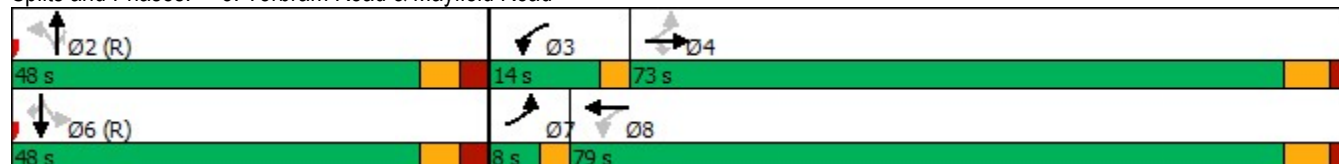
Intersection LOS: C

Intersection Capacity Utilization 89.3%

ICU Level of Service E

Analysis Period (min) 15



























Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2026 FT PM













01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	59	1713	98	41	1574	27	104	0	23	42	0	186
Future Volume (vph)	59	1713	98	41	1574	27	104	0	23	42	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.077			0.087			0.604			0.742		
Satd. Flow (perm)	123	4734	1566	160	4864	1170	1150	1583	0	1060	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			53		57			116	
Link Speed (k/h)		80			80			50			50	
Link Distance (m)		716.7			643.7			353.1			866.6	
Travel Time (s)		32.3			29.0			25.4			62.4	
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	59	1713	98	41	1574	27	104	0	23	42	0	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	1713	98	41	1574	27	104	23	0	42	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	

# Lanes, Volumes, Timings

## 4: Mayfield Connector & Mayfield Road

2026 FT PM  
01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	9.8	102.8	102.8	93.0	93.0	93.0	32.2	32.2		32.2	32.2	
Total Split (%)	7.3%	76.1%	76.1%	68.9%	68.9%	68.9%	23.9%	23.9%		23.9%	23.9%	
Maximum Green (s)	6.8	95.7	95.7	85.9	85.9	85.9	25.6	25.6		25.6	25.6	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	72.8	68.7	68.7	60.8	60.8	60.8	52.6	52.6		52.6	52.6	
Actuated g/C Ratio	0.54	0.51	0.51	0.45	0.45	0.45	0.39	0.39		0.39	0.39	
v/c Ratio	0.45	0.71	0.12	0.57	0.72	0.05	0.23	0.04		0.10	0.32	
Control Delay	41.8	51.4	16.3	68.2	53.6	9.4	32.1	0.1		30.8	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	41.8	51.4	16.3	68.2	53.6	9.4	32.1	0.1		30.8	14.2	
LOS	D	D	B	E	D	A	C	A		C	B	
Approach Delay		49.2			53.3			26.3			17.3	
Approach LOS		D			D			C			B	

### Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 48.3

Intersection LOS: D

Intersection Capacity Utilization 87.4%

ICU Level of Service E






























Analysis Period (min) 15

### Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FT PM  
01/20/2023













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 			 	
Traffic Volume (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Future Volume (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	3630	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.097			0.283			0.371			0.326		
Satd. Flow (perm)	132	4939	1493	492	3630	961	663	3386	1426	506	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			230			80			94			296
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Shared Lane Traffic (%)												
Lane Group Flow (vph)	337	970	230	114	946	70	367	574	94	120	408	296
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2026 FT PM

01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	41.1	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	32.0	77.2	77.2	45.2	45.2	45.2	18.0	42.8	42.8	15.0	39.8	39.8
Total Split (%)	23.7%	57.2%	57.2%	33.5%	33.5%	33.5%	13.3%	31.7%	31.7%	11.1%	29.5%	29.5%
Maximum Green (s)	29.0	70.1	70.1	38.1	38.1	38.1	15.0	35.9	35.9	12.0	32.9	32.9
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0	27.0	27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0	0		0	0
Act Effect Green (s)	74.2	70.1	70.1	38.1	38.1	38.1	54.8	37.4	37.4	47.3	32.9	32.9
Actuated g/C Ratio	0.55	0.52	0.52	0.28	0.28	0.28	0.41	0.28	0.28	0.35	0.24	0.24
v/c Ratio	1.05	0.38	0.26	0.83	0.92	0.21	0.96	0.61	0.20	0.47	0.50	0.54
Control Delay	129.6	10.2	2.8	87.8	62.1	7.5	70.3	46.2	8.2	32.9	46.5	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.6	10.2	2.8	87.8	62.1	7.5	70.3	46.2	8.2	32.9	46.5	8.4
LOS	F	B	A	F	E	A	E	D	A	C	D	A
Approach Delay		35.3			61.3			51.3			30.8	
Approach LOS		D			E			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 44.6

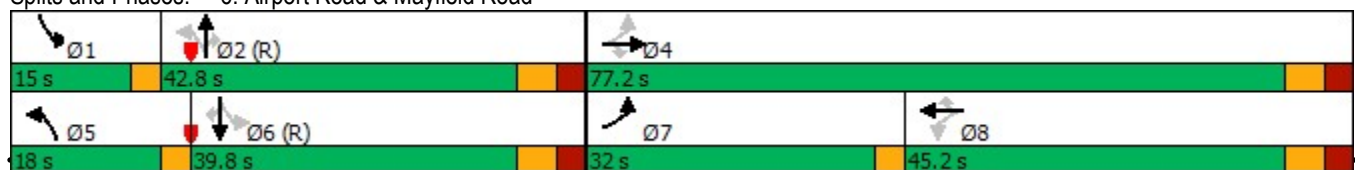
Intersection LOS: D

Intersection Capacity Utilization 110.7%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2026 Future Total PM 2022-5841 4:00 pm 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates






















Page 10























# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2026 FT PM













01/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	854	90	17	552	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	854	90	17	552	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	854	94	17	552	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1174	1696	277	1402	1608	432	559				953	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1174	1696	277	1402	1608	432	559				953	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	93	99	89	0	100	99	87				95	
cM capacity (veh/h)	111	77	688	72	87	575	595				369	
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	8	77	113	4	78	427	427	94	17	276	276	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	111	624	72	575	595	1700	1700	1700	369	1700	1700	1700
Volume to Capacity	0.07	0.12	1.56	0.01	0.13	0.25	0.25	0.06	0.05	0.16	0.16	0.00
Queue Length 95th (m)	1.8	3.4	76.2	0.2	3.6	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Control Delay (s)	39.9	11.6	406.6	11.3	12.0	0.0	0.0	0.0	15.2	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				C			
Approach Delay (s)	14.2	393.1		0.9					0.5			
Approach LOS	B	F										
Intersection Summary												
Average Delay	26.8											
Intersection Capacity Utilization	49.9%			ICU Level of Service					A			
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	0	82	34	0	5	63	754	26	2	418	30
Future Volume (vph)	146	0	82	34	0	5	63	754	26	2	418	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3080	0
Flt Permitted	0.754			0.704			0.493			0.351		
Satd. Flow (perm)	1161	1342	0	984	1324	0	664	3449	992	412	3080	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		380			157				47		9	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	146	0	82	34	0	5	63	754	26	2	418	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	82	0	34	5	0	63	754	26	2	448	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2026 FT PM  
01/20/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		35.6	35.6	35.6	35.6	35.6	
Total Split (s)	52.0	52.0		52.0	52.0		68.0	68.0	68.0	68.0	68.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	
Maximum Green (s)	43.8	43.8		43.8	43.8		61.4	61.4	61.4	61.4	61.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	17.5	17.5		17.5	17.5		64.3	64.3	64.3	64.3	64.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.67	0.67	0.67	0.67	0.67	
v/c Ratio	0.70	0.15		0.19	0.01		0.14	0.33	0.04	0.01	0.22	
Control Delay	53.7	0.6		34.1	0.0		8.3	8.0	1.1	7.5	7.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.7	0.6		34.1	0.0		8.3	8.0	1.1	7.5	7.1	
LOS	D	A		C	A		A	A	A	A	A	
Approach Delay		34.6			29.7			7.8			7.1	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 96.6

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 12.1

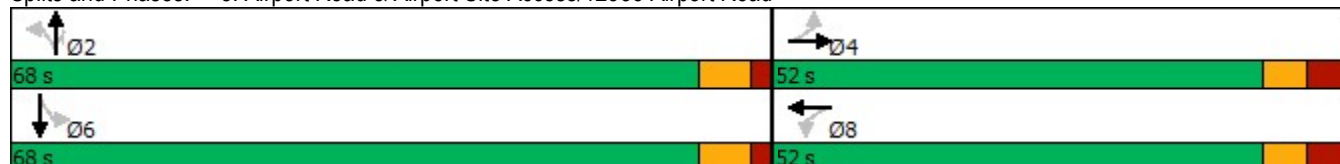
Intersection LOS: B

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 8: Airport Road & Airport Site Access/12333 Airport Road



# HCM Unsignalized Intersection Capacity Analysis

## 12: Torbram Road & Site Access "1"










2026 FT PM  
01/20/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	16	248	15	4	220
Future Volume (Veh/h)	30	16	248	15	4	220
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	17	270	16	4	239
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	525	278			286	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	525	278			286	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	98			100	
cM capacity (veh/h)	515	766			1288	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	50	286	243			
Volume Left	33	0	4			
Volume Right	17	16	0			
cSH	579	1700	1288			
Volume to Capacity	0.09	0.17	0.00			
Queue Length 95th (m)	2.3	0.0	0.1			
Control Delay (s)	11.8	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	11.8	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			24.8%	ICU Level of Service	A	
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis





















## 13: Torbram Road & Site Access "2"

2026 FT PM  
01/20/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	16	249	15	4	194
Future Volume (Veh/h)	30	16	249	15	4	194
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	17	271	16	4	211
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	498	279			287	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	498	279			287	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	98			100	
cM capacity (veh/h)	534	765			1287	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	50	287	215			
Volume Left	33	0	4			
Volume Right	17	16	0			
cSH	595	1700	1287			
Volume to Capacity	0.08	0.17	0.00			
Queue Length 95th (m)	2.2	0.0	0.1			
Control Delay (s)	11.6	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	11.6	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			24.0%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis 14: Mayfield Connector & Airport Connector













2026 FT PM  
01/20/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	14	10	77	7	26	3	25	54	60	69	0
Future Volume (vph)	0	14	10	77	7	26	3	25	54	60	69	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	15	11	84	8	28	3	27	59	65	75	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	0	26	84	36	3	86	65	75				
Volume Left (vph)	0	0	84	0	3	0	65	0				
Volume Right (vph)	0	11	0	28	0	59	0	0				
Hadj (s)	0.00	-0.26	0.53	-0.51	0.53	-0.45	0.53	0.03				
Departure Headway (s)	5.2	4.9	5.6	4.6	5.6	4.6	5.5	5.0				
Degree Utilization, x	0.00	0.04	0.13	0.05	0.00	0.11	0.10	0.10				
Capacity (veh/h)	670	692	612	748	622	754	629	694				
Control Delay (s)	7.0	6.9	8.3	6.6	7.4	6.9	7.9	7.4				
Approach Delay (s)	6.9		7.8		7.0		7.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.5									
Level of Service			A									
Intersection Capacity Utilization			27.6%		ICU Level of Service				A			
Analysis Period (min)			15									



# HCM Unsignalized Intersection Capacity Analysis 15: Mayfield Connector & Torbram Connector

2026 FT PM  
01/20/2023

















						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	39	15	0	0	0
Future Volume (vph)	0	39	15	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	42	16	0	0	0
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total (vph)	0	42	16	0	0	
Volume Left (vph)	0	0	16	0	0	
Volume Right (vph)	0	42	0	0	0	
Hadj (s)	0.00	-0.67	0.53	0.00	0.00	
Departure Headway (s)	4.5	3.9	5.1	4.6	4.4	
Degree Utilization, x	0.00	0.05	0.02	0.00	0.00	
Capacity (veh/h)	796	921	687	785	814	
Control Delay (s)	6.3	5.9	7.0	6.4	7.4	
Approach Delay (s)	5.9		7.0		0.0	
Approach LOS	A		A		A	
Intersection Summary						
Delay			6.2			
Level of Service			A			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2031 FT AM

01/19/2023











												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	190	19	45	81	1	6	82	29	4	286	11
Future Volume (vph)	6	190	19	45	81	1	6	82	29	4	286	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	207	21	49	88	1	7	89	32	4	311	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	235	138	128	327								
Volume Left (vph)	7	49	7	4								
Volume Right (vph)	21	1	32	12								
Hadj (s)	0.02	0.08	-0.06	-0.01								
Departure Headway (s)	5.4	5.6	5.4	5.1								
Degree Utilization, x	0.35	0.22	0.19	0.47								
Capacity (veh/h)	617	578	593	659								
Control Delay (s)	11.3	10.1	9.7	12.6								
Approach Delay (s)	11.3	10.1	9.7	12.6								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay				11.4								
Level of Service				B								
Intersection Capacity Utilization				45.3%	ICU Level of Service	A						
Analysis Period (min)				15								

# HCM Unsignalized Intersection Capacity Analysis

## 2: Torbram Road & Torbram Connector

2031 FT AM





























01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	66	8	120	112	28	328
Future Volume (Veh/h)	66	8	120	112	28	328
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	9	130	122	30	357
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	608	191			252	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	608	191			252	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	99			98	
cM capacity (veh/h)	448	851			1313	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	72	9	252	387		
Volume Left	72	0	0	30		
Volume Right	0	9	122	0		
cSH	448	851	1700	1313		
Volume to Capacity	0.16	0.01	0.15	0.02		
Queue Length 95th (m)	4.5	0.3	0.0	0.6		
Control Delay (s)	14.6	9.3	0.0	0.8		
Lane LOS	B	A		A		
Approach Delay (s)	14.0		0.0	0.8		
Approach LOS	B					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			45.6%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2031 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	116	1997	259	188	1634	66	292	108	135	55	261	74
Future Volume (vph)	116	1997	259	188	1634	66	292	108	135	55	261	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4844	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.077			0.074			0.510			0.687		
Satd. Flow (perm)	140	4734	1597	139	4844	0	958	1942	1587	1291	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		6				132			74
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	116	1997	259	188	1634	66	292	108	135	55	261	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	1997	259	188	1700	0	292	108	135	55	261	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	10.0	59.0	59.0	12.0	61.0		49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	8.3%	49.2%	49.2%	10.0%	50.8%		40.8%	40.8%	40.8%	40.8%	40.8%	40.8%
Maximum Green (s)	7.0	51.7	51.7	9.0	53.7		41.9	41.9	41.9	41.9	41.9	41.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	63.0	51.7	51.7	67.0	53.7		41.9	41.9	41.9	41.9	41.9	41.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2031 FT AM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.52	0.43	0.43	0.56	0.45		0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.70	0.98	0.31	0.94	0.78		0.87	0.16	0.21	0.12	0.38	0.13
Control Delay	41.1	49.5	3.5	80.4	30.4		63.7	27.8	5.6	27.6	31.5	6.5
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	41.1	49.5	3.5	80.4	30.4		63.7	27.8	5.6	27.6	31.5	6.5
LOS	D	D	A	F	C		E	C	A	C	C	A
Approach Delay	44.1			35.4			41.8			26.2		
Approach LOS	D			D			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 39.3







Intersection LOS: D

Intersection Capacity Utilization 100.2%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road


 Ø2 (R)	 Ø3	 Ø4
49 s	12 s	59 s
 Ø6 (R)	 Ø7	 Ø8
49 s	10 s	61 s

# Lanes, Volumes, Timings

## 4: Mayfield Connector & Mayfield Road

2031 FT AM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1957	110	14	1696	56	231	0	35	28	0	49
Future Volume (vph)	166	1957	110	14	1696	56	231	0	35	28	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.077			0.081			0.725			0.734		
Satd. Flow (perm)	123	4734	1566	149	4864	1170	1381	1583	0	1049	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			60			65			280
Link Speed (k/h)		80			80			50				50
Link Distance (m)		716.7			643.7			353.1				866.6
Travel Time (s)		32.3			29.0			25.4				62.4
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	166	1957	110	14	1696	56	231	0	35	28	0	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	1957	110	14	1696	56	231	35	0	28	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	

Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2031 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	20.7	79.9	79.9	59.2	59.2	59.2	40.1	40.1		40.1	40.1	
Total Split (%)	17.3%	66.6%	66.6%	49.3%	49.3%	49.3%	33.4%	33.4%		33.4%	33.4%	
Maximum Green (s)	17.7	72.8	72.8	52.1	52.1	52.1	33.5	33.5		33.5	33.5	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	70.0	65.9	65.9	49.2	49.2	49.2	40.4	40.4		40.4	40.4	
Actuated g/C Ratio	0.58	0.55	0.55	0.41	0.41	0.41	0.34	0.34		0.34	0.34	
v/c Ratio	0.72	0.75	0.12	0.23	0.85	0.11	0.50	0.06		0.08	0.08	
Control Delay	46.7	39.2	13.0	28.2	36.4	5.2	38.5	2.3		31.7	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.7	39.2	13.0	28.2	36.4	5.2	38.5	2.3		31.7	0.2	
LOS	D	D	B	C	D	A	D	A		C	A	
Approach Delay		38.4			35.3			33.7			11.7	
Approach LOS		D			D			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 36.4

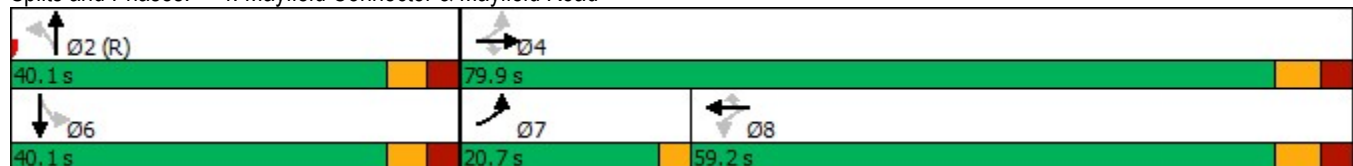
Intersection LOS: D

Intersection Capacity Utilization 84.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road



































Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2031 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	249	1113	449	103	1162	57	285	322	91	85	662	209
Future Volume (vph)	249	1113	449	103	1162	57	285	322	91	85	662	209
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.106			0.217			0.189			0.557		
Satd. Flow (perm)	144	4939	1493	377	5216	961	338	3386	1426	865	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			382			145			119			209
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	249	1113	449	103	1162	57	285	322	91	85	662	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	249	1113	449	103	1162	57	285	322	91	85	662	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2031 FT AM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	23.0	49.5	49.5	14.6	41.1	41.1	19.0	46.9	46.9	9.0	36.9	36.9
Total Split (%)	19.2%	41.3%	41.3%	12.2%	34.3%	34.3%	15.8%	39.1%	39.1%	7.5%	30.8%	30.8%
Maximum Green (s)	20.0	42.4	42.4	11.6	34.0	34.0	16.0	40.0	40.0	6.0	30.0	30.0
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	61.1	45.5	45.5	47.2	34.6	34.6	52.9	41.8	41.8	40.2	30.4	30.4
Actuated g/C Ratio	0.51	0.38	0.38	0.39	0.29	0.29	0.44	0.35	0.35	0.34	0.25	0.25
v/c Ratio	0.96	0.59	0.56	0.43	0.77	0.15	0.88	0.27	0.16	0.27	0.78	0.42
Control Delay	90.2	42.8	18.4	22.4	43.5	0.8	51.2	29.5	2.9	23.8	49.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.2	42.8	18.4	22.4	43.5	0.8	51.2	29.5	2.9	23.8	49.2	7.7
LOS	F	D	B	C	D	A	D	C	A	C	D	A
Approach Delay		43.3			40.0			34.9			37.9	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 40.1

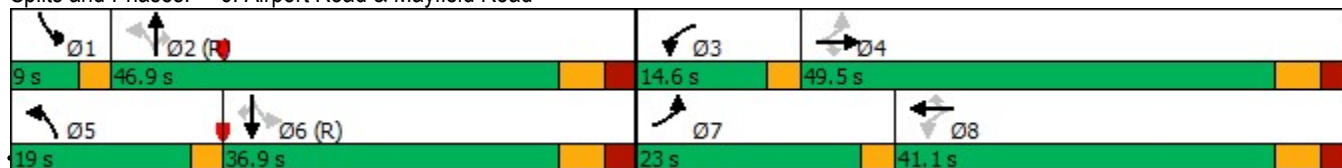
Intersection LOS: D

Intersection Capacity Utilization 101.3%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2031 Future Total AM 2022-5841 9:00 am 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates























Page 10

# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2031 FT AM

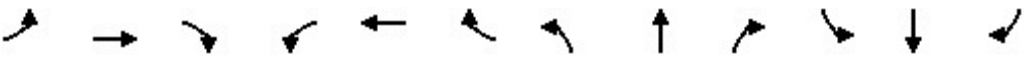
01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	634	83	2	808	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	634	83	2	808	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	634	86	2	808	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1239	1630	405	1172	1547	322	812				725	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1239	1630	405	1172	1547	322	812				725	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	95	99	94	35	100	97	89				100	
cM capacity (veh/h)	103	91	565	120	102	677	435				489	
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	5	34	78	17	46	317	317	86	2	404	404	3
Volume Left	5	0	78	0	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	103	490	120	677	435	1700	1700	1700	489	1700	1700	1700
Volume to Capacity	0.05	0.07	0.65	0.03	0.11	0.19	0.19	0.05	0.00	0.24	0.24	0.00
Queue Length 95th (m)	1.2	1.8	27.0	0.6	2.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	41.9	12.9	78.3	10.5	14.3	0.0	0.0	0.0	12.4	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				B			
Approach Delay (s)	16.6	66.2		0.9					0.0			
Approach LOS	C	F										
Intersection Summary												
Average Delay	4.4											
Intersection Capacity Utilization	46.7%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2031 FT AM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	77	77	0	11	121	422	61	17	652	95
Future Volume (vph)	22	0	77	77	0	11	121	422	61	17	652	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3062	0
Flt Permitted	0.750			0.707			0.364			0.506		
Satd. Flow (perm)	1155	1342	0	988	1324	0	490	3449	992	594	3062	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		273			449				61		25	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	22	0	77	77	0	11	121	422	61	17	652	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	77	0	77	11	0	121	422	61	17	747	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2031 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		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	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	31.8	31.8		31.8	31.8		73.4	73.4	73.4	73.4	73.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	14.6	14.6		14.6	14.6		79.2	79.2	79.2	79.2	79.2	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.77	0.77	0.77	0.77	0.77	
v/c Ratio	0.13	0.18		0.55	0.02		0.32	0.16	0.08	0.04	0.32	
Control Delay	40.1	0.9		56.7	0.1		8.8	4.7	1.7	5.4	5.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	40.1	0.9		56.7	0.1		8.8	4.7	1.7	5.4	5.4	
LOS	D	A		E	A		A	A	A	A	A	
Approach Delay		9.6			49.6			5.3			5.4	
Approach LOS		A			D			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 102.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 8.1

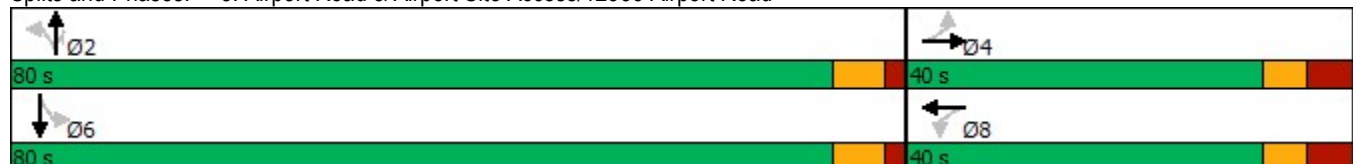
Intersection LOS: A

Intersection Capacity Utilization 59.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Airport Road & Airport Site Access/12333 Airport Road












# HCM Unsignalized Intersection Capacity Analysis

## 12: Torbram Road & Site Access "1"

2031 FT AM










01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	263	36	12	382
Future Volume (Veh/h)	12	3	263	36	12	382
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	286	39	13	415
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	746	306			325	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	746	306			325	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			99	
cM capacity (veh/h)	380	739			1246	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	325	428			
Volume Left	13	0	13			
Volume Right	3	39	0			
cSH	418	1700	1246			
Volume to Capacity	0.04	0.19	0.01			
Queue Length 95th (m)	1.0	0.0	0.3			
Control Delay (s)	14.0	0.0	0.3			
Lane LOS	B		A			
Approach Delay (s)	14.0	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay		0.5				
Intersection Capacity Utilization		39.8%	ICU Level of Service	A		
Analysis Period (min)		15				

# HCM Unsignalized Intersection Capacity Analysis

## 13: Torbram Road & Site Access "2"





















2031 FT AM  
01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	229	36	12	382
Future Volume (Veh/h)	12	3	229	36	12	382
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	249	39	13	415
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	710	268			288	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	710	268			288	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			99	
cM capacity (veh/h)	399	775			1286	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	288	428			
Volume Left	13	0	13			
Volume Right	3	39	0			
cSH	439	1700	1286			
Volume to Capacity	0.04	0.17	0.01			
Queue Length 95th (m)	0.9	0.0	0.2			
Control Delay (s)	13.5	0.0	0.3			
Lane LOS	B		A			
Approach Delay (s)	13.5	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			39.8%	ICU Level of Service		A
Analysis Period (min)			15			















# HCM Unsignalized Intersection Capacity Analysis 14: Mayfield Connector & Airport Connector

2031 FT AM  
01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	6	2	44	15	63	9	66	58	23	24	0
Future Volume (vph)	0	6	2	44	15	63	9	66	58	23	24	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	7	2	48	16	68	10	72	63	25	26	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	0	9	48	84	10	135	25	26				
Volume Left (vph)	0	0	48	0	10	0	25	0				
Volume Right (vph)	0	2	0	68	0	63	0	0				
Hadj (s)	0.00	-0.12	0.53	-0.53	0.53	-0.29	0.53	0.03				
Departure Headway (s)	5.1	5.0	5.5	4.4	5.4	4.6	5.5	5.0				
Degree Utilization, x	0.00	0.01	0.07	0.10	0.02	0.17	0.04	0.04				
Capacity (veh/h)	685	688	625	774	641	755	627	691				
Control Delay (s)	6.9	6.8	7.7	6.7	7.3	7.4	7.5	7.0				
Approach Delay (s)	6.8		7.1		7.4		7.3					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.2									
Level of Service			A									
Intersection Capacity Utilization			29.5%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis 15: Mayfield Connector & Torbram Connector

2031 FT AM  
01/19/2023

















						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	18	35	0	0	0
Future Volume (vph)	0	18	35	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	20	38	0	0	0
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total (vph)	0	20	38	0	0	
Volume Left (vph)	0	0	38	0	0	
Volume Right (vph)	0	20	0	0	0	
Hadj (s)	0.00	-0.67	0.53	0.00	0.00	
Departure Headway (s)	4.6	3.9	5.1	4.5	4.4	
Degree Utilization, x	0.00	0.02	0.05	0.00	0.00	
Capacity (veh/h)	783	892	696	796	821	
Control Delay (s)	6.4	5.8	7.2	6.3	7.4	
Approach Delay (s)	5.8		7.2		0.0	
Approach LOS	A		A		A	
Intersection Summary						
Delay			6.7			
Level of Service			A			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2031 FT PM

01/19/2023











												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	89	7	23	307	7	21	249	74	6	73	7
Future Volume (vph)	11	89	7	23	307	7	21	249	74	6	73	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	97	8	25	334	8	23	271	80	7	79	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	117	367	374	94								
Volume Left (vph)	12	25	23	7								
Volume Right (vph)	8	8	80	8								
Hadj (s)	0.06	0.02	-0.05	0.00								
Departure Headway (s)	6.0	5.5	5.4	6.0								
Degree Utilization, x	0.19	0.56	0.56	0.16								
Capacity (veh/h)	532	622	625	514								
Control Delay (s)	10.4	15.2	15.2	10.1								
Approach Delay (s)	10.4	15.2	15.2	10.1								
Approach LOS	B	C	C	B								
Intersection Summary												
Delay				14.1								
Level of Service				B								
Intersection Capacity Utilization				51.8%	ICU Level of Service	A						
Analysis Period (min)				15								

# HCM Unsignalized Intersection Capacity Analysis

## 2: Torbram Road & Torbram Connector

2031 FT PM





























01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	110	47	232	52	10	96
Future Volume (Veh/h)	110	47	232	52	10	96
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	51	252	57	11	104
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	406	280			309	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	406	280			309	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	80	93			99	
cM capacity (veh/h)	595	758			1252	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	120	51	309	115		
Volume Left	120	0	0	11		
Volume Right	0	51	57	0		
cSH	595	758	1700	1252		
Volume to Capacity	0.20	0.07	0.18	0.01		
Queue Length 95th (m)	6.0	1.7	0.0	0.2		
Control Delay (s)	12.6	10.1	0.0	0.8		
Lane LOS	B	B		A		
Approach Delay (s)	11.8		0.0	0.8		
Approach LOS	B					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			28.1%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2031 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	68	1953	243	167	2026	42	305	161	169	49	88	122
Future Volume (vph)	68	1953	243	167	2026	42	305	161	169	49	88	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4854	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.064			0.061			0.700			0.625		
Satd. Flow (perm)	117	4734	1597	115	4854	0	1315	1942	1587	1174	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		3				140			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	68	1953	243	167	2026	42	305	161	169	49	88	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1953	243	167	2068	0	305	161	169	49	88	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	70.0	70.0	15.0	77.0		50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	5.9%	51.9%	51.9%	11.1%	57.0%		37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
Maximum Green (s)	5.0	62.7	62.7	12.0	69.7		42.9	42.9	42.9	42.9	42.9	42.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	72.0	62.7	62.7	82.0	69.7		42.9	42.9	42.9	42.9	42.9	42.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2031 FT PM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.53	0.46	0.46	0.61	0.52		0.32	0.32	0.32	0.32	0.32	0.32
v/c Ratio	0.56	0.89	0.28	0.77	0.82		0.73	0.26	0.28	0.13	0.14	0.23
Control Delay	33.0	39.2	3.3	67.2	23.2		52.8	35.7	9.4	34.1	33.8	13.6
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	33.0	39.2	3.3	67.2	23.2		52.8	35.7	9.4	34.1	33.8	13.6
LOS	C	D	A	E	C		D	D	A	C	C	B
Approach Delay	35.1			26.5			36.9			24.3		
Approach LOS	D			C			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 31.2

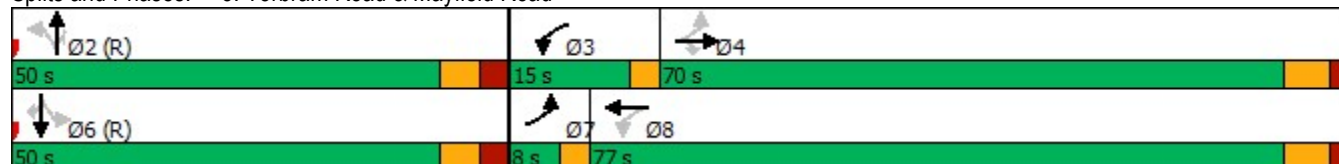
Intersection LOS: C

Intersection Capacity Utilization 95.1%

ICU Level of Service F

Analysis Period (min) 15

























Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2031 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	2036	98	41	1946	27	104	0	23	42	0	186
Future Volume (vph)	59	2036	98	41	1946	27	104	0	23	42	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.054			0.065			0.565			0.742		
Satd. Flow (perm)	86	4734	1566	120	4864	1170	1076	1583	0	1060	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			93			53		57			98	
Link Speed (k/h)		80			80			50			50	
Link Distance (m)		716.7			643.7			353.1			866.6	
Travel Time (s)		32.3			29.0			25.4			62.4	
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	59	2036	98	41	1946	27	104	0	23	42	0	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	2036	98	41	1946	27	104	23	0	42	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	















# Lanes, Volumes, Timings

## 4: Mayfield Connector & Mayfield Road

2031 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	10.0	102.0	102.0	92.0	92.0	92.0	33.0	33.0		33.0	33.0	
Total Split (%)	7.4%	75.6%	75.6%	68.1%	68.1%	68.1%	24.4%	24.4%		24.4%	24.4%	
Maximum Green (s)	7.0	94.9	94.9	84.9	84.9	84.9	26.4	26.4		26.4	26.4	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	86.4	82.3	82.3	74.4	74.4	74.4	39.0	39.0		39.0	39.0	
Actuated g/C Ratio	0.64	0.61	0.61	0.55	0.55	0.55	0.29	0.29		0.29	0.29	
v/c Ratio	0.48	0.71	0.10	0.62	0.73	0.04	0.34	0.05		0.14	0.42	
Control Delay	34.2	35.0	9.6	63.0	38.3	2.6	45.2	0.2		42.0	23.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	34.2	35.0	9.6	63.0	38.3	2.6	45.2	0.2		42.0	23.5	
LOS	C	D	A	E	D	A	D	A		D	C	
Approach Delay		33.8			38.4			37.0			26.9	
Approach LOS		C			D			D			C	

### Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 35.6

Intersection LOS: D

Intersection Capacity Utilization 87.5%

ICU Level of Service E

Analysis Period (min) 15































### Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2031 FT PM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	347	1138	238	120	1153	73	380	600	98	124	424	309
Future Volume (vph)	347	1138	238	120	1153	73	380	600	98	124	424	309
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.108			0.238			0.343			0.349		
Satd. Flow (perm)	147	4939	1493	414	5216	961	613	3386	1426	542	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			211			128			106			309
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	347	1138	238	120	1153	73	380	600	98	124	424	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	347	1138	238	120	1153	73	380	600	98	124	424	309
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2031 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	35.0	59.2	59.2	17.0	41.2	41.2	21.0	44.8	44.8	14.0	37.8	37.8
Total Split (%)	25.9%	43.9%	43.9%	12.6%	30.5%	30.5%	15.6%	33.2%	33.2%	10.4%	28.0%	28.0%
Maximum Green (s)	32.0	52.1	52.1	14.0	34.1	34.1	18.0	37.9	37.9	11.0	30.9	30.9
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	73.2	56.6	56.6	47.7	34.1	34.1	55.8	38.9	38.9	44.8	30.9	30.9
Actuated g/C Ratio	0.54	0.42	0.42	0.35	0.25	0.25	0.41	0.29	0.29	0.33	0.23	0.23
v/c Ratio	0.99	0.55	0.32	0.52	0.88	0.22	0.95	0.62	0.20	0.50	0.55	0.57
Control Delay	104.0	22.2	7.0	26.9	57.0	1.7	68.2	45.1	6.6	33.7	49.1	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	0.0
Total Delay	104.0	22.2	7.0	26.9	57.0	1.7	68.2	45.1	6.6	33.7	49.1	9.0
LOS	F	C	A	C	E	A	E	D	A	C	D	A
Approach Delay		36.6			51.3			49.7			32.4	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 42.7

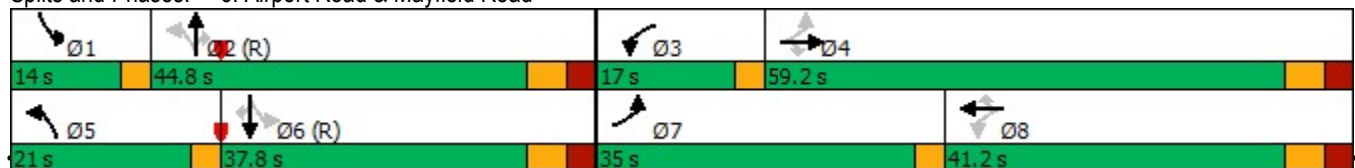
Intersection LOS: D

Intersection Capacity Utilization 111.9%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2031 Future Total PM 2022-5841 4:00 pm 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates























Page 10

# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2031 FT PM























01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	887	90	17	575	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	887	90	17	575	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	887	94	17	575	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1214	1752	288	1446	1664	448	582				986	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1214	1752	288	1446	1664	448	582				986	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	92	99	89	0	100	99	87				95	
cM capacity (veh/h)	103	71	676	66	80	561	578				354	
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	8	77	113	4	78	444	444	94	17	288	288	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	103	608	66	561	578	1700	1700	1700	354	1700	1700	1700
Volume to Capacity	0.08	0.13	1.70	0.01	0.13	0.26	0.26	0.06	0.05	0.17	0.17	0.00
Queue Length 95th (m)	2.0	3.5	80.3	0.2	3.7	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Control Delay (s)	42.8	11.8	474.0	11.5	12.2	0.0	0.0	0.0	15.7	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				C			
Approach Delay (s)	14.7			458.2			0.9			0.4		
Approach LOS	B			F								
Intersection Summary												
Average Delay			30.2									
Intersection Capacity Utilization			50.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2031 FT PM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	0	82	34	0	5	63	785	26	2	438	30
Future Volume (vph)	146	0	82	34	0	5	63	785	26	2	438	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3080	0
Flt Permitted	0.754			0.704			0.483			0.338		
Satd. Flow (perm)	1161	1342	0	984	1324	0	651	3449	992	397	3080	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		360			145				47		9	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	146	0	82	34	0	5	63	785	26	2	438	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	82	0	34	5	0	63	785	26	2	468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2031 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		35.6	35.6	35.6	35.6	35.6	
Total Split (s)	52.0	52.0		52.0	52.0		68.0	68.0	68.0	68.0	68.0	
Total Split (%)	43.3%	43.3%		43.3%	43.3%		56.7%	56.7%	56.7%	56.7%	56.7%	
Maximum Green (s)	43.8	43.8		43.8	43.8		61.4	61.4	61.4	61.4	61.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	17.5	17.5		17.5	17.5		64.3	64.3	64.3	64.3	64.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.67	0.67	0.67	0.67	0.67	
v/c Ratio	0.70	0.15		0.19	0.01		0.15	0.34	0.04	0.01	0.23	
Control Delay	53.7	0.6		34.1	0.0		8.3	8.1	1.1	7.5	7.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	53.7	0.6		34.1	0.0		8.3	8.1	1.1	7.5	7.2	
LOS	D	A		C	A		A	A	A	A	A	
Approach Delay		34.6			29.7			7.9			7.2	
Approach LOS		C			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 96.6

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 12.0

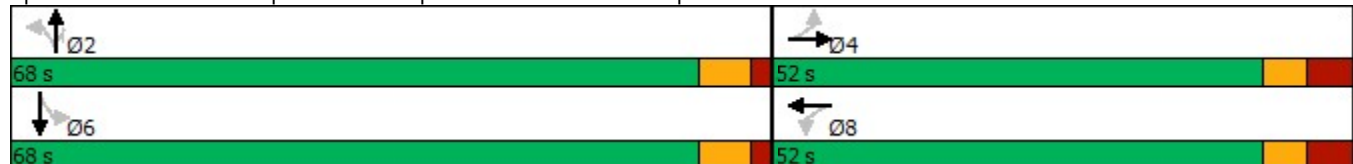
Intersection LOS: B

Intersection Capacity Utilization 64.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Airport Road & Airport Site Access/12333 Airport Road












# HCM Unsignalized Intersection Capacity Analysis

## 12: Torbram Road & Site Access "1"

2031 FT PM

01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	16	267	15	4	228
Future Volume (Veh/h)	30	16	267	15	4	228
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	17	290	16	4	248
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	554	298			306	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	554	298			306	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			100	
cM capacity (veh/h)	495	746			1266	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	50	306	252			
Volume Left	33	0	4			
Volume Right	17	16	0			
cSH	559	1700	1266			
Volume to Capacity	0.09	0.18	0.00			
Queue Length 95th (m)	2.3	0.0	0.1			
Control Delay (s)	12.1	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	12.1	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			25.2%	ICU Level of Service		A
Analysis Period (min)			15			












# HCM Unsignalized Intersection Capacity Analysis

## 13: Torbram Road & Site Access "2"





















2031 FT PM

01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	16	268	15	4	202
Future Volume (Veh/h)	30	16	268	15	4	202
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	17	291	16	4	220
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	527	299			307	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	527	299			307	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	98			100	
cM capacity (veh/h)	513	745			1265	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	50	307	224			
Volume Left	33	0	4			
Volume Right	17	16	0			
cSH	574	1700	1265			
Volume to Capacity	0.09	0.18	0.00			
Queue Length 95th (m)	2.3	0.0	0.1			
Control Delay (s)	11.9	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	11.9	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			25.0%	ICU Level of Service		A
Analysis Period (min)			15			













# HCM Unsignalized Intersection Capacity Analysis 14: Mayfield Connector & Airport Connector

2031 FT PM  
01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	14	10	77	7	26	3	25	54	60	69	0
Future Volume (vph)	0	14	10	77	7	26	3	25	54	60	69	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	15	11	84	8	28	3	27	59	65	75	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	0	26	84	36	3	86	65	75				
Volume Left (vph)	0	0	84	0	3	0	65	0				
Volume Right (vph)	0	11	0	28	0	59	0	0				
Hadj (s)	0.00	-0.26	0.53	-0.51	0.53	-0.45	0.53	0.03				
Departure Headway (s)	5.2	4.9	5.6	4.6	5.6	4.6	5.5	5.0				
Degree Utilization, x	0.00	0.04	0.13	0.05	0.00	0.11	0.10	0.10				
Capacity (veh/h)	670	692	612	748	622	754	629	694				
Control Delay (s)	7.0	6.9	8.3	6.6	7.4	6.9	7.9	7.4				
Approach Delay (s)	6.9		7.8		7.0		7.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.5									
Level of Service			A									
Intersection Capacity Utilization			27.6%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis 15: Mayfield Connector & Torbram Connector





























2031 FT PM  
01/19/2023

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	39	15	0	0	0
Future Volume (vph)	0	39	15	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	42	16	0	0	0
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total (vph)	0	42	16	0	0	
Volume Left (vph)	0	0	16	0	0	
Volume Right (vph)	0	42	0	0	0	
Hadj (s)	0.00	-0.67	0.53	0.00	0.00	
Departure Headway (s)	4.5	3.9	5.1	4.6	4.4	
Degree Utilization, x	0.00	0.05	0.02	0.00	0.00	
Capacity (veh/h)	796	921	687	785	814	
Control Delay (s)	6.3	5.9	7.0	6.4	7.4	
Approach Delay (s)	5.9		7.0		0.0	
Approach LOS	A		A		A	
Intersection Summary						
Delay			6.2			
Level of Service			A			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT AM (opt) - Sensitivity













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	67	2208	259	198	1755	18	292	101	150	18	276	56
Future Volume (vph)	67	2208	259	198	1755	18	292	101	150	18	276	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frnt			0.850		0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4857	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.071			0.067			0.483			0.692		
Satd. Flow (perm)	130	4734	1597	126	4857	0	908	1942	1587	1300	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		2				123			66
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	67	2208	259	198	1755	18	292	101	150	18	276	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	2208	259	198	1773	0	292	101	150	18	276	56
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0		25.0	10.0	10.0	10.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6		10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT AM (opt) - Sensitivity

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	16.0	16.0	5.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	8.0	47.3	47.3	8.0	47.3		40.1	40.1	40.1	40.1	40.1	40.1
Total Split (s)	10.0	63.0	63.0	10.0	63.0		47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	8.3%	52.5%	52.5%	8.3%	52.5%		39.2%	39.2%	39.2%	39.2%	39.2%	39.2%
Maximum Green (s)	7.0	55.7	55.7	7.0	55.7		39.9	39.9	39.9	39.9	39.9	39.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	-2.0	0.0		-2.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.3	7.3	1.0	7.3		5.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effct Green (s)	66.4	55.7	55.7	71.4	57.9		41.9	39.9	39.9	39.9	39.9	39.9
Actuated g/C Ratio	0.55	0.46	0.46	0.60	0.48		0.35	0.33	0.33	0.33	0.33	0.33
v/c Ratio	0.43	1.01	0.29	0.99	0.76		0.92	0.16	0.25	0.04	0.43	0.11
Control Delay	19.6	52.7	3.1	80.8	45.2		72.7	29.1	8.6	27.6	33.7	5.8
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	19.6	52.7	3.1	80.8	45.2		72.7	29.1	8.6	27.6	33.7	5.8
LOS	B	D	A	F	D		E	C	A	C	C	A
Approach Delay		46.8			48.8			46.9			28.9	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 46.4

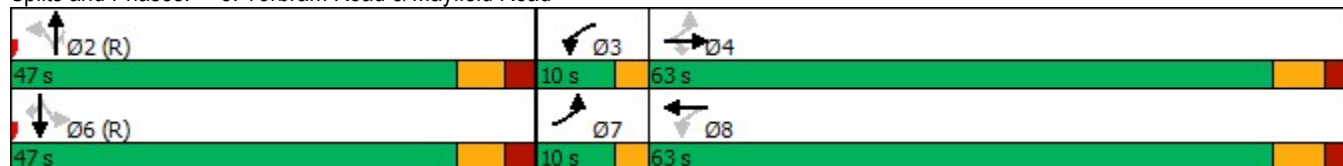
Intersection LOS: D

Intersection Capacity Utilization 103.9%

ICU Level of Service G

Analysis Period (min) 15


Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT AM (opt) - Sensitivity













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	2092	110	14	1765	56	231	0	35	28	0	77
Future Volume (vph)	230	2092	110	14	1765	56	231	0	35	28	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.074			0.078			0.707			0.734		
Satd. Flow (perm)	118	4734	1566	144	4864	1170	1346	1583	0	1049	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			86			60			65			253
Link Speed (k/h)		80			80			50				50
Link Distance (m)		716.7			643.7			353.1				866.6
Travel Time (s)		32.3			29.0			25.4				62.4
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	230	2092	110	14	1765	56	231	0	35	28	0	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	230	2092	110	14	1765	56	231	35	0	28	77	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	

Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT AM (opt) - Sensitivity

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	19.0	80.0	80.0	61.0	61.0	61.0	40.0	40.0		40.0	40.0	
Total Split (%)	15.8%	66.7%	66.7%	50.8%	50.8%	50.8%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	16.0	72.9	72.9	53.9	53.9	53.9	33.4	33.4		33.4	33.4	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	73.6	69.5	69.5	50.9	50.9	50.9	36.8	36.8		36.8	36.8	
Actuated g/C Ratio	0.61	0.58	0.58	0.42	0.42	0.42	0.31	0.31		0.31	0.31	
v/c Ratio	0.91	0.76	0.12	0.23	0.86	0.11	0.56	0.07		0.09	0.13	
Control Delay	76.4	3.2	0.1	14.4	18.7	0.4	42.3	2.3		32.8	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	76.4	3.2	0.1	14.4	18.7	0.4	42.3	2.3		32.8	0.5	
LOS	E	A	A	B	B	A	D	A		C	A	
Approach Delay		10.0			18.1			37.0			9.1	
Approach LOS		A			B			D			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 34 (28%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 14.7

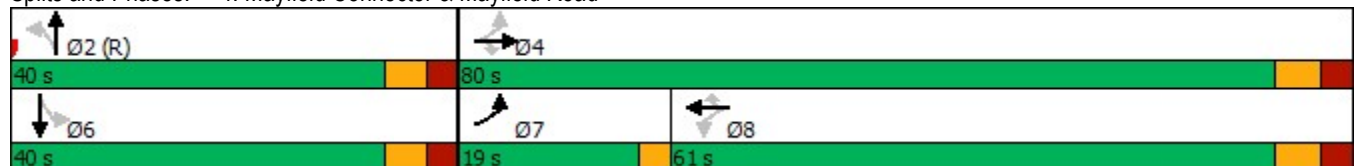
Intersection LOS: B

Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road



































Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT AM (opt) - Sensitivity













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	261	1190	443	109	1222	74	259	368	96	104	716	217
Future Volume (vph)	261	1190	443	109	1222	74	259	368	96	104	716	217
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.108			0.177			0.163			0.533		
Satd. Flow (perm)	147	4939	1493	308	5216	961	291	3386	1426	828	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			342			158			133			217
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	261	1190	443	109	1222	74	259	368	96	104	716	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	1190	443	109	1222	74	259	368	96	104	716	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT AM (opt) - Sensitivity

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	9.5	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	23.0	48.9	48.9	15.3	41.2	41.2	18.0	46.8	46.8	9.0	37.8	37.8
Total Split (%)	19.2%	40.8%	40.8%	12.8%	34.3%	34.3%	15.0%	39.0%	39.0%	7.5%	31.5%	31.5%
Maximum Green (s)	20.0	41.8	41.8	10.8	34.1	34.1	15.0	39.9	39.9	6.0	30.9	30.9
Yellow Time (s)	3.0	4.0	4.0	3.5	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	1.0	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	4.5	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	61.2	44.0	44.0	45.3	34.1	34.1	52.8	39.9	39.9	41.2	31.3	31.3
Actuated g/C Ratio	0.51	0.37	0.37	0.38	0.28	0.28	0.44	0.33	0.33	0.34	0.26	0.26
v/c Ratio	0.98	0.66	0.58	0.51	0.82	0.19	0.87	0.33	0.17	0.33	0.82	0.43
Control Delay	65.7	34.9	19.5	26.4	45.8	1.1	51.9	31.0	2.5	25.4	50.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	34.9	19.5	26.4	45.8	1.1	51.9	31.0	2.5	25.4	50.6	7.4
LOS	E	C	B	C	D	A	D	C	A	C	D	A
Approach Delay		35.6			41.9			34.7			39.0	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 37.9

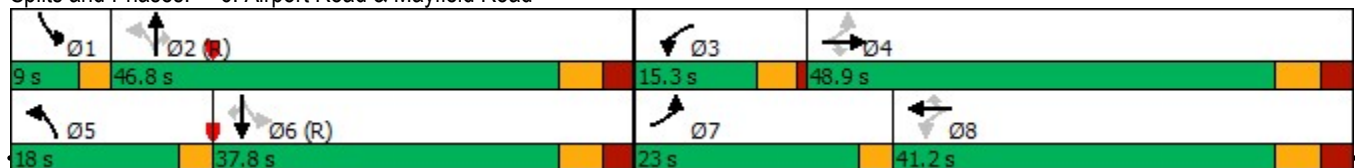
Intersection LOS: D

Intersection Capacity Utilization 100.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2036 Future Total AM (Optimized) - Sensitivity 2022-5841 9:00 am 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates























Page 10























# HCM Unsignalized Intersection Capacity Analysis













## 7: Airport Road & Perdue Court/Davis Lane

2036 FT AM (opt) - Sensitivity

01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	707	83	2	879	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	707	83	2	879	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	707	86	2	879	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1346	1774	440	1281	1691	358	883				798	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1346	1774	440	1281	1691	358	883				798	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	94	99	94	21	100	97	88				100	
cM capacity (veh/h)	84	73	535	98	83	641	398				447	
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	5	34	52	43	46	354	354	86	2	440	440	3
Volume Left	5	0	52	26	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	84	451	98	148	398	1700	1700	1700	447	1700	1700	1700
Volume to Capacity	0.06	0.08	0.53	0.29	0.12	0.21	0.21	0.05	0.00	0.26	0.26	0.00
Queue Length 95th (m)	1.5	1.9	19.1	9.1	3.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	50.6	13.6	76.8	39.0	15.2	0.0	0.0	0.0	13.1	0.0	0.0	0.0
Lane LOS	F	B	F	E	C				B			
Approach Delay (s)	18.4	59.7		0.8			0.0					
Approach LOS	C	F										
Intersection Summary												
Average Delay	3.8											
Intersection Capacity Utilization	47.0%			ICU Level of Service					A			
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	114	77	0	11	169	443	61	17	682	123
Future Volume (vph)	30	0	114	77	0	11	169	443	61	17	682	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3053	0
Flt Permitted	0.750			0.684			0.336			0.495		
Satd. Flow (perm)	1155	1342	0	956	1324	0	453	3449	992	581	3053	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		255			429				61		32	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	30	0	114	77	0	11	169	443	61	17	682	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	114	0	77	11	0	169	443	61	17	805	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	4				8		2				6	
Permitted Phases	4			8				2	2	6		
Detector Phase	4	4	8		8		2	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	12.0	
Minimum Split (s)	36.2	36.2	36.2		36.2		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	
Total Split (%)	33.3%	33.3%	33.3%		33.3%		66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	31.8	31.8	31.8		31.8		73.4	73.4	73.4	73.4	73.4	
Yellow Time (s)	4.0	4.0	4.0		4.0		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	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2	8.2		8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None		None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0	20.0		20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0	0	0	0	
Act Effct Green (s)	14.9	14.9	14.9		14.9		76.3	76.3	76.3	76.3	76.3	
Actuated g/C Ratio	0.14	0.14	0.14		0.14		0.72	0.72	0.72	0.72	0.72	
v/c Ratio	0.19	0.28	0.57		0.02		0.52	0.18	0.08	0.04	0.37	
Control Delay	41.0	1.7	58.4		0.1		14.7	5.3	1.8	5.5	6.3	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	41.0	1.7	58.4		0.1		14.7	5.3	1.8	5.5	6.3	
LOS	D	A	E		A		B	A	A	A	A	
Approach Delay	9.9				51.1		7.4				6.3	
Approach LOS	A				D		A				A	
Intersection Summary												
Area Type:	Other											
Cycle Length: 120												
Actuated Cycle Length: 106.1												
Natural Cycle: 90												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.57												
Intersection Signal Delay: 9.3					Intersection LOS: A							
Intersection Capacity Utilization 61.5%					ICU Level of Service B							
Analysis Period (min) 15												





























Splits and Phases: 8: Airport Road &amp; Airport Site Access/12333 Airport Road



Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT AM (opt)













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	116	2160	259	188	1737	66	292	115	135	55	286	74
Future Volume (vph)	116	2160	259	188	1737	66	292	115	135	55	286	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4848	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.072			0.069			0.472			0.683		
Satd. Flow (perm)	131	4734	1597	130	4848	0	887	1942	1587	1283	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		6				123			74
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	116	2160	259	188	1737	66	292	115	135	55	286	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	2160	259	188	1803	0	292	115	135	55	286	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0		25.0	10.0	10.0	10.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6		10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT AM (opt)

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	16.0	16.0	5.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	8.0	47.3	47.3	8.0	47.3		40.1	40.1	40.1	40.1	40.1	40.1
Total Split (s)	10.0	63.0	63.0	10.0	63.0		47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	8.3%	52.5%	52.5%	8.3%	52.5%		39.2%	39.2%	39.2%	39.2%	39.2%	39.2%
Maximum Green (s)	7.0	55.7	55.7	7.0	55.7		39.9	39.9	39.9	39.9	39.9	39.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	-2.0	0.0		-2.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.3	7.3	1.0	7.3		5.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0		5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effct Green (s)	66.9	55.7	55.7	71.1	55.8		41.9	39.9	39.9	39.9	39.9	39.9
Actuated g/C Ratio	0.56	0.46	0.46	0.59	0.46		0.35	0.33	0.33	0.33	0.33	0.33
v/c Ratio	0.70	0.98	0.29	0.94	0.80		0.94	0.18	0.22	0.13	0.44	0.14
Control Delay	41.2	47.6	3.1	66.6	49.8		78.1	29.4	7.1	29.1	34.1	6.9
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	41.2	47.6	3.1	66.6	49.8		78.1	29.4	7.1	29.1	34.1	6.9
LOS	D	D	A	E	D		E	C	A	C	C	A
Approach Delay		42.8			51.4			50.1			28.6	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 45.5

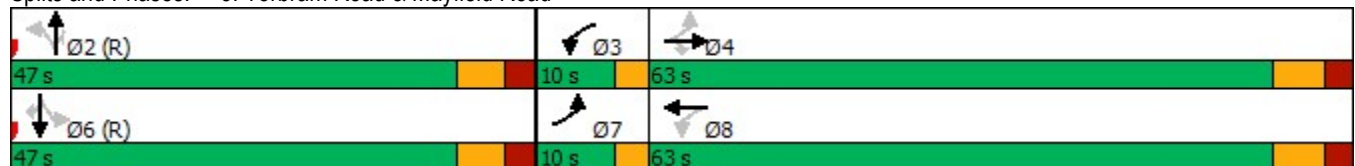
Intersection LOS: D

Intersection Capacity Utilization 103.0%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road



































Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT AM (opt)













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Future Volume (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.108			0.172			0.174			0.550		
Satd. Flow (perm)	147	4939	1493	299	5216	961	311	3386	1426	854	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			343			158			133			217
Link Speed (k/h)		60			60			60				60
Link Distance (m)		643.7			619.2			458.9				446.4
Travel Time (s)		38.6			37.2			27.5				26.8
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT AM (opt)

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	9.5	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	23.0	48.9	48.9	15.3	41.2	41.2	18.0	46.8	46.8	9.0	37.8	37.8
Total Split (%)	19.2%	40.8%	40.8%	12.8%	34.3%	34.3%	15.0%	39.0%	39.0%	7.5%	31.5%	31.5%
Maximum Green (s)	20.0	41.8	41.8	10.8	34.1	34.1	15.0	39.9	39.9	6.0	30.9	30.9
Yellow Time (s)	3.0	4.0	4.0	3.5	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	0.0	3.1	3.1	1.0	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	4.5	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	61.2	44.0	44.0	45.3	34.1	34.1	52.8	40.0	40.0	40.7	30.9	30.9
Actuated g/C Ratio	0.51	0.37	0.37	0.38	0.28	0.28	0.44	0.33	0.33	0.34	0.26	0.26
v/c Ratio	0.98	0.67	0.61	0.52	0.83	0.16	0.95	0.30	0.17	0.28	0.80	0.43
Control Delay	66.5	36.6	21.0	26.8	46.2	0.8	64.8	30.5	2.5	23.9	49.9	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	36.6	21.0	26.8	46.2	0.8	64.8	30.5	2.5	23.9	49.9	7.5
LOS	E	D	C	C	D	A	E	C	A	C	D	A
Approach Delay		36.9			42.8			40.7			38.4	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 39.3

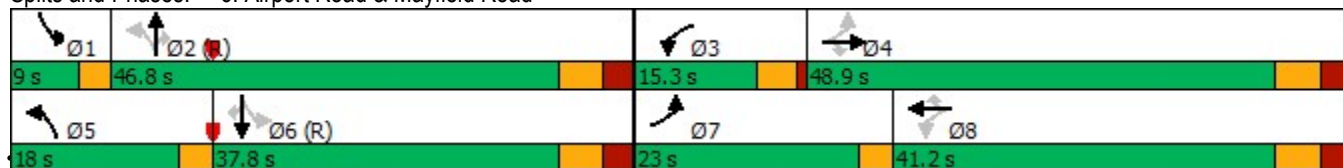
Intersection LOS: D

Intersection Capacity Utilization 102.4%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2036 Future Total AM (Optimized) 2022-5841 9:00 am 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates

















Page 10

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2036 FT AM











01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	6	210	19	45	90	1	6	91	29	4	312	11
Future Volume (vph)	6	210	19	45	90	1	6	91	29	4	312	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	228	21	49	98	1	7	99	32	4	339	12
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	256	148	138	355								
Volume Left (vph)	7	49	7	4								
Volume Right (vph)	21	1	32	12								
Hadj (s)	0.02	0.07	-0.06	-0.01								
Departure Headway (s)	5.6	5.8	5.6	5.3								
Degree Utilization, x	0.40	0.24	0.22	0.52								
Capacity (veh/h)	597	552	566	641								
Control Delay (s)	12.2	10.6	10.2	14.0								
Approach Delay (s)	12.2	10.6	10.2	14.0								
Approach LOS	B	B	B	B								
Intersection Summary												
Delay				12.3								
Level of Service				B								
Intersection Capacity Utilization				48.2%	ICU Level of Service	A						
Analysis Period (min)				15								

# HCM Unsignalized Intersection Capacity Analysis

## 2: Torbram Road & Torbram Connector





























2036 FT AM  
01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	66	8	132	112	28	358
Future Volume (Veh/h)	66	8	132	112	28	358
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	9	143	122	30	389
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	653	204			265	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	653	204			265	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	99			98	
cM capacity (veh/h)	422	837			1299	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	72	9	265	419		
Volume Left	72	0	0	30		
Volume Right	0	9	122	0		
cSH	422	837	1700	1299		
Volume to Capacity	0.17	0.01	0.16	0.02		
Queue Length 95th (m)	4.9	0.3	0.0	0.6		
Control Delay (s)	15.3	9.3	0.0	0.8		
Lane LOS	C	A		A		
Approach Delay (s)	14.6		0.0	0.8		
Approach LOS	B					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT AM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  						 	
Traffic Volume (vph)	116	2160	259	188	1737	66	292	115	135	55	286	74
Future Volume (vph)	116	2160	259	188	1737	66	292	115	135	55	286	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4848	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.077			0.074			0.478			0.683		
Satd. Flow (perm)	140	4734	1597	139	4848	0	898	1942	1587	1283	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		6				131			74
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	116	2160	259	188	1737	66	292	115	135	55	286	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	2160	259	188	1803	0	292	115	135	55	286	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	10.0	59.0	59.0	12.0	61.0		49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	8.3%	49.2%	49.2%	10.0%	50.8%		40.8%	40.8%	40.8%	40.8%	40.8%	40.8%
Maximum Green (s)	7.0	51.7	51.7	9.0	53.7		41.9	41.9	41.9	41.9	41.9	41.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	63.0	51.7	51.7	67.0	53.7		41.9	41.9	41.9	41.9	41.9	41.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.52	0.43	0.43	0.56	0.45		0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.70	1.06	0.31	0.94	0.83		0.93	0.17	0.21	0.12	0.42	0.13
Control Delay	41.1	71.5	3.5	78.6	30.7		75.3	27.9	5.8	27.6	32.2	6.5
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	41.1	71.5	3.5	78.6	30.7		75.3	27.9	5.8	27.6	32.2	6.5
LOS	D	E	A	E	C		E	C	A	C	C	A
Approach Delay	63.1			35.3			47.9			27.0		
Approach LOS	E			D			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 115

Control Type: Pretimed

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 48.8

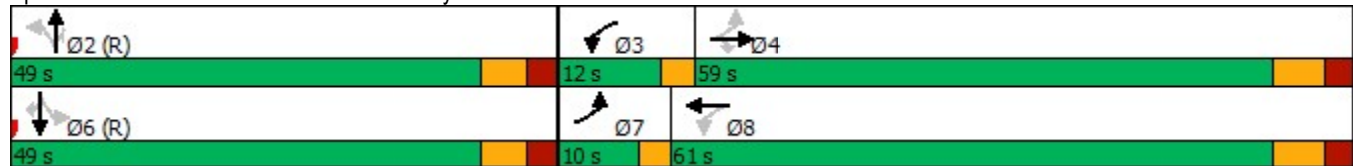
Intersection LOS: D

Intersection Capacity Utilization 104.6%

ICU Level of Service G

Analysis Period (min) 15























Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT AM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	2129	110	14	1813	56	231	0	35	28	0	49
Future Volume (vph)	166	2129	110	14	1813	56	231	0	35	28	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.073			0.077			0.725			0.734		
Satd. Flow (perm)	117	4734	1566	142	4864	1170	1381	1583	0	1049	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85			60			65			253
Link Speed (k/h)		80			80			50			50	
Link Distance (m)		716.7			643.7			353.1			866.6	
Travel Time (s)		32.3			29.0			25.4			62.4	
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	166	2129	110	14	1813	56	231	0	35	28	0	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	166	2129	110	14	1813	56	231	35	0	28	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT AM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	19.0	80.0	80.0	61.0	61.0	61.0	40.0	40.0		40.0	40.0	
Total Split (%)	15.8%	66.7%	66.7%	50.8%	50.8%	50.8%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	16.0	72.9	72.9	53.9	53.9	53.9	33.4	33.4		33.4	33.4	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	71.7	67.6	67.6	51.7	51.7	51.7	38.7	38.7		38.7	38.7	
Actuated g/C Ratio	0.60	0.56	0.56	0.43	0.43	0.43	0.32	0.32		0.32	0.32	
v/c Ratio	0.75	0.80	0.12	0.23	0.87	0.10	0.52	0.06		0.08	0.08	
Control Delay	45.2	38.3	13.0	29.4	37.7	6.7	39.9	2.3		32.3	0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.2	38.3	13.0	29.4	37.7	6.7	39.9	2.3		32.3	0.3	
LOS	D	D	B	C	D	A	D	A		C	A	
Approach Delay		37.6			36.7			35.0			11.9	
Approach LOS		D			D			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 36.6

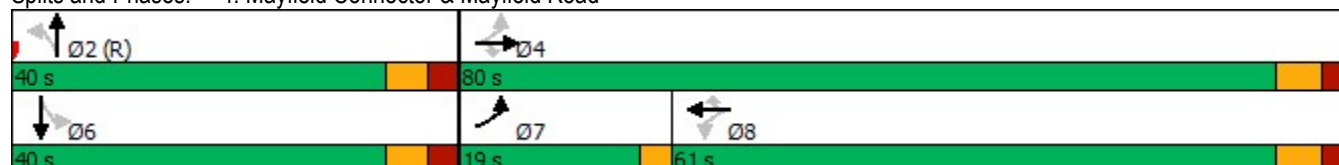
Intersection LOS: D

Intersection Capacity Utilization 87.9%

ICU Level of Service E































Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road



Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road













2036 FT AM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Future Volume (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.108			0.183			0.174			0.550		
Satd. Flow (perm)	147	4939	1493	318	5216	961	311	3386	1426	854	3355	1332
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			356			145			119			217
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	1204	466	109	1235	60	293	334	96	89	693	217
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	41.1	41.1	8.0	41.1	41.1	8.0	36.9	36.9	9.0	36.9	36.9
Total Split (s)	23.0	48.9	48.9	15.3	41.2	41.2	18.0	46.8	46.8	9.0	37.8	37.8
Total Split (%)	19.2%	40.8%	40.8%	12.8%	34.3%	34.3%	15.0%	39.0%	39.0%	7.5%	31.5%	31.5%
Maximum Green (s)	20.0	41.8	41.8	12.3	34.1	34.1	15.0	39.9	39.9	6.0	30.9	30.9
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	61.2	45.3	45.3	47.0	34.1	34.1	52.8	40.0	40.0	40.7	30.9	30.9
Actuated g/C Ratio	0.51	0.38	0.38	0.39	0.28	0.28	0.44	0.33	0.33	0.34	0.26	0.26
v/c Ratio	0.98	0.65	0.59	0.49	0.83	0.16	0.95	0.30	0.17	0.28	0.80	0.43
Control Delay	92.1	43.4	20.9	24.6	46.2	0.9	64.8	30.5	3.6	23.9	49.9	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.1	43.4	20.9	24.6	46.2	0.9	64.8	30.5	3.6	23.9	49.9	7.5
LOS	F	D	C	C	D	A	E	C	A	C	D	A
Approach Delay		44.5			42.6			40.8			38.4	
Approach LOS		D			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 42.3

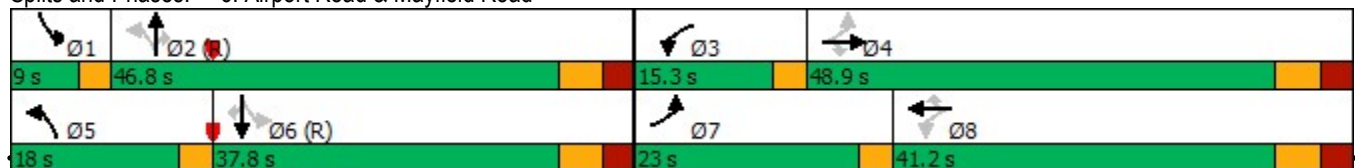
Intersection LOS: D

Intersection Capacity Utilization 102.4%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2036 Future Total AM 2022-5841 9:00 am 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates























Page 10

# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2036 FT AM























01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	33	78	0	17	46	659	83	2	842	3
Future Volume (Veh/h)	5	1	33	78	0	17	46	659	83	2	842	3
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	5	1	33	78	0	17	46	659	86	2	842	3
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1286	1689	422	1214	1606	334	846				750	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1286	1689	422	1214	1606	334	846				750	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	95	99	94	30	100	97	89				100	
cM capacity (veh/h)	94	83	550	111	94	664	417				474	
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	5	34	52	43	46	330	330	86	2	421	421	3
Volume Left	5	0	52	26	46	0	0	0	2	0	0	0
Volume Right	0	33	0	17	0	0	0	86	0	0	0	3
cSH	94	472	111	166	417	1700	1700	1700	474	1700	1700	1700
Volume to Capacity	0.05	0.07	0.47	0.26	0.11	0.19	0.19	0.05	0.00	0.25	0.25	0.00
Queue Length 95th (m)	1.3	1.9	16.5	7.9	3.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Control Delay (s)	45.4	13.2	63.1	34.2	14.7	0.0	0.0	0.0	12.6	0.0	0.0	0.0
Lane LOS	E	B	F	D	B				B			
Approach Delay (s)	17.3			50.0			0.9			0.0		
Approach LOS	C			F								
Intersection Summary												
Average Delay				3.5								
Intersection Capacity Utilization				46.0%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2036 FT AM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	0	77	77	0	11	121	443	61	17	682	95
Future Volume (vph)	22	0	77	77	0	11	121	443	61	17	682	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3064	0
Flt Permitted	0.750			0.707			0.351			0.495		
Satd. Flow (perm)	1155	1342	0	988	1324	0	473	3449	992	581	3064	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		255			429				61		23	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	22	0	77	77	0	11	121	443	61	17	682	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	77	0	77	11	0	121	443	61	17	777	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2036 FT AM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		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	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	31.8	31.8		31.8	31.8		73.4	73.4	73.4	73.4	73.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effect Green (s)	14.6	14.6		14.6	14.6		79.2	79.2	79.2	79.2	79.2	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.77	0.77	0.77	0.77	0.77	
v/c Ratio	0.13	0.19		0.55	0.02		0.33	0.17	0.08	0.04	0.33	
Control Delay	40.1	1.0		56.7	0.1		9.2	4.8	1.7	5.4	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	40.1	1.0		56.7	0.1		9.2	4.8	1.7	5.4	5.5	
LOS	D	A		E	A		A	A	A	A	A	
Approach Delay		9.7			49.6			5.3			5.5	
Approach LOS		A			D			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 102.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 8.1

Intersection LOS: A

Intersection Capacity Utilization 60.6%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 8: Airport Road & Airport Site Access/12333 Airport Road



# HCM Unsignalized Intersection Capacity Analysis

## 12: Torbram Road & Site Access "1"

2036 FT AM  
01/19/2023










						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	275	36	12	412
Future Volume (Veh/h)	12	3	275	36	12	412
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	299	39	13	448
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	792	318			338	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	792	318			338	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			99	
cM capacity (veh/h)	357	727			1232	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	338	461			
Volume Left	13	0	13			
Volume Right	3	39	0			
cSH	394	1700	1232			
Volume to Capacity	0.04	0.20	0.01			
Queue Length 95th (m)	1.0	0.0	0.3			
Control Delay (s)	14.5	0.0	0.3			
Lane LOS	B		A			
Approach Delay (s)	14.5	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			41.4%	ICU Level of Service		A
Analysis Period (min)			15			



# HCM Unsignalized Intersection Capacity Analysis





















## 13: Torbram Road & Site Access "2"

2036 FT AM  
01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	241	36	12	412
Future Volume (Veh/h)	12	3	241	36	12	412
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	262	39	13	448
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	756	282			301	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	756	282			301	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			99	
cM capacity (veh/h)	375	762			1272	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	301	461			
Volume Left	13	0	13			
Volume Right	3	39	0			
cSH	415	1700	1272			
Volume to Capacity	0.04	0.18	0.01			
Queue Length 95th (m)	1.0	0.0	0.2			
Control Delay (s)	14.0	0.0	0.3			
Lane LOS	B		A			
Approach Delay (s)	14.0	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		41.4%		ICU Level of Service		A
Analysis Period (min)		15				













# HCM Unsignalized Intersection Capacity Analysis 14: Mayfield Connector & Airport Connector

2036 FT AM  
01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	6	2	44	15	63	9	66	58	23	24	0
Future Volume (vph)	0	6	2	44	15	63	9	66	58	23	24	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	7	2	48	16	68	10	72	63	25	26	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	0	9	48	84	10	135	25	26				
Volume Left (vph)	0	0	48	0	10	0	25	0				
Volume Right (vph)	0	2	0	68	0	63	0	0				
Hadj (s)	0.00	-0.12	0.53	-0.53	0.53	-0.29	0.53	0.03				
Departure Headway (s)	5.1	5.0	5.5	4.4	5.4	4.6	5.5	5.0				
Degree Utilization, x	0.00	0.01	0.07	0.10	0.02	0.17	0.04	0.04				
Capacity (veh/h)	685	688	625	774	641	755	627	691				
Control Delay (s)	6.9	6.8	7.7	6.7	7.3	7.4	7.5	7.0				
Approach Delay (s)	6.8		7.1		7.4		7.3					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.2									
Level of Service			A									
Intersection Capacity Utilization			29.5%		ICU Level of Service		A					
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis 15: Mayfield Connector & Torbram Connector
























2036 FT AM  
01/19/2023

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	18	35	0	0	0
Future Volume (vph)	0	18	35	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	20	38	0	0	0
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total (vph)	0	20	38	0	0	
Volume Left (vph)	0	0	38	0	0	
Volume Right (vph)	0	20	0	0	0	
Hadj (s)	0.00	-0.67	0.53	0.00	0.00	
Departure Headway (s)	4.6	3.9	5.1	4.5	4.4	
Degree Utilization, x	0.00	0.02	0.05	0.00	0.00	
Capacity (veh/h)	783	892	696	796	821	
Control Delay (s)	6.4	5.8	7.2	6.3	7.4	
Approach Delay (s)	5.8		7.2		0.0	
Approach LOS	A		A		A	
Intersection Summary						
Delay			6.7			
Level of Service			A			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT PM (opt) - Sensitivity













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2118	243	177	2257	16	305	168	177	12	85	60
Future Volume (vph)	51	2118	243	177	2257	16	305	168	177	12	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4861	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.061			0.058			0.702			0.611		
Satd. Flow (perm)	111	4734	1597	109	4861	0	1319	1942	1587	1148	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		1				121			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	51	2118	243	177	2257	16	305	168	177	12	85	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	2118	243	177	2273	0	305	168	177	12	85	60
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0		25.0	10.0	10.0	10.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6		10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT PM (opt) - Sensitivity

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	16.0	16.0	5.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	73.0	73.0	14.0	79.0		48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	5.9%	54.1%	54.1%	10.4%	58.5%		35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	5.0	65.7	65.7	11.0	71.7		40.9	40.9	40.9	40.9	40.9	40.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	-2.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.3	7.3	1.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effct Green (s)	74.4	65.1	65.1	85.0	72.3		41.9	41.9	41.9	41.9	41.9	41.9
Actuated g/C Ratio	0.55	0.48	0.48	0.63	0.54		0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.42	0.93	0.27	0.79	0.87		0.75	0.28	0.31	0.03	0.14	0.12
Control Delay	21.9	41.0	3.0	63.3	36.9		54.9	37.1	13.8	33.7	35.0	3.6
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	21.9	41.0	3.0	63.3	36.9		54.9	37.1	13.8	33.7	35.0	3.6
LOS	C	D	A	E	D		D	D	B	C	C	A
Approach Delay		36.8			38.8			39.1			22.9	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.5

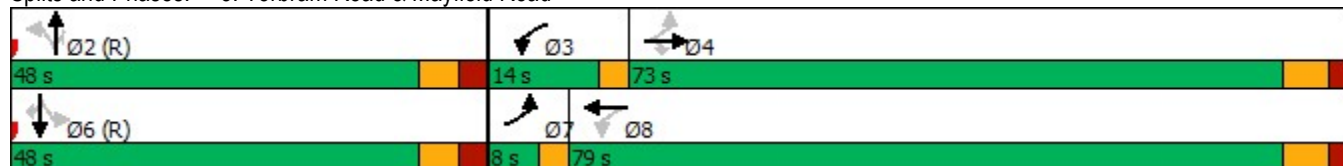
Intersection LOS: D

Intersection Capacity Utilization 89.6%

ICU Level of Service E

Analysis Period (min) 15



























Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT PM (opt) - Sensitivity













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	84	2155	98	41	2099	27	104	0	23	42	0	258
Future Volume (vph)	84	2155	98	41	2099	27	104	0	23	42	0	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.049			0.060			0.409			0.742		
Satd. Flow (perm)	78	4734	1566	111	4864	1170	779	1583	0	1060	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			94			53			57			91
Link Speed (k/h)		80			80			50				50
Link Distance (m)		716.7			643.7			353.1				866.6
Travel Time (s)		32.3			29.0			25.4				62.4
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	84	2155	98	41	2099	27	104	0	23	42	0	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	2155	98	41	2099	27	104	23	0	42	258	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	

Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT PM (opt) - Sensitivity

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	9.8	104.8	104.8	95.0	95.0	95.0	30.2	30.2		30.2	30.2	
Total Split (%)	7.3%	77.6%	77.6%	70.4%	70.4%	70.4%	22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	6.8	97.7	97.7	87.9	87.9	87.9	23.6	23.6		23.6	23.6	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	C-Max	C-Max		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	92.4	88.3	88.3	78.7	78.7	78.7	33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.68	0.65	0.65	0.58	0.58	0.58	0.24	0.24		0.24	0.24	
v/c Ratio	0.68	0.70	0.09	0.64	0.74	0.04	0.55	0.05		0.16	0.66	
Control Delay	46.1	27.0	7.2	52.4	24.3	0.2	59.5	0.2		46.5	40.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	46.1	27.0	7.2	52.4	24.3	0.2	59.5	0.2		46.5	40.1	
LOS	D	C	A	D	C	A	E	A		D	D	
Approach Delay		26.8			24.5			48.8			41.0	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 27.2

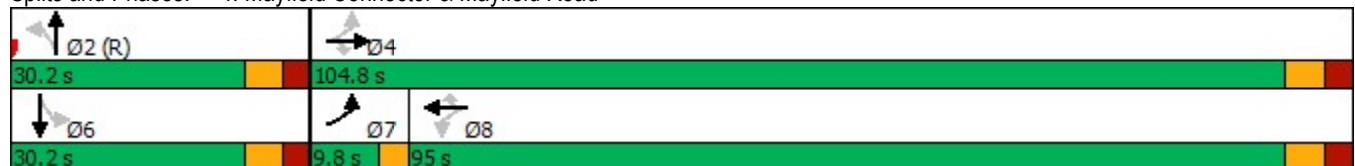
Intersection LOS: C

Intersection Capacity Utilization 100.4%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road



































Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT PM (opt) - Sensitivity













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	359	1204	224	126	1246	84	376	647	103	144	464	323
Future Volume (vph)	359	1204	224	126	1246	84	376	647	103	144	464	323
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.110			0.222			0.283			0.330		
Satd. Flow (perm)	150	4939	1493	386	5216	960	506	3386	1426	512	3355	1331
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			185			128			106			323
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	359	1204	224	126	1246	84	376	647	103	144	464	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	359	1204	224	126	1246	84	376	647	103	144	464	323
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT PM (opt) - Sensitivity

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	39.1	39.1	8.0	39.1	39.1	8.0	34.9	34.9	9.0	34.9	34.9
Total Split (s)	38.0	58.2	58.2	18.8	39.1	39.1	23.0	44.9	44.9	13.0	34.9	34.9
Total Split (%)	28.1%	43.1%	43.1%	13.9%	29.0%	29.0%	17.0%	33.3%	33.3%	9.6%	25.9%	25.9%
Maximum Green (s)	35.0	51.1	51.1	15.8	32.0	32.0	20.0	38.0	38.0	10.0	28.0	28.0
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	74.1	57.4	57.4	47.0	33.2	33.2	54.9	38.4	38.4	41.5	28.0	28.0
Actuated g/C Ratio	0.55	0.43	0.43	0.35	0.25	0.25	0.41	0.28	0.28	0.31	0.21	0.21
v/c Ratio	0.98	0.57	0.30	0.56	0.97	0.25	0.98	0.67	0.21	0.64	0.67	0.61
Control Delay	91.5	30.1	8.7	29.3	69.4	3.4	75.6	47.0	7.3	42.6	54.6	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	0.0
Total Delay	91.5	30.1	8.7	29.3	69.4	3.4	75.6	47.0	7.3	42.6	54.6	10.0
LOS	F	C	A	C	E	A	E	D	A	D	D	A
Approach Delay		39.7			62.1			52.9			37.3	
Approach LOS		D			E			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 125.1 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 48.3

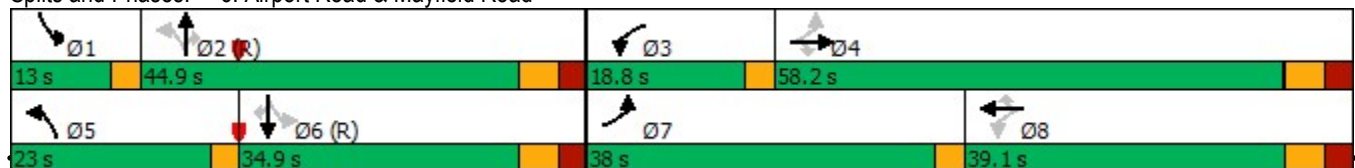
Intersection LOS: D

Intersection Capacity Utilization 109.1%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2036 Future Total PM (Optimized) 2022-5841 4:00 pm 01/01/2036 Baseline























Synchro 11 Report























C.F. Crozier & Associates













Page 10

# HCM Unsignalized Intersection Capacity Analysis 7: Airport Road & Perdue Court/Davis Lane

2036 FT PM (opt) - Sensitivity  
01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	948	90	17	637	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	948	90	17	637	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	948	94	17	637	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1306	1875	320	1538	1787	479	644				1047	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1306	1875	320	1538	1787	479	644				1047	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	91	98	88	0	100	99	85				95	
cM capacity (veh/h)	86	58	644	55	66	536	536				328	
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	8	77	113	4	78	474	474	94	17	318	318	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	86	570	55	536	536	1700	1700	1700	328	1700	1700	1700
Volume to Capacity	0.09	0.14	2.04	0.01	0.15	0.28	0.28	0.06	0.05	0.19	0.19	0.00
Queue Length 95th (m)	2.4	3.7	88.3	0.2	4.1	0.0	0.0	0.0	1.3	0.0	0.0	0.0
Control Delay (s)	50.9	12.3	640.9	11.8	12.9	0.0	0.0	0.0	16.6	0.0	0.0	0.0
Lane LOS	F	B	F	B	B				C			
Approach Delay (s)	15.9		619.4		0.9				0.4			
Approach LOS	C		F									
Intersection Summary												
Average Delay	37.9											
Intersection Capacity Utilization	52.5%			ICU Level of Service					A			
Analysis Period (min)	15											

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	0	120	34	0	5	89	818	26	2	460	39
Future Volume (vph)	193	0	120	34	0	5	89	818	26	2	460	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3076	0
Flt Permitted	0.754			0.680			0.469			0.317		
Satd. Flow (perm)	1161	1342	0	950	1324	0	632	3449	992	372	3076	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		347			137				47		11	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	193	0	120	34	0	5	89	818	26	2	460	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	120	0	34	5	0	89	818	26	2	499	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		35.6	35.6	35.6	35.6	35.6	
Total Split (s)	51.0	51.0		51.0	51.0		69.0	69.0	69.0	69.0	69.0	
Total Split (%)	42.5%	42.5%		42.5%	42.5%		57.5%	57.5%	57.5%	57.5%	57.5%	
Maximum Green (s)	42.8	42.8		42.8	42.8		62.4	62.4	62.4	62.4	62.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	21.5	21.5		21.5	21.5		62.9	62.9	62.9	62.9	62.9	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.63	0.63	0.63	0.63	0.63	
v/c Ratio	0.77	0.21		0.17	0.01		0.22	0.37	0.04	0.01	0.26	
Control Delay	56.3	0.9		32.2	0.0		11.3	10.2	1.3	9.5	9.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	56.3	0.9		32.2	0.0		11.3	10.2	1.3	9.5	9.0	
LOS	E	A		C	A		B	B	A	A	A	
Approach Delay		35.1			28.1			10.1			9.0	
Approach LOS		D			C			B			A	

## Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 99.2

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 14.6

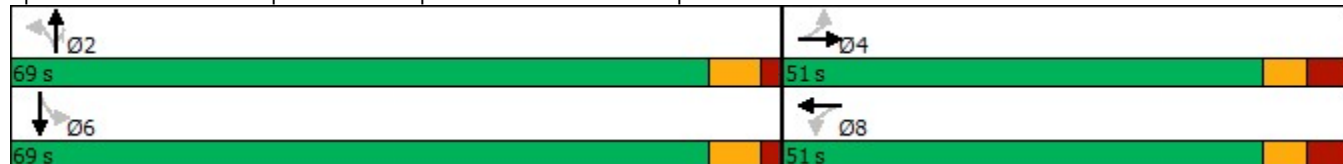
Intersection LOS: B

Intersection Capacity Utilization 67.8%

ICU Level of Service C

Analysis Period (min) 15




























Splits and Phases: 8: Airport Road &amp; Airport Site Access/12333 Airport Road



Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road













2036 FT PM (opt)

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	68	2100	243	167	2194	42	305	176	169	49	95	122
Future Volume (vph)	68	2100	243	167	2194	42	305	176	169	49	95	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4854	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.061			0.058			0.695			0.599		
Satd. Flow (perm)	111	4734	1597	109	4854	0	1306	1942	1587	1125	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		3				121			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	68	2100	243	167	2194	42	305	176	169	49	95	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	2100	243	167	2236	0	305	176	169	49	95	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0		25.0	10.0	10.0	10.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0		15.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6		10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT PM (opt)  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	7	4	4	3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	16.0	16.0	5.0	16.0		12.0	12.0	12.0	12.0	12.0	12.0
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	73.0	73.0	14.0	79.0		48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	5.9%	54.1%	54.1%	10.4%	58.5%		35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	5.0	65.7	65.7	11.0	71.7		40.9	40.9	40.9	40.9	40.9	40.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	-2.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.3	7.3	1.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effct Green (s)	74.5	65.2	65.2	84.8	72.1		42.1	42.1	42.1	42.1	42.1	42.1
Actuated g/C Ratio	0.55	0.48	0.48	0.63	0.53		0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.56	0.92	0.27	0.76	0.86		0.75	0.29	0.29	0.14	0.16	0.24
Control Delay	33.2	40.1	3.0	59.9	37.0		55.2	37.3	12.8	35.7	35.2	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	40.1	3.0	59.9	37.0		55.2	37.3	12.8	35.7	35.2	14.2
LOS	C	D	A	E	D		E	D	B	D	D	B
Approach Delay		36.1			38.6			39.3			25.6	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 37.1

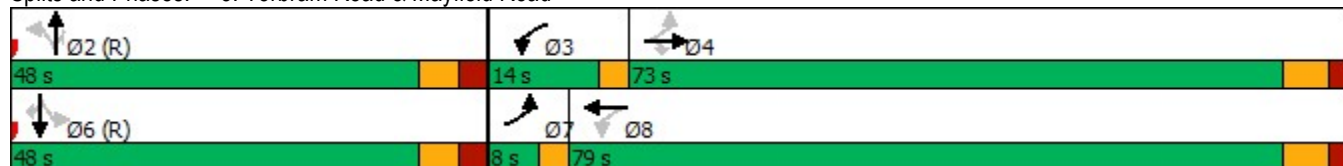
Intersection LOS: D

Intersection Capacity Utilization 98.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Torbram Road & Mayfield Road




































Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT PM (opt)













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			  	
Traffic Volume (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Future Volume (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.110			0.218			0.304			0.350		
Satd. Flow (perm)	150	4939	1493	379	5216	960	543	3386	1426	543	3355	1331
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			201			128			106			323
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT PM (opt)

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	39.1	39.1	8.0	39.1	39.1	8.0	34.9	34.9	9.0	34.9	34.9
Total Split (s)	38.0	58.2	58.2	18.8	39.1	39.1	23.0	44.9	44.9	13.0	34.9	34.9
Total Split (%)	28.1%	43.1%	43.1%	13.9%	29.0%	29.0%	17.0%	33.3%	33.3%	9.6%	25.9%	25.9%
Maximum Green (s)	35.0	51.1	51.1	15.8	32.0	32.0	20.0	38.0	38.0	10.0	28.0	28.0
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	74.1	57.4	57.4	47.0	33.2	33.2	54.9	38.5	38.5	41.4	28.0	28.0
Actuated g/C Ratio	0.55	0.43	0.43	0.35	0.25	0.25	0.41	0.29	0.29	0.31	0.21	0.21
v/c Ratio	0.98	0.58	0.33	0.57	0.98	0.23	1.01	0.65	0.21	0.56	0.64	0.61
Control Delay	90.5	30.2	9.0	29.7	70.4	2.3	80.6	46.3	7.3	37.7	53.6	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	0.0
Total Delay	90.5	30.2	9.0	29.7	70.4	2.3	80.6	46.3	7.3	37.7	53.6	10.0
LOS	F	C	A	C	E	A	F	D	A	D	D	A
Approach Delay		39.2			63.3			54.7			35.6	
Approach LOS		D			E			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 125.1 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 48.5

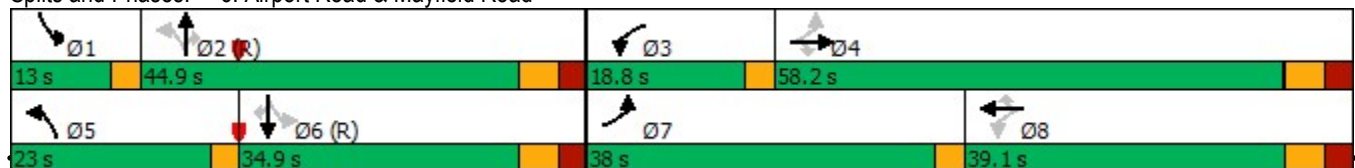
Intersection LOS: D

Intersection Capacity Utilization 110.1%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road



2036 Future Total PM (Optimized) 2022-5841 4:00 pm 01/01/2036 Baseline

Synchro 11 Report

C.F. Crozier & Associates

















Page 10

# HCM Unsignalized Intersection Capacity Analysis

## 1: Torbram Road & Old School Road

2036 FT PM











01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	11	99	7	23	339	7	21	273	74	6	80	7
Future Volume (vph)	11	99	7	23	339	7	21	273	74	6	80	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	108	8	25	368	8	23	297	80	7	87	8
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	128	401	400	102								
Volume Left (vph)	12	25	23	7								
Volume Right (vph)	8	8	80	8								
Hadj (s)	0.06	0.02	-0.04	0.00								
Departure Headway (s)	6.2	5.7	5.6	6.3								
Degree Utilization, x	0.22	0.63	0.63	0.18								
Capacity (veh/h)	503	604	605	486								
Control Delay (s)	11.0	17.8	17.6	10.6								
Approach Delay (s)	11.0	17.8	17.6	10.6								
Approach LOS	B	C	C	B								
Intersection Summary												
Delay				16.2								
Level of Service				C								
Intersection Capacity Utilization				55.3%	ICU Level of Service	B						
Analysis Period (min)				15								

# HCM Unsignalized Intersection Capacity Analysis

## 2: Torbram Road & Torbram Connector
























2036 FT PM  
01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	110	47	253	52	10	106
Future Volume (Veh/h)	110	47	253	52	10	106
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	120	51	275	57	11	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	440	304			332	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	440	304			332	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	93			99	
cM capacity (veh/h)	569	736			1227	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	120	51	332	126		
Volume Left	120	0	0	11		
Volume Right	0	51	57	0		
cSH	569	736	1700	1227		
Volume to Capacity	0.21	0.07	0.20	0.01		
Queue Length 95th (m)	6.3	1.8	0.0	0.2		
Control Delay (s)	13.0	10.3	0.0	0.8		
Lane LOS	B	B		A		
Approach Delay (s)	12.2		0.0	0.8		
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			29.2%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT PM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	2100	243	167	2194	42	305	176	169	49	95	122
Future Volume (vph)	68	2100	243	167	2194	42	305	176	169	49	95	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.5	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5
Storage Length (m)	100.0		125.0	105.0		0.0	80.0		0.0	80.0		80.0
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (m)	50.0			100.0			70.0			100.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850		0.997				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1733	4734	1597	1785	4854	0	1785	1942	1587	1785	1942	1465
Flt Permitted	0.061			0.058			0.695			0.597		
Satd. Flow (perm)	111	4734	1597	109	4854	0	1306	1942	1587	1122	1942	1465
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243		3				121			83
Link Speed (k/h)		80			80			70			70	
Link Distance (m)		442.3			716.7			493.9			483.3	
Travel Time (s)		19.9			32.3			25.4			24.9	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	12%	0%	0%	9%	4%	0%	0%	4%	0%	0%	9%
Adj. Flow (vph)	68	2100	243	167	2194	42	305	176	169	49	95	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	2100	243	167	2236	0	305	176	169	49	95	122
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.97	1.01	1.01	0.97	0.97	1.01	0.97	0.97	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8			2		2	6		6
Minimum Split (s)	8.0	50.3	50.3	8.0	50.3		43.1	43.1	43.1	43.1	43.1	43.1
Total Split (s)	8.0	73.0	73.0	14.0	79.0		48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	5.9%	54.1%	54.1%	10.4%	58.5%		35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	5.0	65.7	65.7	11.0	71.7		40.9	40.9	40.9	40.9	40.9	40.9
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6		4.2	4.2	4.2	4.2	4.2	4.2
All-Red Time (s)	0.0	2.7	2.7	0.0	2.7		2.9	2.9	2.9	2.9	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	7.3	7.3	3.0	7.3		7.1	7.1	7.1	7.1	7.1	7.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Walk Time (s)		8.0	8.0		8.0		8.0	8.0	8.0	8.0	8.0	8.0
Flash Dont Walk (s)		35.0	35.0		35.0		28.0	28.0	28.0	28.0	28.0	28.0
Pedestrian Calls (#/hr)		0	0		0		0	0	0	0	0	0
Act Effect Green (s)	75.0	65.7	65.7	84.0	71.7		40.9	40.9	40.9	40.9	40.9	40.9

Lanes, Volumes, Timings  
3: Torbram Road & Mayfield Road

2036 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.56	0.49	0.49	0.62	0.53		0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.56	0.91	0.27	0.82	0.87		0.77	0.30	0.30	0.14	0.16	0.24
Control Delay	33.1	39.2	3.0	59.5	32.1		57.4	37.8	12.9	35.9	35.5	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	39.2	3.0	59.5	32.1		57.4	37.8	12.9	35.9	35.5	14.2
LOS	C	D	A	E	C		E	D	B	D	D	B
Approach Delay	35.4			34.0			40.5			25.8		
Approach LOS	D			C			D			C		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

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

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 34.9

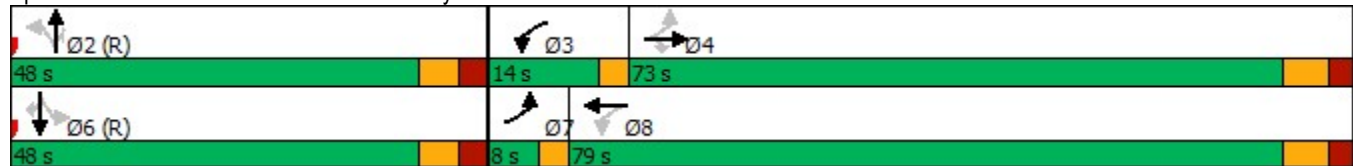
Intersection LOS: C

Intersection Capacity Utilization 98.0%

ICU Level of Service F

Analysis Period (min) 15



























Splits and Phases: 3: Torbram Road & Mayfield Road



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT PM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (vph)	59	2192	98	41	2125	27	104	0	23	42	0	186
Future Volume (vph)	59	2192	98	41	2125	27	104	0	23	42	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.8	3.5	3.5	3.8	3.6	3.8	3.6	3.8	3.6	3.6	3.6
Storage Length (m)	75.0		55.0	75.0		55.0	55.0		0.0	55.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1517	4734	1566	1750	4864	1170	1809	1583	0	1357	1313	0
Flt Permitted	0.066			0.070			0.575			0.742		
Satd. Flow (perm)	105	4734	1566	129	4864	1170	1095	1583	0	1060	1313	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			93			53			57			90
Link Speed (k/h)		80			80			50				50
Link Distance (m)		716.7			643.7			353.1				866.6
Travel Time (s)		32.3			29.0			25.4				62.4
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 (%)	19%	12%	2%	2%	9%	38%	2%	0%	2%	33%	0%	23%
Adj. Flow (vph)	59	2192	98	41	2125	27	104	0	23	42	0	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	2192	98	41	2125	27	104	23	0	42	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.8			3.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												Yes
Headway Factor	1.00	0.97	1.01	1.01	0.97	1.00	0.97	1.00	0.97	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	2.0	25.0	10.0		10.0	10.0	
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0		0.0	0.0	
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	2.0	10.0	0.6		10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	



Lanes, Volumes, Timings  
4: Mayfield Connector & Mayfield Road

2036 FT PM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	7	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0		5.0	5.0	
Minimum Split (s)	9.5	25.1	25.1	25.1	25.1	25.1	24.6	24.6		24.6	24.6	
Total Split (s)	9.8	104.8	104.8	95.0	95.0	95.0	30.2	30.2		30.2	30.2	
Total Split (%)	7.3%	77.6%	77.6%	70.4%	70.4%	70.4%	22.4%	22.4%		22.4%	22.4%	
Maximum Green (s)	6.8	97.7	97.7	87.9	87.9	87.9	23.6	23.6		23.6	23.6	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	3.7	3.7		3.7	3.7	
All-Red Time (s)	0.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9		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	
Total Lost Time (s)	3.0	7.1	7.1	7.1	7.1	7.1	6.6	6.6		6.6	6.6	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	Min	Min	Min	None	None		Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	68.9	64.7	64.7	57.4	57.4	57.4	24.5	24.5		24.5	24.5	
Actuated g/C Ratio	0.67	0.63	0.63	0.56	0.56	0.56	0.24	0.24		0.24	0.24	
v/c Ratio	0.38	0.74	0.10	0.58	0.79	0.04	0.40	0.06		0.17	0.49	
Control Delay	12.9	14.3	1.6	49.3	20.1	0.6	45.7	0.3		41.5	26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.9	14.3	1.6	49.3	20.1	0.6	45.7	0.3		41.5	26.7	
LOS	B	B	A	D	C	A	D	A		D	C	
Approach Delay		13.8			20.4			37.5			29.4	
Approach LOS		B			C			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 103.4

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 18.1

Intersection LOS: B

Intersection Capacity Utilization 87.5%

ICU Level of Service E































Analysis Period (min) 15

Splits and Phases: 4: Mayfield Connector & Mayfield Road















Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT PM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			 	
Traffic Volume (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Future Volume (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	3.5	3.8	3.8	3.5	3.8	3.5	3.5	3.8	3.5
Storage Length (m)	200.0		60.0	165.0		60.0	95.0		60.0	100.0		105.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	70.0			100.0			80.0			65.0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00					0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1293	4939	1515	1653	5216	977	1700	3386	1426	1475	3355	1353
Flt Permitted	0.110			0.218			0.304			0.350		
Satd. Flow (perm)	150	4939	1493	379	5216	960	543	3386	1426	543	3355	1331
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			201			128			106			323
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		643.7			619.2			458.9			446.4	
Travel Time (s)		38.6			37.2			27.5			26.8	
Confl. Peds. (#/hr)	4		2	2		4	3					3
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 (%)	38%	13%	9%	8%	7%	69%	5%	9%	12%	21%	10%	18%
Adj. Flow (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	359	1219	246	126	1253	77	394	628	103	129	442	323
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.01	0.91	0.97	1.01	0.91	0.97	1.01	0.97	1.01	1.01	0.97	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0	25.0	10.0	10.0
Trailing Detector (m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Position(m)	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Detector 1 Size(m)	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0	10.0	0.6	10.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lanes, Volumes, Timings  
6: Airport Road & Mayfield Road

2036 FT PM  
01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0	5.0	12.0	12.0
Minimum Split (s)	8.0	39.1	39.1	8.0	39.1	39.1	8.0	34.9	34.9	9.0	34.9	34.9
Total Split (s)	38.0	58.2	58.2	18.8	39.1	39.1	23.0	44.9	44.9	13.0	34.9	34.9
Total Split (%)	28.1%	43.1%	43.1%	13.9%	29.0%	29.0%	17.0%	33.3%	33.3%	9.6%	25.9%	25.9%
Maximum Green (s)	35.0	51.1	51.1	15.8	32.0	32.0	20.0	38.0	38.0	10.0	28.0	28.0
Yellow Time (s)	3.0	4.0	4.0	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	3.1	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	0.0
Total Lost Time (s)	3.0	7.1	7.1	3.0	7.1	7.1	3.0	6.9	6.9	3.0	6.9	6.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effect Green (s)	74.1	57.4	57.4	47.0	33.2	33.2	54.9	38.5	38.5	41.4	28.0	28.0
Actuated g/C Ratio	0.55	0.43	0.43	0.35	0.25	0.25	0.41	0.29	0.29	0.31	0.21	0.21
v/c Ratio	0.98	0.58	0.33	0.57	0.98	0.23	1.01	0.65	0.21	0.56	0.64	0.61
Control Delay	79.2	31.3	7.1	29.7	70.4	2.3	80.6	46.3	7.3	37.7	53.6	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	0.0
Total Delay	79.2	31.3	7.1	29.7	70.4	2.3	80.6	46.3	7.3	37.7	53.6	10.0
LOS	E	C	A	C	E	A	F	D	A	D	D	A
Approach Delay		37.5			63.3			54.7			35.6	
Approach LOS		D			E			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 125.1 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 47.9

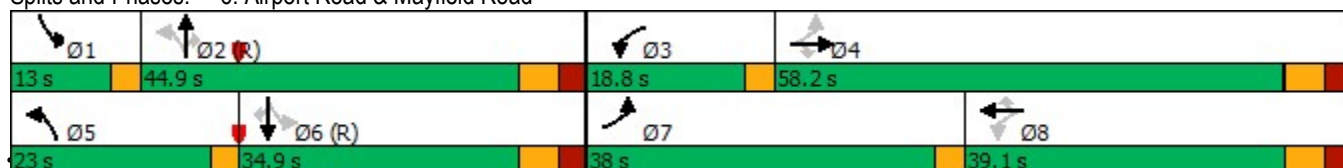
Intersection LOS: D

Intersection Capacity Utilization 110.1%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 6: Airport Road & Mayfield Road

























# HCM Unsignalized Intersection Capacity Analysis

## 7: Airport Road & Perdue Court/Davis Lane

2036 FT PM























01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	1	76	113	0	4	78	922	90	17	599	6
Future Volume (Veh/h)	8	1	76	113	0	4	78	922	90	17	599	6
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	0.96	1.00	1.00	1.00
Hourly flow rate (vph)	8	1	76	113	0	4	78	922	94	17	599	6
Pedestrians	1			5								
Lane Width (m)	3.6			3.6								
Walking Speed (m/s)	1.2			1.2								
Percent Blockage	0			0								
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1255	1811	300	1493	1723	466	606				1021	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1255	1811	300	1493	1723	466	606				1021	
tC, single (s)	7.9	6.5	7.2	7.6	6.5	6.9	5.8				5.8	
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.4	3.6	4.0	3.3	3.1				3.1	
p0 queue free %	92	98	89	0	100	99	86				95	
cM capacity (veh/h)	95	65	663	61	73	546	561				339	
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	8	77	113	4	78	461	461	94	17	300	300	6
Volume Left	8	0	113	0	78	0	0	0	17	0	0	0
Volume Right	0	76	0	4	0	0	0	94	0	0	0	6
cSH	95	592	61	546	561	1700	1700	1700	339	1700	1700	1700
Volume to Capacity	0.08	0.13	1.86	0.01	0.14	0.27	0.27	0.06	0.05	0.18	0.18	0.00
Queue Length 95th (m)	2.1	3.6	84.4	0.2	3.8	0.0	0.0	0.0	1.3	0.0	0.0	0.0
Control Delay (s)	46.2	12.0	553.2	11.6	12.4	0.0	0.0	0.0	16.2	0.0	0.0	0.0
Lane LOS	E	B	F	B	B				C			
Approach Delay (s)	15.2		534.7		0.9				0.4			
Approach LOS	C		F									
Intersection Summary												
Average Delay	33.9											
Intersection Capacity Utilization	51.7%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2036 FT PM













01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	0	82	34	0	5	63	818	26	2	460	30
Future Volume (vph)	146	0	82	34	0	5	63	818	26	2	460	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.8	3.8	4.0	3.6	4.0	3.6	3.8	3.5	3.5	3.8	3.6
Storage Length (m)	55.0		0.0	0.0		0.0	0.0		145.0	75.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			100.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt		0.850			0.850				0.850		0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1463	1342	0	1328	1324	0	1280	3449	992	1116	3083	0
Flt Permitted	0.754			0.704			0.473			0.324		
Satd. Flow (perm)	1161	1342	0	984	1324	0	637	3449	992	380	3083	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		347			137				47		8	
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		667.0			270.4			438.0			348.1	
Travel Time (s)		48.0			19.5			19.7			15.7	
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 (%)	22%	0%	23%	42%	0%	22%	41%	7%	61%	60%	19%	13%
Adj. Flow (vph)	146	0	82	34	0	5	63	818	26	2	460	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	82	0	34	5	0	63	818	26	2	490	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			7.1			7.1	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane		Yes										
Headway Factor	1.01	0.97	0.97	0.94	1.00	0.94	1.00	0.97	1.01	1.01	0.97	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (m)	10.0	10.0		10.0	10.0		25.0	10.0	10.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		15.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	10.0	0.6		10.0	0.6		10.0	0.6	10.0	10.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	

Lanes, Volumes, Timings  
8: Airport Road & Airport Site Access/12333 Airport Road

2036 FT PM

01/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		8	8		2	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	12.0	
Minimum Split (s)	36.2	36.2		36.2	36.2		35.6	35.6	35.6	35.6	35.6	
Total Split (s)	51.0	51.0		51.0	51.0		69.0	69.0	69.0	69.0	69.0	
Total Split (%)	42.5%	42.5%		42.5%	42.5%		57.5%	57.5%	57.5%	57.5%	57.5%	
Maximum Green (s)	42.8	42.8		42.8	42.8		62.4	62.4	62.4	62.4	62.4	
Yellow Time (s)	4.0	4.0		4.0	4.0		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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2		8.2	8.2		6.6	6.6	6.6	6.6	6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	17.6	17.6		17.6	17.6		65.3	65.3	65.3	65.3	65.3	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.67	0.67	0.67	0.67	0.67	
v/c Ratio	0.70	0.16		0.19	0.01		0.15	0.36	0.04	0.01	0.24	
Control Delay	54.5	0.6		34.6	0.0		8.3	8.2	1.1	7.5	7.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	54.5	0.6		34.6	0.0		8.3	8.2	1.1	7.5	7.2	
LOS	D	A		C	A		A	A	A	A	A	
Approach Delay		35.2			30.1			8.0			7.2	
Approach LOS		D			C			A			A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 97.7

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 12.0

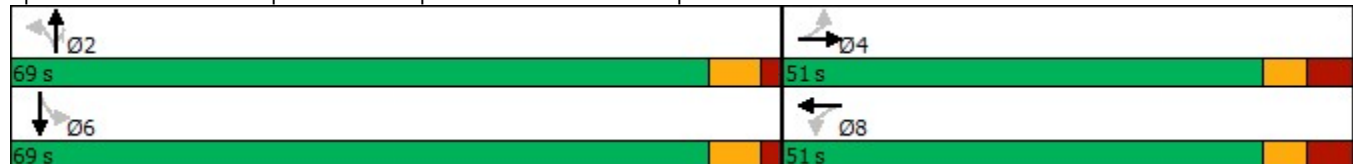
Intersection LOS: B

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Airport Road & Airport Site Access/12333 Airport Road












# HCM Unsignalized Intersection Capacity Analysis

## 12: Torbram Road & Site Access "1"

2036 FT PM

01/19/2023










						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	16	288	15	4	237
Future Volume (Veh/h)	30	16	288	15	4	237
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	17	313	16	4	258
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	587	321			329	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	587	321			329	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			100	
cM capacity (veh/h)	474	724			1242	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	50	329	262			
Volume Left	33	0	4			
Volume Right	17	16	0			
cSH	537	1700	1242			
Volume to Capacity	0.09	0.19	0.00			
Queue Length 95th (m)	2.5	0.0	0.1			
Control Delay (s)	12.4	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	12.4	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay		1.0				
Intersection Capacity Utilization		26.1%	ICU Level of Service	A		
Analysis Period (min)		15				



# HCM Unsignalized Intersection Capacity Analysis





















## 13: Torbram Road & Site Access "2"

2036 FT PM  
01/19/2023

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	16	289	15	4	211
Future Volume (Veh/h)	30	16	289	15	4	211
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	17	314	16	4	229
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	559	322			330	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	559	322			330	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			100	
cM capacity (veh/h)	492	724			1241	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	50	330	233			
Volume Left	33	0	4			
Volume Right	17	16	0			
cSH	552	1700	1241			
Volume to Capacity	0.09	0.19	0.00			
Queue Length 95th (m)	2.4	0.0	0.1			
Control Delay (s)	12.2	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	12.2	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		26.1%		ICU Level of Service		A
Analysis Period (min)		15				













# HCM Unsignalized Intersection Capacity Analysis 14: Mayfield Connector & Airport Road/Airport Connector

2036 FT PM  
01/19/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	0	14	10	77	7	26	3	25	54	60	69	0
Future Volume (vph)	0	14	10	77	7	26	3	25	54	60	69	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	15	11	84	8	28	3	27	59	65	75	0
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total (vph)	0	26	84	36	3	86	65	75				
Volume Left (vph)	0	0	84	0	3	0	65	0				
Volume Right (vph)	0	11	0	28	0	59	0	0				
Hadj (s)	0.00	-0.26	0.53	-0.51	0.53	-0.45	0.53	0.03				
Departure Headway (s)	5.2	4.9	5.6	4.6	5.6	4.6	5.5	5.0				
Degree Utilization, x	0.00	0.04	0.13	0.05	0.00	0.11	0.10	0.10				
Capacity (veh/h)	670	692	612	748	622	754	629	694				
Control Delay (s)	7.0	6.9	8.3	6.6	7.4	6.9	7.9	7.4				
Approach Delay (s)	6.9		7.8		7.0		7.6					
Approach LOS	A		A		A		A					
Intersection Summary												
Delay			7.5									
Level of Service			A									
Intersection Capacity Utilization			27.6%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis 15: Mayfield Connector & Torbram Connector

2036 FT PM  
01/19/2023

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	39	15	0	0	0
Future Volume (vph)	0	39	15	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	42	16	0	0	0
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	
Volume Total (vph)	0	42	16	0	0	
Volume Left (vph)	0	0	16	0	0	
Volume Right (vph)	0	42	0	0	0	
Hadj (s)	0.00	-0.67	0.53	0.00	0.00	
Departure Headway (s)	4.5	3.9	5.1	4.6	4.4	
Degree Utilization, x	0.00	0.05	0.02	0.00	0.00	
Capacity (veh/h)	796	921	687	785	814	
Control Delay (s)	6.3	5.9	7.0	6.4	7.4	
Approach Delay (s)	5.9		7.0		0.0	
Approach LOS	A		A		A	
Intersection Summary						
Delay			6.2			
Level of Service			A			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

# SIM TRAFFIC REPORTS

Due to the Site Plan being in development at the time this analysis was being conducted the naming convention of the internal road network used in the final Site Plan differs from the naming convention used in this analysis. The internal roads listed as Steet "A", Street "B", and Street "C" in the latest Site Plan and this report are named Airport Connector, Mayfield Connector, and Torbram Connector, respectively within the Synchro and Sim Traffic reports attached to **Appendix G**.

Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	26.5	19.3	19.4	25.1
Average Queue (m)	12.6	9.4	9.8	11.4
95th Queue (m)	20.6	15.0	16.8	18.8
Link Distance (m)	581.5	516.2	3059.7	648.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	17.3	92.4	97.2	74.7	23.9	22.4	54.8	63.1	71.8	38.1	30.4	15.2
Average Queue (m)	6.3	59.3	54.2	39.7	11.6	7.5	31.6	36.6	38.5	17.5	9.1	3.0
95th Queue (m)	14.4	82.4	78.5	67.4	20.6	17.8	52.3	56.8	62.8	33.0	21.1	9.0
Link Distance (m)		652.1	652.1	652.1			1339.8	1339.8	1339.8		448.0	448.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		0										
Queuing Penalty (veh)		0										

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	12.4	54.1	13.0
Average Queue (m)	2.4	30.3	3.1
95th Queue (m)	8.4	48.3	9.5
Link Distance (m)		3059.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (m)	96.8	41.4	47.6	32.1	55.3	83.2	59.3	48.2	41.2	34.8	39.7	39.4
Average Queue (m)	44.0	19.0	22.0	12.3	17.1	38.9	33.3	23.7	16.4	10.2	9.1	11.4
95th Queue (m)	83.4	36.1	38.0	25.1	36.9	64.1	56.1	40.1	31.4	25.9	23.1	27.2
Link Distance (m)		1339.8	1339.8	1339.8		87.2			440.3	440.3		
Upstream Blk Time (%)						0						
Queuing Penalty (veh)						1						
Storage Bay Dist (m)	200.0				50.0		70.0	95.0			60.0	100.0
Storage Blk Time (%)					0	3					0	
Queuing Penalty (veh)					0	11					0	

Intersection: 6: Airport Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (m)	85.4	81.8	28.1
Average Queue (m)	47.2	49.1	13.3
95th Queue (m)	72.8	74.4	23.9
Link Distance (m)	429.4	429.4	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)		105.0	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T
Maximum Queue (m)	10.0	20.7	34.6	24.7	34.6	1.7	10.2	15.0	1.5
Average Queue (m)	1.1	5.7	12.9	4.8	10.8	0.1	0.6	0.5	0.1
95th Queue (m)	5.9	15.5	27.7	17.6	25.9	0.9	7.5	5.1	0.8
Link Distance (m)	101.7	101.7		122.0		429.4			416.2
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0		65.0	70.0	
Storage Blk Time (%)			3						
Queuing Penalty (veh)			0						

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	62.7	19.0	22.2	27.4	16.5	18.7	45.4	33.0
Average Queue (m)	24.4	3.3	7.6	9.3	5.1	3.4	14.7	14.4
95th Queue (m)	49.9	11.7	17.9	22.5	15.7	13.8	33.8	28.6
Link Distance (m)	253.1	253.1	416.2	416.2			239.4	239.4
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Airport Road & Healey Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	52.8	16.4	34.6
Average Queue (m)	17.7	0.7	16.6
95th Queue (m)	35.7	6.7	33.6
Link Distance (m)	239.3	1864.7	29.2
Upstream Blk Time (%)			1
Queuing Penalty (veh)			9
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Airport Road & Old School Road

Movement	EB	NB	SB
Directions Served	LR	LT	T
Maximum Queue (m)	57.5	28.8	36.6
Average Queue (m)	18.4	11.8	3.1
95th Queue (m)	39.1	25.7	17.9
Link Distance (m)	525.3	29.2	215.9
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		1	
Storage Bay Dist (m)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0



Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	23.0	34.9	29.2	14.8
Average Queue (m)	10.1	15.3	16.9	7.2
95th Queue (m)	16.4	25.3	27.7	12.4
Link Distance (m)	581.5	516.2	3059.7	648.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	19.2	87.5	77.9	60.6	19.6	37.4	82.6	90.1	102.0	57.0	58.1	20.4
Average Queue (m)	7.3	54.7	48.9	29.0	8.1	16.4	51.1	60.7	64.6	26.1	19.9	5.3
95th Queue (m)	16.0	74.9	71.7	56.8	15.5	31.0	73.6	85.1	90.3	46.7	40.6	13.2
Link Distance (m)		652.1	652.1	652.1			1339.8	1339.8	1339.8		448.0	448.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	7.0	28.8	18.1
Average Queue (m)	0.7	8.8	3.1
95th Queue (m)	3.8	22.0	10.8
Link Distance (m)		3059.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	T	R	L
Maximum Queue (m)	110.1	78.2	72.3	41.9	66.5	95.8	91.8	143.2	142.4	137.7	23.1	40.2
Average Queue (m)	47.6	40.2	44.2	14.6	21.2	59.4	53.5	76.0	60.2	50.0	9.1	17.3
95th Queue (m)	87.7	67.4	65.8	31.4	47.1	87.8	81.5	145.5	134.4	109.1	20.1	33.9
Link Distance (m)		1339.8	1339.8	1339.8		94.5			440.3	440.3		
Upstream Blk Time (%)						0	0					
Queuing Penalty (veh)						2	0					
Storage Bay Dist (m)	200.0				50.0		70.0	95.0			60.0	100.0
Storage Blk Time (%)					0	13	1	15	0	3		
Queuing Penalty (veh)					0	61	4	36	0	2		

Intersection: 6: Airport Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (m)	53.0	59.6	47.5
Average Queue (m)	27.7	30.7	20.9
95th Queue (m)	45.7	52.1	35.0
Link Distance (m)	429.4	429.4	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)		105.0	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T	T
Maximum Queue (m)	17.7	31.8	37.0	37.3	34.8	4.1	22.2	1.6	5.4
Average Queue (m)	2.7	10.5	18.3	2.9	13.6	0.3	3.7	0.1	0.2
95th Queue (m)	9.9	22.2	33.9	16.3	29.0	3.1	14.8	0.9	2.5
Link Distance (m)	101.7	101.7		122.0				416.2	416.2
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0	65.0	70.0		
Storage Blk Time (%)			5						
Queuing Penalty (veh)			0						

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	38.9	13.5	36.7	36.5	12.8	5.5	24.6	37.2
Average Queue (m)	9.8	1.3	9.1	10.5	0.9	0.2	6.7	7.7
95th Queue (m)	24.6	7.1	26.0	29.3	6.1	3.0	19.4	23.0
Link Distance (m)	253.1	253.1	416.2	416.2			238.0	238.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Airport Road & Healey Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	155.3	36.4	31.4
Average Queue (m)	67.3	4.6	13.7
95th Queue (m)	136.2	20.1	31.3
Link Distance (m)	239.3	1865.7	29.2
Upstream Blk Time (%)			2
Queuing Penalty (veh)			6
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Airport Road & Old School Road

Movement	EB	NB	SB
Directions Served	LR	LT	T
Maximum Queue (m)	31.0	33.6	20.0
Average Queue (m)	10.1	16.2	1.9
95th Queue (m)	22.1	31.6	12.1
Link Distance (m)	525.3	29.2	215.9
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		4	
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	31.2	15.0	28.9	24.7
Average Queue (m)	12.3	8.0	11.2	12.9
95th Queue (m)	20.9	12.7	21.1	20.2
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	25.2	143.3	136.9	117.9	43.9	73.1	295.8	109.3	111.0	128.6	99.9	30.2
Average Queue (m)	8.5	101.4	93.6	79.3	19.4	38.3	48.3	45.3	47.4	63.2	19.0	11.6
95th Queue (m)	20.0	135.4	127.6	110.4	34.3	66.4	165.8	83.1	85.1	111.8	75.2	24.5
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		9					0			9		
Queuing Penalty (veh)		4					0			5		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	14.1	61.2	28.7
Average Queue (m)	3.0	34.1	8.6
95th Queue (m)	9.6	56.6	22.3
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	157.7	162.7	165.7	62.5	62.0	119.9	123.3	128.8	56.8	33.4
Average Queue (m)	125.1	126.0	133.9	33.0	8.3	86.7	92.7	95.2	29.8	4.4
95th Queue (m)	155.1	154.0	162.1	75.7	38.8	122.0	129.0	130.5	53.3	18.6
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			31	0		20			0	
Queuing Penalty (veh)			34	1		3			0	

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	112.0	83.4	84.3	118.7	67.5	31.3	123.3	127.8	19.1	110.0	62.5	50.4
Average Queue (m)	63.5	48.4	53.0	67.9	61.3	11.9	78.9	76.9	2.1	56.3	20.0	15.9
95th Queue (m)	97.5	71.5	75.7	110.5	78.2	25.9	113.2	113.2	9.0	106.7	42.9	36.6
Link Distance (m)		616.3	616.3	616.3			591.7	591.7			432.1	432.1
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)				8	13			19		4	0	0
Queuing Penalty (veh)				31	38			7		4	0	0

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	23.4	28.9	80.4	87.2	48.5
Average Queue (m)	10.0	13.0	52.9	55.3	21.6
95th Queue (m)	21.0	25.8	71.9	76.9	38.5
Link Distance (m)			417.7	417.7	
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	0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	L	L	T
Maximum Queue (m)	14.1	16.0	33.9	8.2	29.6	4.0	1.5
Average Queue (m)	1.2	5.2	13.4	2.8	9.7	0.1	0.0
95th Queue (m)	6.7	12.6	27.0	8.9	25.4	2.2	0.8
Link Distance (m)	101.7	101.7		257.1			416.3
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			30.0		70.0	70.0	
Storage Blk Time (%)			2				
Queuing Penalty (veh)			0				

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	55.8	17.6	25.8	25.9	18.2	20.0	52.5	37.7
Average Queue (m)	19.5	3.2	9.3	9.2	4.4	4.6	20.5	11.5
95th Queue (m)	41.5	11.3	19.7	21.2	15.4	15.4	42.7	28.2
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 128
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	24.3	17.5	22.2	24.4
Average Queue (m)	12.7	8.8	10.6	12.4
95th Queue (m)	19.8	13.0	19.3	20.1
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	25.9	153.3	142.5	127.2	37.4	64.9	88.3	92.6	92.4	95.7	70.4	39.9
Average Queue (m)	8.2	102.9	94.4	78.2	16.3	34.8	38.0	44.0	46.1	58.4	13.1	12.6
95th Queue (m)	19.4	143.5	136.6	117.3	29.8	54.5	68.7	74.9	78.4	90.9	37.6	28.1
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		10		0			0			3	0	
Queuing Penalty (veh)		4		1			0			2	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	12.0	59.0	27.0
Average Queue (m)	2.8	29.0	7.5
95th Queue (m)	9.7	48.7	19.5
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			



Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	343.6	511.0	175.9	62.5	82.4	122.6	139.4	133.2	60.0	13.0
Average Queue (m)	134.5	141.0	137.3	37.2	12.7	89.1	95.8	98.3	29.8	3.4
95th Queue (m)	237.5	278.3	171.0	81.7	57.6	118.4	125.9	126.1	55.0	10.1
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)		0								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			32	0	0	19			1	
Queuing Penalty (veh)			36	1	0	3			0	

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	151.2	100.1	111.1	133.0	67.5	32.0	139.3	134.0	18.3	114.9	107.7	101.2
Average Queue (m)	80.3	47.4	55.5	71.2	60.8	11.8	82.4	81.5	1.8	72.8	53.5	24.7
95th Queue (m)	135.3	77.1	87.5	115.1	78.2	26.0	124.9	122.2	8.0	167.8	167.3	84.2
Link Distance (m)		616.3	616.3	616.3			591.7	591.7			432.1	432.1
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	0			8	11			22		24		
Queuing Penalty (veh)	0			31	34			8		25		

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	32.2	32.9	82.2	86.7	50.4
Average Queue (m)	10.9	16.3	57.9	61.3	21.9
95th Queue (m)	24.6	31.0	78.9	82.8	38.5
Link Distance (m)			417.7	417.7	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0	100.0		105.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T
Maximum Queue (m)	11.6	20.4	35.3	8.3	32.2	5.9	12.1	1.5
Average Queue (m)	1.2	6.3	14.2	3.2	10.4	0.2	0.4	0.1
95th Queue (m)	6.4	15.2	27.6	9.5	25.9	3.3	4.0	0.8
Link Distance (m)	101.7	101.7		257.1				416.3
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: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	60.6	10.8	31.6	32.3	24.9	17.6	39.0	33.4
Average Queue (m)	20.3	1.8	10.3	10.2	5.2	3.9	18.3	13.7
95th Queue (m)	43.0	7.1	23.2	23.7	17.3	13.7	34.5	30.4
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 143

Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	19.4	31.4	47.1	17.8
Average Queue (m)	9.7	14.7	18.9	7.9
95th Queue (m)	16.4	23.4	33.1	13.9
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	28.1	156.3	148.1	124.0	39.4	75.1	56.6	63.1	62.4	110.0	70.2	47.6
Average Queue (m)	9.6	111.9	102.4	82.8	14.5	34.8	12.9	15.1	16.0	61.0	22.6	18.8
95th Queue (m)	22.3	149.1	137.9	117.7	27.0	61.3	35.9	39.5	41.8	96.4	49.0	39.1
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		12		0						3	0	
Queuing Penalty (veh)		5		0						4	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	9.5	26.6	15.9
Average Queue (m)	0.7	10.5	3.6
95th Queue (m)	4.8	23.7	11.2
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	192.7	180.9	177.8	62.5	82.4	136.4	139.4	143.0	34.5	10.9
Average Queue (m)	154.6	147.4	148.7	28.5	25.6	98.2	104.4	110.5	15.0	3.0
95th Queue (m)	187.0	177.5	178.9	73.4	75.3	127.1	132.2	139.3	30.2	9.3
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			30	0	0	20				
Queuing Penalty (veh)			29	0	0	8				

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	174.9	55.5	57.0	63.8	51.7	118.6	208.9	212.6	129.9	175.0	447.4	443.0
Average Queue (m)	116.9	26.5	32.7	37.7	16.7	29.5	123.0	121.1	25.3	173.6	358.0	342.6
95th Queue (m)	180.5	51.0	55.3	58.9	38.7	115.0	230.7	229.0	100.7	183.4	535.1	538.1
Link Distance (m)		616.3	616.3	616.3			591.7	591.7			432.1	432.1
Upstream Blk Time (%)											38	14
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	1			2	0		11	38		96	0	8
Queuing Penalty (veh)	2			3	0		12	23		249	0	7

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	34.4	74.0	62.6	66.6	67.2
Average Queue (m)	13.7	29.1	35.1	35.8	31.0
95th Queue (m)	27.5	57.1	52.4	56.0	55.7
Link Distance (m)			417.7	417.7	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0	100.0		105.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T	T
Maximum Queue (m)	12.0	28.4	37.0	39.3	40.0	7.3	17.3	3.6	2.9
Average Queue (m)	1.8	10.6	21.5	5.2	13.6	0.2	2.5	0.1	0.1
95th Queue (m)	7.6	21.0	37.5	28.5	30.5	2.9	11.7	2.0	1.2
Link Distance (m)	101.7	101.7		257.1				416.3	416.3
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0	65.0	70.0		
Storage Blk Time (%)			11						
Queuing Penalty (veh)			0						

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	45.8	12.3	42.4	49.0	14.9	2.4	26.8	22.7
Average Queue (m)	11.4	1.6	12.0	14.8	1.4	0.1	8.4	6.4
95th Queue (m)	28.4	7.1	34.6	39.6	7.8	1.3	21.3	18.0
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 344
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	20.4	28.1	40.4	15.5
Average Queue (m)	9.7	14.8	18.2	7.6
95th Queue (m)	15.8	23.0	31.8	14.8
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	19.8	173.4	159.2	123.9	40.8	66.8	65.8	68.8	70.6	98.5	71.8	45.8
Average Queue (m)	9.0	114.7	104.9	79.8	15.6	37.6	14.6	15.9	16.0	58.8	24.9	17.5
95th Queue (m)	19.1	153.2	139.5	113.0	29.2	60.2	43.4	46.9	47.2	85.4	54.8	35.5
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		13		0			1			2	0	
Queuing Penalty (veh)		5		0			1			3	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	4.6	23.6	17.3
Average Queue (m)	0.2	6.9	3.7
95th Queue (m)	1.8	17.9	12.0
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	194.2	183.5	185.2	62.5	82.3	136.4	149.9	147.3	40.3	10.7
Average Queue (m)	155.1	148.9	148.3	34.4	22.8	99.0	108.3	111.3	14.2	2.7
95th Queue (m)	188.5	179.1	178.7	79.7	66.4	130.6	141.7	141.3	31.6	8.7
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			30	0	0	19			0	
Queuing Penalty (veh)			29	0	0	8			0	

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	198.3	67.1	64.1	69.2	65.8	264.6	390.8	379.3	129.9	175.0	446.6	445.5
Average Queue (m)	125.1	26.3	32.9	38.3	19.1	189.5	224.4	211.7	36.9	171.3	336.2	317.2
95th Queue (m)	191.8	54.2	57.0	61.9	44.3	310.3	396.8	385.4	125.3	190.4	536.7	537.9
Link Distance (m)		616.3	616.3	616.3			591.7	591.7			432.1	432.1
Upstream Blk Time (%)											35	15
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	3			3	0	59	12	52		96	0	11
Queuing Penalty (veh)	8			5	0	272	14	32		248	0	10

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	59.7	69.6	55.7	66.4	64.0
Average Queue (m)	12.4	29.0	33.4	35.1	31.8
95th Queue (m)	33.7	55.1	51.4	56.8	54.5
Link Distance (m)			417.7	417.7	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0	100.0		105.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					



Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T	T	R
Maximum Queue (m)	14.2	22.1	37.1	45.6	42.5	1.6	3.8	21.0	1.6	1.5	3.2
Average Queue (m)	1.7	9.5	21.7	5.4	13.0	0.1	0.1	3.8	0.1	0.1	0.1
95th Queue (m)	7.7	17.9	37.4	31.6	31.7	0.9	2.1	15.1	0.9	0.8	1.8
Link Distance (m)	101.7	101.7		257.1		417.7			416.3	416.3	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)			30.0		70.0		65.0	70.0			60.0
Storage Blk Time (%)			10	0							
Queuing Penalty (veh)			0	0							

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	33.1	13.2	47.0	52.0	17.7	13.2	24.8	26.1
Average Queue (m)	11.5	1.2	12.1	15.6	1.3	0.7	8.0	6.3
95th Queue (m)	25.3	6.9	33.1	40.2	8.3	5.5	21.3	19.1
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 636

Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	31.1	15.4	24.8	25.6
Average Queue (m)	13.9	8.8	11.4	13.7
95th Queue (m)	22.9	13.3	20.7	21.8
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	105.0	221.5	205.2	183.7	50.3	96.0	123.4	134.8	127.3	149.9	279.9	45.0
Average Queue (m)	19.4	132.4	124.3	104.7	19.7	48.8	49.3	55.1	55.8	133.0	150.3	18.0
95th Queue (m)	82.8	190.9	179.9	156.4	36.3	85.1	95.2	103.0	103.3	176.6	340.0	36.6
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		23		3		0	1			77		
Queuing Penalty (veh)		9		8		0	2			46		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	14.8	75.2	18.4
Average Queue (m)	2.7	38.8	6.2
95th Queue (m)	9.2	65.0	15.0
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	184.7	360.4	353.7	62.5	82.3	310.1	313.6	158.0	59.0	35.7
Average Queue (m)	145.8	155.0	161.7	30.9	7.8	103.1	108.3	105.1	31.6	4.9
95th Queue (m)	181.7	255.0	256.0	77.5	38.6	203.1	206.8	148.4	59.2	19.0
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)		0				0	0			
Queuing Penalty (veh)		0				0	0			
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			32	0		22			1	
Queuing Penalty (veh)			35	0		3			0	

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	148.3	107.8	250.8	292.7	67.5	42.2	99.1	98.3	85.1	16.2	125.9	102.2
Average Queue (m)	73.9	61.4	72.2	85.6	61.4	13.1	65.3	62.9	51.0	1.5	56.4	21.8
95th Queue (m)	118.1	92.9	156.9	186.5	80.2	29.9	93.1	88.7	78.4	7.9	115.5	59.7
Link Distance (m)		616.3	616.3	616.3			591.7	591.7	591.7			432.1
Upstream Blk Time (%)				0								
Queuing Penalty (veh)				0								
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)				14	12				3		10	0
Queuing Penalty (veh)				58	43				1		10	0

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	63.4	26.4	41.2	110.8	112.4	57.9
Average Queue (m)	18.4	10.8	18.0	65.2	71.1	22.8
95th Queue (m)	41.6	22.9	35.3	97.0	102.3	43.0
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		60.0	100.0		105.0	
Storage Blk Time (%)				1	1	
Queuing Penalty (veh)				0	2	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T	R
Maximum Queue (m)	7.9	20.0	33.0	22.4	25.7	18.4	7.5	4.0	7.5
Average Queue (m)	1.0	6.7	15.1	4.6	9.7	0.6	0.3	0.1	0.3
95th Queue (m)	5.3	16.8	29.9	19.3	23.1	6.5	4.2	2.2	4.2
Link Distance (m)	101.7	101.7		257.1				416.3	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0	65.0	70.0		60.0
Storage Blk Time (%)			5						
Queuing Penalty (veh)			1						

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	59.5	12.9	23.4	30.2	19.4	18.8	50.3	35.1
Average Queue (m)	22.3	3.5	10.6	10.7	5.6	2.6	19.4	13.5
95th Queue (m)	44.4	11.5	22.0	24.6	16.7	12.1	40.3	28.7
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 221
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	21.5	26.3	39.8	21.8
Average Queue (m)	9.9	14.9	19.8	8.7
95th Queue (m)	16.3	22.9	33.7	15.7
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	106.5	184.3	171.5	151.5	32.5	68.7	278.7	283.1	80.5	110.8	91.0	52.3
Average Queue (m)	14.0	127.8	115.7	94.5	14.7	38.0	29.3	34.4	30.1	62.3	28.3	19.7
95th Queue (m)	56.7	173.0	160.2	136.6	27.4	59.9	147.1	152.6	62.5	104.4	60.8	39.0
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		17		1						7	0	
Queuing Penalty (veh)		7		2						9	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	7.3	40.3	16.0
Average Queue (m)	0.6	12.8	3.2
95th Queue (m)	3.7	29.5	10.7
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	214.9	362.3	203.0	62.5	82.4	327.1	329.3	168.4	39.4	10.5
Average Queue (m)	173.4	173.3	168.6	24.6	19.4	123.3	130.2	127.3	18.0	2.1
95th Queue (m)	214.2	271.9	206.0	69.0	59.3	217.8	225.0	163.7	35.2	7.4
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)		0				0	0			
Queuing Penalty (veh)		0				0	0			
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			29	0	0	20				
Queuing Penalty (veh)			29	0	0	8				

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	236.2	174.0	162.3	163.4	60.1	60.1	136.3	135.0	122.9	58.3	175.0	450.2
Average Queue (m)	145.7	60.8	51.5	45.8	19.3	25.8	91.7	88.4	73.9	4.2	174.7	386.0
95th Queue (m)	241.9	205.2	142.3	102.1	44.5	49.7	137.3	135.4	124.9	27.8	177.7	521.3
Link Distance (m)		616.3	616.3	616.3			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												46
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	10			3	0		0		18		97	0
Queuing Penalty (veh)	38			6	0		0		11		263	1

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	446.2	71.2	64.2	63.4	76.3	103.7
Average Queue (m)	367.4	17.6	30.1	38.4	40.4	38.0
95th Queue (m)	535.1	48.5	57.8	56.1	62.9	70.6
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	19					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0		105.0	
Storage Blk Time (%)	12				0	
Queuing Penalty (veh)	12				0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T	T
Maximum Queue (m)	9.9	30.2	37.3	60.5	38.6	3.8	18.6	3.4	5.3
Average Queue (m)	2.9	10.3	21.6	7.8	15.1	0.1	2.8	0.2	0.2
95th Queue (m)	9.1	21.0	39.6	38.5	31.3	2.1	11.7	1.7	2.9
Link Distance (m)	101.7	101.7		257.1				416.3	416.3
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0	65.0	70.0		
Storage Blk Time (%)			14	0					
Queuing Penalty (veh)			1	0					

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	27.5	11.4	49.9	50.1	15.4	7.5	37.8	31.9
Average Queue (m)	9.6	1.6	11.1	14.9	1.7	0.3	8.5	7.0
95th Queue (m)	23.2	7.8	32.1	38.0	9.0	3.4	24.9	21.9
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 389
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	28.9	17.2	22.6	27.0
Average Queue (m)	14.2	9.3	10.8	14.9
95th Queue (m)	22.7	13.7	19.2	23.6
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.9	445.3	435.1	432.1	195.0	102.9	119.5	123.7	122.9	150.0	415.8	323.8
Average Queue (m)	43.9	316.4	302.6	282.2	144.4	64.1	53.6	58.0	60.2	144.8	273.7	77.1
95th Queue (m)	146.4	473.0	457.3	446.3	271.9	107.1	99.0	103.1	105.5	167.6	546.2	331.3
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)		6	4	4							11	3
Queuing Penalty (veh)		0	0	0							0	0
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		55		50		4	1			90		
Queuing Penalty (veh)		20		129		22	2			61		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	16.5	78.2	17.9
Average Queue (m)	3.7	45.0	6.0
95th Queue (m)	11.7	73.9	14.9
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	515.9	520.5	347.1	62.5	59.7	147.8	150.2	145.6	59.2	36.8
Average Queue (m)	168.8	171.6	169.0	25.4	5.0	98.4	103.8	106.9	35.2	6.2
95th Queue (m)	331.1	331.4	259.6	68.3	25.5	140.9	148.0	149.9	58.8	25.2
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)	0	0								
Queuing Penalty (veh)	0	0								
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			30	0		20			1	
Queuing Penalty (veh)			34	0		3			0	

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	127.0	111.2	126.4	151.2	67.5	64.9	107.9	102.3	96.3	15.2	155.9	282.2
Average Queue (m)	77.4	66.1	72.4	88.9	64.1	20.5	67.6	66.4	55.6	1.6	135.5	156.7
95th Queue (m)	117.9	98.1	108.3	133.5	78.2	52.6	96.6	92.4	85.0	8.5	221.8	378.3
Link Distance (m)		616.3	616.3	616.3			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)				20	12				5		67	
Queuing Penalty (veh)				85	48				2		76	

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	253.0	27.0	36.8	95.3	103.0	57.4
Average Queue (m)	126.8	13.8	16.6	66.6	70.0	24.1
95th Queue (m)	341.2	26.1	32.5	90.8	96.9	42.6
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	0			0	0	
Queuing Penalty (veh)	0			0	0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	R	L
Maximum Queue (m)	16.2	14.8	35.4	48.1	32.0	10.6	15.6
Average Queue (m)	1.5	4.8	15.4	5.5	12.4	0.4	0.9
95th Queue (m)	8.2	11.7	29.4	25.7	28.5	4.3	6.9
Link Distance (m)	101.7	101.7		257.1			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			30.0		70.0	65.0	70.0
Storage Blk Time (%)			3				
Queuing Penalty (veh)			1				

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	52.1	14.2	28.3	28.4	20.7	20.7	44.5	38.6
Average Queue (m)	20.5	1.9	11.1	10.7	6.6	3.9	18.6	15.3
95th Queue (m)	40.2	8.1	23.5	25.5	18.8	14.2	37.2	32.7
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 484
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	19.9	29.3	50.7	18.8
Average Queue (m)	10.1	17.0	21.7	8.1
95th Queue (m)	15.4	25.8	39.0	14.6
Link Distance (m)	511.1	346.5	1595.2	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	109.2	271.5	259.2	210.0	86.4	72.3	269.1	286.4	287.1	110.5	91.0	55.8
Average Queue (m)	19.7	183.6	173.9	140.9	29.2	37.8	37.1	42.8	43.3	66.0	28.3	19.6
95th Queue (m)	82.6	302.1	292.7	246.1	109.3	64.0	156.5	165.3	163.4	100.2	63.8	41.4
Link Distance (m)		429.6	429.6	429.6			693.0	693.0	693.0		471.3	471.3
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		33		11			0			7	0	
Queuing Penalty (veh)		13		28			1			11	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	4.9	29.6	21.9
Average Queue (m)	0.7	12.6	4.7
95th Queue (m)	4.1	26.6	16.0
Link Distance (m)		456.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	T	R	L	T	T	T	L	R
Maximum Queue (m)	223.6	218.8	215.8	62.5	72.3	167.1	167.6	169.6	44.0	12.6
Average Queue (m)	171.4	164.5	167.2	20.2	23.8	121.7	126.4	131.2	17.8	3.1
95th Queue (m)	234.9	225.6	223.0	61.5	63.2	164.1	168.7	174.1	35.3	9.4
Link Distance (m)	693.0	693.0	693.0			616.3	616.3	616.3		331.6
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)				55.0	75.0				55.0	
Storage Blk Time (%)			27	0	0	17				
Queuing Penalty (veh)			26	0	0	7				

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	240.4	472.5	294.8	258.0	67.5	202.4	337.7	328.7	302.0	130.0	175.0	449.1
Average Queue (m)	187.6	163.5	128.6	80.0	30.2	55.0	201.9	196.6	181.9	45.1	174.9	399.2
95th Queue (m)	292.9	463.7	377.7	243.7	67.6	186.0	339.9	329.9	307.6	140.0	175.5	524.5
Link Distance (m)		616.3	616.3	616.3			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												61
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	28	1		12	0		34		64	0	96	0
Queuing Penalty (veh)	109	4		25	0		43		44	0	276	1

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	445.4	68.1	70.8	70.0	72.0	84.0
Average Queue (m)	389.0	18.1	35.1	39.8	42.1	43.9
95th Queue (m)	528.8	45.4	77.3	61.9	65.8	76.5
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	23					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0		105.0	
Storage Blk Time (%)	14	0	3			
Queuing Penalty (veh)	14	1	6			

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T
Maximum Queue (m)	11.8	38.0	37.4	76.0	44.3	3.0	13.3	25.4	3.5
Average Queue (m)	2.2	11.4	24.1	11.8	13.1	0.1	0.6	4.3	0.1
95th Queue (m)	8.6	25.1	41.3	50.9	30.7	1.4	6.1	16.1	1.9
Link Distance (m)	101.7	101.7		257.1		415.9			416.3
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0		65.0	70.0	
Storage Blk Time (%)			19	0					
Queuing Penalty (veh)			1	0					

Intersection: 8: Airport Road & 12333 Airport Road

Movement	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T
Maximum Queue (m)	27.5	14.8	40.5	45.3	17.3	6.9	29.8	37.0
Average Queue (m)	11.0	1.4	10.5	14.5	1.3	0.5	8.1	7.7
95th Queue (m)	24.9	7.8	30.9	37.6	8.0	4.0	22.5	24.0
Link Distance (m)	253.1	253.1	416.3	416.3			336.1	336.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)					145.0	75.0		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 611

Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	28.5	19.3	21.9	29.6
Average Queue (m)	12.8	9.7	10.7	14.9
95th Queue (m)	21.3	14.6	18.4	24.2
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	15.7	11.4	23.7
Average Queue (m)	8.8	2.2	2.9
95th Queue (m)	14.5	8.6	13.6
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			



Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.7	193.2	179.9	151.1	40.1	83.4	122.7	130.6	137.1	144.6	157.2	36.8
Average Queue (m)	36.1	126.9	115.8	96.0	20.0	40.1	70.4	77.5	80.6	99.7	47.0	16.2
95th Queue (m)	106.1	181.6	172.3	145.8	34.0	77.7	114.4	123.4	129.1	157.3	138.1	31.9
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		22		3		0	3			43	0	
Queuing Penalty (veh)		25		9		0	5			45	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	28.2	67.1	26.5
Average Queue (m)	12.5	40.8	9.6
95th Queue (m)	25.0	61.2	21.7
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.4	330.7	325.9	170.3	62.5	60.0	123.5	121.7	131.4	62.5	61.2	44.3
Average Queue (m)	58.5	134.0	130.6	134.6	31.0	8.6	89.2	92.7	97.7	25.7	35.0	6.3
95th Queue (m)	98.3	230.7	225.2	168.2	77.1	41.9	118.0	119.8	130.2	68.0	60.0	27.9
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	1	19		32	0	0	26		40	0	2	
Queuing Penalty (veh)	4	31		35	1	0	4		23	1	1	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	13.4	20.3
Average Queue (m)	3.2	4.7
95th Queue (m)	10.5	14.4
Link Distance (m)		833.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	198.0	145.2	141.8	150.0	67.5	212.3	347.2	356.1	130.0	175.0	402.0	392.0
Average Queue (m)	112.8	64.4	62.9	83.4	63.2	81.4	221.1	220.3	37.1	171.6	294.6	259.3
95th Queue (m)	198.6	130.6	104.0	132.4	79.0	251.6	469.2	465.2	127.2	188.6	532.0	526.8
Link Distance (m)		615.8	615.8	615.8			591.7	591.7			432.1	432.1
Upstream Blk Time (%)							1	0			27	8
Queuing Penalty (veh)							0	0			0	0
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	3	0		9	17		31	59		98		0
Queuing Penalty (veh)	11	0		37	53		30	32		152		0

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	25.9	39.2	93.0	101.0	44.6
Average Queue (m)	10.2	16.2	62.1	66.7	21.9
95th Queue (m)	20.9	31.3	87.9	92.0	39.2
Link Distance (m)			417.7	417.7	
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	0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T	T
Maximum Queue (m)	9.9	14.5	34.4	8.9	56.4	11.5	8.6	1.3	2.6
Average Queue (m)	1.1	5.0	15.8	3.7	14.3	0.5	0.5	0.0	0.1
95th Queue (m)	5.7	12.2	28.9	10.6	37.6	5.2	4.8	0.7	1.0
Link Distance (m)	101.7	101.7		254.7				413.3	413.3
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0	65.0	70.0		
Storage Blk Time (%)			3		0				
Queuing Penalty (veh)			0		0				

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	24.8	28.0	53.2	13.0	47.4	28.5	26.8	17.9	24.9	46.6	42.9
Average Queue (m)	6.2	12.5	24.0	2.4	22.4	8.8	8.6	3.5	3.2	20.2	18.3
95th Queue (m)	17.9	24.0	48.5	9.0	42.9	21.1	21.3	13.1	14.4	39.4	36.6
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	15.4	15.3
Average Queue (m)	3.8	0.9
95th Queue (m)	11.6	6.5
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.1	5.3
Average Queue (m)	3.0	0.4
95th Queue (m)	9.8	3.4
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.1	11.6	18.1	8.9	27.2	8.6	12.9
Average Queue (m)	1.8	5.2	9.0	2.3	12.5	3.9	3.8
95th Queue (m)	7.6	11.1	13.6	8.5	22.1	10.7	11.0
Link Distance (m)	178.9		635.4		833.4		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	11.4	9.3
Average Queue (m)	3.5	6.2
95th Queue (m)	10.7	13.2
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 499
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	27.0	18.3	22.4	24.3
Average Queue (m)	13.6	9.7	10.2	12.9
95th Queue (m)	22.3	14.7	17.2	20.3
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	21.4	9.0	25.6
Average Queue (m)	8.5	2.0	2.5
95th Queue (m)	16.1	8.0	13.4
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.5	171.7	160.3	135.9	35.4	79.9	131.3	137.2	141.4	133.8	193.6	36.8
Average Queue (m)	26.6	116.0	106.0	86.4	16.9	39.6	70.1	78.2	81.1	79.6	45.9	17.4
95th Queue (m)	68.0	158.2	148.5	121.7	28.7	71.1	117.8	125.9	129.2	139.2	162.4	33.5
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		15		0			3			21	0	
Queuing Penalty (veh)		18		1			5			22	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	31.9	61.0	22.8
Average Queue (m)	12.4	36.2	8.9
95th Queue (m)	26.6	57.0	20.6
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			



Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.4	172.6	348.2	171.7	62.5	81.6	136.2	141.6	136.2	62.5	59.4	32.0
Average Queue (m)	58.2	126.4	131.3	133.0	29.5	9.4	89.2	94.2	97.0	21.9	33.0	4.6
95th Queue (m)	98.7	167.5	237.8	166.3	74.4	43.1	126.4	129.8	130.5	61.4	57.9	17.9
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	1	20		31	0		24		41	0	1	
Queuing Penalty (veh)	7	33		34	1		3		23	1	0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	23.6	23.6
Average Queue (m)	4.2	6.2
95th Queue (m)	15.3	16.9
Link Distance (m)		833.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	200.4	201.5	188.8	135.7	67.5	124.4	223.8	222.5	130.0	175.0	381.0	376.4
Average Queue (m)	129.0	85.3	79.6	80.2	61.8	20.6	133.5	134.9	35.0	158.7	204.8	178.0
95th Queue (m)	247.9	250.6	203.5	126.7	80.1	64.1	221.2	225.3	124.4	202.5	437.8	416.7
Link Distance (m)		615.8	615.8	615.8			591.7	591.7			432.1	432.1
Upstream Blk Time (%)											6	1
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	13	0		9	13		11	48		88	0	1
Queuing Penalty (veh)	40	0		37	41		11	26		136	0	1

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	23.4	41.0	93.5	100.9	47.3
Average Queue (m)	10.1	18.3	62.6	66.5	20.1
95th Queue (m)	20.4	35.1	84.7	90.1	35.6
Link Distance (m)			417.7	417.7	
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	0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T
Maximum Queue (m)	9.7	18.0	31.2	11.1	34.4	2.2	16.8	1.2
Average Queue (m)	1.0	6.4	14.0	3.6	10.8	0.1	0.6	0.0
95th Queue (m)	5.6	14.7	26.7	10.5	27.9	1.2	5.7	0.7
Link Distance (m)	101.7	101.7		254.7				413.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)			30.0		70.0	65.0	70.0	
Storage Blk Time (%)			1					
Queuing Penalty (veh)			0					

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	30.5	33.9	53.3	12.4	72.1	31.1	28.1	17.6	15.9	53.6	42.3
Average Queue (m)	6.6	12.7	22.6	2.7	26.8	9.0	10.9	4.6	3.0	22.1	16.9
95th Queue (m)	19.1	25.4	43.2	8.9	54.1	22.0	25.8	13.2	11.9	45.2	33.5
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	11.6	5.7
Average Queue (m)	2.8	0.5
95th Queue (m)	9.9	3.9
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	11.3	15.8
Average Queue (m)	2.8	0.9
95th Queue (m)	9.8	6.2
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	11.5	14.4	15.8	9.0	24.3	8.7	10.8
Average Queue (m)	3.2	5.8	9.0	2.1	13.3	3.8	4.6
95th Queue (m)	10.4	11.9	14.1	8.2	21.2	10.7	11.9
Link Distance (m)	179.3		635.4		833.6		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	11.3	14.1
Average Queue (m)	2.7	6.0
95th Queue (m)	9.6	13.7
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 440
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	20.6	27.4	46.7	16.7
Average Queue (m)	10.2	15.6	20.6	7.8
95th Queue (m)	17.2	24.9	34.1	14.2
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	24.6	17.4	7.6
Average Queue (m)	10.8	7.8	0.6
95th Queue (m)	18.8	14.2	4.0
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	30.0	146.2	134.6	112.6	34.8	61.0	68.4	73.7	78.4	120.4	112.5	50.3
Average Queue (m)	14.2	99.3	91.0	70.7	16.0	32.9	21.9	30.2	32.9	76.2	37.7	19.8
95th Queue (m)	26.3	131.8	121.1	101.3	29.5	56.5	48.3	57.4	62.0	119.2	78.9	38.4
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		6		0						13	0	
Queuing Penalty (veh)		4		0						19	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	28.0	38.2	43.2
Average Queue (m)	10.2	16.7	17.1
95th Queue (m)	23.5	32.4	34.8
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.4	212.5	360.9	201.1	62.5	82.3	136.2	151.4	145.6	62.5	36.7	10.5
Average Queue (m)	30.5	162.2	160.1	153.2	24.1	22.3	102.3	111.3	115.5	8.6	15.9	2.2
95th Queue (m)	78.4	203.6	258.5	191.9	65.6	67.4	130.5	138.9	146.0	36.5	33.1	7.4
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	0	29		35	0	0	20		31	0		
Queuing Penalty (veh)	0	17		34	0	0	8		8	0		

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	38.0	68.1
Average Queue (m)	6.4	26.5
95th Queue (m)	22.3	53.5
Link Distance (m)		833.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		1
Queuing Penalty (veh)		1



Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	269.7	357.2	349.3	185.3	67.5	89.9	206.1	206.3	130.0	175.0	449.1	450.2
Average Queue (m)	205.6	125.3	81.5	47.7	23.7	23.8	120.6	120.5	30.0	174.9	428.1	420.1
95th Queue (m)	313.3	363.1	261.5	124.8	54.4	54.3	189.5	189.6	110.4	175.2	483.9	510.9
Link Distance (m)		615.8	615.8	615.8			591.7	591.7			432.1	432.1
Upstream Blk Time (%)											81	34
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	44	2		3	0		4	43		96	0	12
Queuing Penalty (veh)	141	5		8	0		4	30		275	0	12

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	41.0	64.7	88.6	94.6	81.4
Average Queue (m)	13.0	28.5	48.1	51.3	31.9
95th Queue (m)	28.6	52.4	76.3	83.5	59.1
Link Distance (m)			417.7	417.7	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0	100.0			105.0
Storage Blk Time (%)	0		0	0	
Queuing Penalty (veh)	0		0	0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	L	T	T
Maximum Queue (m)	13.8	30.0	37.0	53.0	32.8	23.4	5.0	1.4
Average Queue (m)	2.0	11.1	24.5	11.7	12.5	3.3	0.3	0.0
95th Queue (m)	8.4	23.1	41.2	50.3	27.9	14.4	2.5	0.7
Link Distance (m)	101.7	101.7		254.7			413.3	413.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)			30.0		70.0	70.0		
Storage Blk Time (%)			21	0				
Queuing Penalty (veh)			1	0				

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	60.8	42.8	31.4	12.6	35.0	50.3	55.6	9.9	4.0	42.2	39.8
Average Queue (m)	29.0	13.3	10.6	1.8	10.8	16.2	21.1	1.9	0.2	14.1	13.4
95th Queue (m)	51.9	29.0	24.7	8.7	26.5	37.8	45.0	8.5	2.5	31.2	32.8
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)	1										
Queuing Penalty (veh)	1										

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	13.8	9.6
Average Queue (m)	7.0	0.3
95th Queue (m)	13.9	4.3
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	13.5	5.2
Average Queue (m)	7.3	0.2
95th Queue (m)	13.6	2.9
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	11.3	18.6	14.4	8.9	24.6	15.6	17.1
Average Queue (m)	5.0	7.8	5.9	0.3	10.4	8.0	8.4
95th Queue (m)	12.3	13.0	12.8	2.9	18.1	13.1	15.0
Link Distance (m)	182.4		635.4		833.6		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	13.6	9.3
Average Queue (m)	6.6	3.8
95th Queue (m)	13.7	11.2
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 570
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	16.1	35.4	42.2	16.3
Average Queue (m)	10.3	15.3	19.7	7.5
95th Queue (m)	16.2	24.7	32.0	13.3
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (m)	19.2	13.8	2.2	7.7
Average Queue (m)	10.3	7.8	0.1	0.5
95th Queue (m)	17.2	13.7	1.2	3.6
Link Distance (m)		664.4	605.9	1592.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	55.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	32.4	146.6	126.8	107.4	34.4	77.6	83.6	95.8	96.9	143.7	153.5	47.8
Average Queue (m)	14.6	101.0	90.7	69.3	16.4	37.9	24.8	32.7	36.3	83.9	41.3	20.3
95th Queue (m)	27.0	137.4	123.7	101.3	27.8	70.4	56.0	67.6	71.2	140.7	98.3	40.4
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		8		0			0			24	0	
Queuing Penalty (veh)		5		0			0			35	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	33.6	35.8	38.3
Average Queue (m)	11.3	17.1	16.0
95th Queue (m)	25.9	32.5	31.2
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.3	212.4	197.5	189.0	62.5	82.3	139.6	142.4	143.2	62.5	37.6	12.8
Average Queue (m)	36.7	156.4	149.1	150.2	31.5	16.9	93.2	101.4	106.4	12.0	15.5	2.2
95th Queue (m)	89.8	204.8	190.8	189.4	76.2	58.2	136.3	142.9	148.9	47.4	32.4	8.0
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	0	28		33	0	0	17		29	0		
Queuing Penalty (veh)	0	16		33	0	0	7		8	0		

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	50.1	69.5
Average Queue (m)	9.0	24.8
95th Queue (m)	27.9	51.4
Link Distance (m)		833.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)	0	1
Queuing Penalty (veh)	0	0

Queuing and Blocking Report  
Baseline

2026 FT PM  
01/20/2023

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	R	L	T	T
Maximum Queue (m)	219.5	147.7	122.8	80.0	66.4	265.0	603.1	604.9	130.0	175.0	447.9	446.2
Average Queue (m)	133.3	37.6	37.3	38.5	23.6	222.1	314.7	295.0	24.2	174.6	391.7	382.4
95th Queue (m)	215.9	101.5	81.0	70.2	53.8	320.0	610.7	606.1	95.1	177.7	532.4	538.3
Link Distance (m)		615.8	615.8	615.8			591.7	591.7			432.1	432.1
Upstream Blk Time (%)							14	13			56	21
Queuing Penalty (veh)							0	0			0	0
Storage Bay Dist (m)	200.0				60.0	165.0			60.0	95.0		
Storage Blk Time (%)	7	0		2	1	79	8	33	0	96	1	15
Queuing Penalty (veh)	21	0		5	2	376	9	23	1	274	5	14

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	R
Maximum Queue (m)	89.2	58.2	69.6	73.2	84.6
Average Queue (m)	15.2	29.2	43.4	45.2	31.1
95th Queue (m)	49.9	49.0	63.3	65.4	56.4
Link Distance (m)			417.7	417.7	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0	100.0		105.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	T
Maximum Queue (m)	9.6	30.4	35.5	50.7	39.6	1.6	3.4	4.6	21.0	1.6	3.8
Average Queue (m)	1.4	10.9	24.5	9.3	15.1	0.1	0.1	0.4	3.7	0.1	0.1
95th Queue (m)	6.5	21.5	40.2	46.1	33.1	0.9	1.9	3.7	14.1	0.9	2.1
Link Distance (m)	101.7	101.7		254.7		417.7	417.7			413.3	413.3
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)			30.0		70.0			65.0	70.0		
Storage Blk Time (%)			17								
Queuing Penalty (veh)			1								



Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	61.3	24.2	32.6	9.4	35.1	50.3	53.1	16.1	2.2	31.1	36.5
Average Queue (m)	28.8	11.4	9.5	0.8	10.7	17.4	20.0	2.6	0.1	13.3	10.8
95th Queue (m)	48.3	21.5	23.5	4.7	27.1	39.8	43.9	10.9	1.2	27.2	26.4
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)	1										
Queuing Penalty (veh)	1										

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	13.6	8.2
Average Queue (m)	7.7	0.4
95th Queue (m)	14.2	3.7
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.0	2.6
Average Queue (m)	7.2	0.3
95th Queue (m)	14.1	2.8
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.2	17.7	15.8	8.9	26.0	15.5	16.7
Average Queue (m)	4.7	7.5	6.5	0.7	10.0	8.5	8.9
95th Queue (m)	11.9	12.8	13.1	4.6	20.1	14.4	14.9
Link Distance (m)	180.3		635.4		833.8		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	16.0	9.3
Average Queue (m)	7.6	3.6
95th Queue (m)	14.4	11.0
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 838
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# Queuing and Blocking Report

## Baseline

01/20/2023

### Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	28.9	16.0	22.2	27.9
Average Queue (m)	14.6	9.1	10.6	14.8
95th Queue (m)	24.5	14.2	18.2	23.1
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

### Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (m)	19.0	9.0	2.2	22.3
Average Queue (m)	8.6	2.1	0.1	2.8
95th Queue (m)	15.4	8.0	1.2	12.1
Link Distance (m)		664.4	605.9	1592.6
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	55.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

# Queuing and Blocking Report

## Baseline

01/20/2023

### Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.9	303.9	291.5	261.0	143.8	88.5	142.0	154.1	153.0	150.0	475.8	479.2
Average Queue (m)	70.1	195.1	184.6	158.7	52.2	46.5	77.5	85.9	89.0	149.5	408.6	250.0
95th Queue (m)	170.5	327.2	308.0	273.6	162.5	76.3	129.7	139.8	141.2	154.2	589.5	619.1
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)											48	18
Queuing Penalty (veh)											0	0
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		40		21			5			94		
Queuing Penalty (veh)		46		55			8			101		

### Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	30.0	82.4	36.0
Average Queue (m)	12.7	44.8	11.5
95th Queue (m)	26.5	69.5	26.2
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

# Queuing and Blocking Report

## Baseline

01/20/2023

### Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.4	185.5	353.0	356.0	62.5	53.0	153.7	153.9	152.5	62.5	61.1	63.1
Average Queue (m)	59.6	141.0	147.4	163.8	30.8	5.5	104.0	109.5	112.1	22.4	37.9	6.6
95th Queue (m)	103.5	186.9	250.4	297.7	76.4	28.1	145.8	151.0	151.5	63.8	60.8	29.1
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	1	19		30	0		27		40	0	2	
Queuing Penalty (veh)	6	32		33	0		4		22	1	1	

### Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	28.5	24.7
Average Queue (m)	5.8	6.7
95th Queue (m)	18.6	19.3
Link Distance (m)		834.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

# Queuing and Blocking Report

## Baseline

01/20/2023

### Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	200.6	197.8	161.6	159.5	67.5	38.9	105.6	103.8	92.9	17.3	165.9	176.8
Average Queue (m)	130.8	91.5	85.9	96.7	64.4	15.5	73.9	70.4	57.3	2.2	108.2	56.7
95th Queue (m)	237.4	193.4	154.4	145.0	78.2	32.7	99.9	97.4	85.5	9.5	186.9	175.5
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	13	0		20	12				6		40	0
Queuing Penalty (veh)	47	1		91	46				4		64	0

### Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	120.8	29.7	39.5	110.3	118.0	55.4
Average Queue (m)	43.2	11.0	18.6	72.1	77.4	23.0
95th Queue (m)	128.5	23.5	33.6	106.5	108.2	44.3
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	0			2	1	
Queuing Penalty (veh)	0			1	2	

### Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	R	L
Maximum Queue (m)	7.9	22.9	33.0	25.6	28.8	8.6	11.6
Average Queue (m)	1.1	6.7	13.2	5.1	9.5	0.3	1.1
95th Queue (m)	5.4	16.5	26.7	19.6	24.3	3.4	7.6
Link Distance (m)	101.7	101.7		254.7			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			30.0		70.0	65.0	70.0
Storage Blk Time (%)			3	0			
Queuing Penalty (veh)			0	0			

# Queuing and Blocking Report

## Baseline

01/20/2023

### Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	29.1	31.7	53.5	12.7	54.4	29.4	32.2	16.0	26.4	40.7	37.4
Average Queue (m)	6.5	12.2	21.2	2.2	21.4	8.4	8.7	3.2	4.5	18.6	15.8
95th Queue (m)	19.3	24.7	43.7	8.2	42.2	20.2	23.4	11.3	16.8	35.1	31.6
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)											
Queuing Penalty (veh)											

### Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.3	23.5
Average Queue (m)	2.8	1.3
95th Queue (m)	9.6	9.5
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

### Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.1	34.4
Average Queue (m)	3.1	2.1
95th Queue (m)	10.0	14.2
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

## Queuing and Blocking Report Baseline

01/20/2023

### Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.2	11.8	13.3	11.5	26.0	10.8	11.0
Average Queue (m)	2.5	5.6	7.8	2.2	11.9	4.4	4.4
95th Queue (m)	9.1	11.4	13.3	8.8	19.8	11.6	11.8
Link Distance (m)	176.6		635.4		834.0		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

### Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	11.2	11.7
Average Queue (m)	4.1	5.9
95th Queue (m)	11.4	13.5
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

### Network Summary

Network wide Queuing Penalty: 568



Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	22.3	29.2	53.6	18.1
Average Queue (m)	10.6	16.5	24.5	8.8
95th Queue (m)	17.6	26.2	43.2	13.8
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	17.4	16.8	8.3
Average Queue (m)	10.1	7.5	0.8
95th Queue (m)	16.1	14.3	4.8
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	113.6	197.7	185.0	161.6	33.3	75.0	130.2	320.6	139.9	111.4	108.7	55.9
Average Queue (m)	29.6	136.3	128.6	105.3	15.5	35.0	51.9	67.5	62.2	69.5	39.2	22.8
95th Queue (m)	95.4	187.3	179.1	149.8	27.1	64.4	102.9	186.6	112.5	114.3	86.2	42.6
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		23		3			1			9	0	
Queuing Penalty (veh)		15		6			2			15	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	31.9	38.6	34.9
Average Queue (m)	11.0	16.3	16.3
95th Queue (m)	24.7	31.0	31.0
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.2	219.5	368.2	222.7	62.5	82.3	162.6	167.8	172.1	61.8	45.9	12.5
Average Queue (m)	29.7	175.1	175.4	168.3	26.5	22.5	123.8	130.2	133.3	6.3	17.1	2.8
95th Queue (m)	74.8	225.0	277.7	225.4	71.7	66.5	165.5	170.2	174.5	31.9	35.8	9.1
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	0	25		30	0	0	25		31	0	0	
Queuing Penalty (veh)	0	15		29	1	0	10		8	0	0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	48.7	75.8
Average Queue (m)	11.2	31.1
95th Queue (m)	32.2	60.7
Link Distance (m)		833.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)	0	1
Queuing Penalty (veh)	0	0

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	225.4	125.7	128.7	117.0	67.5	53.9	138.1	143.8	140.3	30.3	175.0	451.3
Average Queue (m)	135.9	54.0	58.7	59.1	37.5	22.6	81.9	81.4	71.5	4.8	174.9	419.4
95th Queue (m)	206.0	99.9	102.3	96.6	77.0	44.7	115.6	118.1	109.7	17.2	175.8	519.7
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												75
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	3			15	0		0		12		94	1
Queuing Penalty (veh)	11			35	1		0		9		281	2

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	445.9	51.2	63.2	77.2	83.2	78.7
Average Queue (m)	412.2	14.4	31.0	46.6	48.4	36.5
95th Queue (m)	519.4	33.7	56.9	69.5	72.7	64.8
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	27					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0		105.0	
Storage Blk Time (%)	15	0			0	
Queuing Penalty (veh)	14	1			0	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	R
Maximum Queue (m)	17.0	21.5	37.4	86.4	48.8	1.7	5.3	3.2	20.4	3.2
Average Queue (m)	2.7	9.5	28.6	27.0	15.1	0.1	0.2	0.1	4.1	0.1
95th Queue (m)	10.1	18.3	44.5	91.8	35.9	0.9	2.3	1.8	15.0	1.8
Link Distance (m)	101.7	101.7		254.7		415.9	415.9			
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)			30.0		70.0			65.0	70.0	60.0
Storage Blk Time (%)			38	0						
Queuing Penalty (veh)			2	0						

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	61.7	46.0	31.2	6.6	26.4	51.4	57.4	15.0	14.0	40.5	30.8
Average Queue (m)	30.5	13.2	11.3	0.7	8.2	16.4	21.2	1.8	0.8	13.4	11.2
95th Queue (m)	57.6	29.5	26.1	4.0	20.3	38.9	46.2	8.6	5.8	30.9	24.7
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)	3	0									
Queuing Penalty (veh)	2	0									

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	16.3	10.6
Average Queue (m)	7.0	0.4
95th Queue (m)	14.1	4.0
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	11.7	5.7
Average Queue (m)	7.1	0.3
95th Queue (m)	13.5	2.7
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.2	14.5	12.6	9.0	17.9	15.3	17.7
Average Queue (m)	5.2	7.0	5.4	0.7	10.2	7.4	8.7
95th Queue (m)	12.2	12.1	12.0	4.6	17.4	13.5	14.6
Link Distance (m)	179.0		635.4		833.8		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	17.0	11.6
Average Queue (m)	6.7	4.0
95th Queue (m)	14.8	11.6
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 463
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	26.2	15.8	23.6	29.3
Average Queue (m)	14.3	9.7	11.5	16.0
95th Queue (m)	22.4	14.9	20.7	24.7
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

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: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.9	445.3	446.6	440.9	195.0	177.4	264.7	275.1	243.4	150.0	481.5	482.9
Average Queue (m)	63.3	347.9	338.9	307.7	142.2	132.6	127.0	115.0	92.5	149.9	447.5	336.9
95th Queue (m)	172.2	501.7	497.4	477.4	272.0	226.9	268.0	236.3	163.9	149.9	547.9	671.4
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)		12	9	10							66	30
Queuing Penalty (veh)		0	0	0							0	0
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		53		48		53	1			96		
Queuing Penalty (veh)		36		125		312	2			97		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	23.8	84.8	20.3
Average Queue (m)	4.8	50.8	7.0
95th Queue (m)	15.4	74.6	17.5
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		1	
Queuing Penalty (veh)		0	



Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.3	508.1	509.6	173.8	62.5	39.7	128.7	131.2	296.5	62.4	61.6	60.8
Average Queue (m)	59.2	103.2	107.6	80.9	26.6	7.5	42.3	42.6	49.9	8.0	36.7	8.2
95th Queue (m)	92.4	288.0	313.3	130.7	70.1	28.5	86.4	86.7	161.5	30.6	58.5	33.3
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	13	6		25	0		5		7	0	3	
Queuing Penalty (veh)	93	13		28	0		1		4	0	1	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	26.6	41.8
Average Queue (m)	6.5	14.6
95th Queue (m)	18.9	33.3
Link Distance (m)		833.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	189.7	149.1	138.8	174.0	67.5	38.0	131.0	131.2	123.1	64.8	132.8	100.0
Average Queue (m)	104.5	66.0	73.6	83.4	58.7	13.6	87.4	87.6	75.9	11.4	73.5	29.5
95th Queue (m)	177.4	109.7	114.4	139.2	82.7	29.9	132.5	132.6	122.1	60.2	127.2	65.4
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	0			9	4		0		17		11	0
Queuing Penalty (veh)	1			38	17		0		13		20	0

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	63.4	32.1	93.4	132.4	143.5	90.0
Average Queue (m)	33.0	12.2	28.0	86.8	93.0	30.4
95th Queue (m)	55.9	26.2	69.3	134.4	142.6	68.4
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	0			9	9	
Queuing Penalty (veh)	0			9	19	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	LTR	L	L	R
Maximum Queue (m)	7.2	20.2	29.4	45.5	27.0	11.2	7.8
Average Queue (m)	1.2	6.6	5.3	20.5	11.0	1.0	0.3
95th Queue (m)	6.1	16.0	21.8	39.9	24.8	7.2	4.3
Link Distance (m)	101.7	101.7		254.7			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			30.0		70.0	70.0	60.0
Storage Blk Time (%)			0	12			
Queuing Penalty (veh)			0	5			

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	31.8	45.9	55.1	11.2	95.2	25.0	30.4	19.4	16.4	55.4	52.0
Average Queue (m)	8.7	18.0	25.0	1.6	43.3	9.3	11.6	4.3	3.2	24.5	17.6
95th Queue (m)	23.7	34.9	47.1	6.9	78.7	21.3	25.7	14.6	11.8	47.0	41.2
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)		0									
Queuing Penalty (veh)		0									

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.3	10.4
Average Queue (m)	3.2	0.7
95th Queue (m)	10.2	5.6
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (m)	9.1	2.2	7.6
Average Queue (m)	4.0	0.1	0.3
95th Queue (m)	11.2	1.2	3.2
Link Distance (m)	300.4	131.9	197.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.2	13.9	22.4	9.0	31.0	20.2	21.4
Average Queue (m)	1.6	5.4	11.7	1.6	16.3	8.2	7.9
95th Queue (m)	7.2	11.3	18.5	7.1	25.7	14.6	15.9
Link Distance (m)	174.7		635.4		833.7		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	20.2	19.0
Average Queue (m)	9.6	12.0
95th Queue (m)	15.2	18.6
Link Distance (m)		622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 835
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	31.7	21.7	21.1	43.2
Average Queue (m)	15.2	10.4	11.1	16.9
95th Queue (m)	25.1	17.0	18.2	29.7
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	15.5	9.0	23.9
Average Queue (m)	7.6	2.3	1.6
95th Queue (m)	14.3	8.4	10.2
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.9	333.1	321.6	307.1	144.6	135.6	146.0	154.9	162.0	150.0	478.3	479.7
Average Queue (m)	60.1	264.1	252.1	227.1	88.6	68.8	90.5	102.1	105.5	149.9	408.6	259.0
95th Queue (m)	157.9	469.8	456.1	432.0	229.0	131.3	140.1	152.9	156.2	149.9	548.2	625.1
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)		6	3	3							50	21
Queuing Penalty (veh)		0	0	0							0	0
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		42		30		15	3			96		
Queuing Penalty (veh)		49		78		85	7			111		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	27.9	87.7	35.1
Average Queue (m)	12.2	50.4	11.5
95th Queue (m)	24.5	74.5	27.1
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		1	
Queuing Penalty (veh)		1	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.1	528.4	697.2	359.4	62.5	41.7	295.0	306.4	151.0	61.3	62.0	56.7
Average Queue (m)	38.7	97.9	119.0	90.6	25.1	8.8	51.5	52.1	47.4	7.7	39.4	6.3
95th Queue (m)	69.6	291.2	377.3	212.2	68.6	36.9	165.6	167.7	107.1	30.4	59.3	25.3
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)		0	0	0			0	0				
Queuing Penalty (veh)		0	1	0			0	0				
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	1	11		26	0		7		10	0	3	
Queuing Penalty (veh)	5	19		28	0		1		5	0	1	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	33.0	30.9
Average Queue (m)	7.8	8.5
95th Queue (m)	23.6	22.7
Link Distance (m)		833.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	203.8	261.2	257.0	175.1	67.5	38.1	135.0	137.0	137.9	95.7	174.9	305.4
Average Queue (m)	127.9	127.0	118.6	88.0	60.1	15.4	85.2	83.4	74.2	6.0	147.7	149.2
95th Queue (m)	274.1	340.9	299.5	145.2	83.3	31.9	120.1	119.7	111.9	38.6	203.3	382.0
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												3
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	20	2		9	6				16		71	0
Queuing Penalty (veh)	81	4		40	23				9		119	0

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	290.9	38.2	90.8	144.3	144.4	93.2
Average Queue (m)	120.7	11.6	27.9	88.3	92.6	34.8
95th Queue (m)	350.8	26.0	74.6	154.3	155.0	91.3
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	1			10	11	
Queuing Penalty (veh)	1			9	23	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	LTR	L	R	L	T
Maximum Queue (m)	9.9	15.5	37.3	58.6	31.8	13.1	5.9	9.3
Average Queue (m)	1.5	5.9	7.8	22.1	10.7	0.4	0.3	0.4
95th Queue (m)	6.8	13.8	28.5	50.3	26.3	7.2	4.0	3.9
Link Distance (m)	101.7	101.7		254.7				413.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)			30.0		70.0	65.0	70.0	
Storage Blk Time (%)			0	15				
Queuing Penalty (veh)			0	6				



Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	27.5	30.2	71.0	14.5	54.1	23.3	27.6	14.9	24.9	54.7	57.9
Average Queue (m)	6.5	13.7	24.7	2.3	23.4	9.8	11.0	2.9	4.5	21.2	19.2
95th Queue (m)	19.6	26.5	51.4	8.7	45.1	21.1	25.0	11.0	16.3	46.6	41.8
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	11.7	14.8
Average Queue (m)	3.7	0.8
95th Queue (m)	11.2	6.1
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.1	13.3
Average Queue (m)	3.7	1.0
95th Queue (m)	10.9	6.6
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.1	15.9	18.2	8.9	23.6	13.4	10.8
Average Queue (m)	2.0	5.9	8.4	1.5	11.5	4.4	4.7
95th Queue (m)	8.1	12.0	14.4	6.9	19.8	11.8	11.6
Link Distance (m)	176.6		635.4		833.6		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	13.6	13.9
Average Queue (m)	4.2	6.5
95th Queue (m)	11.6	13.8
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 706
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	25.0	18.9	23.7	40.9
Average Queue (m)	14.3	9.9	10.4	16.9
95th Queue (m)	22.4	15.3	18.7	29.1
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	17.5	9.0	21.3
Average Queue (m)	8.2	1.5	1.7
95th Queue (m)	15.6	6.7	9.8
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.9	447.7	448.8	448.8	195.0	98.0	321.4	330.3	146.1	150.0	475.9	476.4
Average Queue (m)	100.4	422.5	419.4	409.8	178.4	51.2	93.5	99.5	95.5	147.4	410.7	272.9
95th Queue (m)	200.8	490.1	495.8	513.1	260.3	98.5	208.5	216.1	145.1	171.7	589.0	639.6
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)		40	34	44			0	0			51	23
Queuing Penalty (veh)		0	0	0			0	0			0	0
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		58		59		4	6			94		
Queuing Penalty (veh)		68		153		21	12			108		

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	34.2	83.6	34.0
Average Queue (m)	12.7	50.5	10.7
95th Queue (m)	26.0	74.1	25.9
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.4	528.5	518.5	347.4	62.5	82.3	155.7	313.6	170.7	62.5	58.6	14.8
Average Queue (m)	53.7	167.5	158.0	153.4	30.5	8.6	108.9	117.8	118.1	20.6	35.1	4.0
95th Queue (m)	95.0	356.1	322.8	248.9	75.5	42.1	147.4	214.1	156.4	62.0	57.5	11.7
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)		0	0					0				
Queuing Penalty (veh)		0	0					0				
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	1	19		29	0		30		39	0	1	
Queuing Penalty (veh)	4	31		32	1		4		22	1	0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	31.6	23.6
Average Queue (m)	6.8	6.3
95th Queue (m)	20.8	17.4
Link Distance (m)		833.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	221.8	169.2	192.4	156.0	67.5	56.9	121.5	121.4	112.1	37.1	175.0	380.0
Average Queue (m)	121.0	78.7	82.4	93.0	65.9	17.3	81.3	79.6	69.9	3.9	144.0	184.4
95th Queue (m)	211.4	137.7	141.4	140.5	74.0	37.3	111.7	111.5	104.2	17.8	208.7	442.8
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												11
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	8	0		19	15				13		68	0
Queuing Penalty (veh)	32	0		89	60				8		113	0

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	366.3	34.3	60.8	116.5	122.0	62.0
Average Queue (m)	168.0	12.4	23.4	79.6	83.6	26.2
95th Queue (m)	418.7	27.2	45.4	122.2	124.2	49.7
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	3					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	0			4	5	
Queuing Penalty (veh)	0			4	11	

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	SB	SB	SB
Directions Served	L	TR	L	LTR	L	L	T	T
Maximum Queue (m)	12.0	20.0	37.3	74.0	33.0	7.8	3.0	1.4
Average Queue (m)	1.4	6.4	8.9	25.1	12.2	0.4	0.1	0.0
95th Queue (m)	7.0	15.6	30.3	55.6	28.2	3.6	1.2	0.8
Link Distance (m)	101.7	101.7		254.7			413.3	413.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)			30.0		70.0	70.0		
Storage Blk Time (%)			0	22				
Queuing Penalty (veh)			0	9				

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	25.4	29.5	58.1	12.5	59.4	23.3	32.0	23.1	18.1	54.3	55.4
Average Queue (m)	5.4	11.8	21.2	1.8	23.0	8.7	8.9	3.8	4.1	21.1	17.9
95th Queue (m)	17.2	24.4	45.3	8.0	45.2	20.6	22.8	13.8	13.5	43.0	38.9
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.3	8.0
Average Queue (m)	3.2	0.5
95th Queue (m)	10.3	4.3
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	9.1	7.9
Average Queue (m)	4.0	0.4
95th Queue (m)	11.1	3.7
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.1	11.7	15.7	9.0	18.8	11.0	8.6
Average Queue (m)	2.4	5.2	8.5	2.1	11.3	4.6	4.7
95th Queue (m)	8.9	11.0	13.4	8.2	18.9	11.8	11.4
Link Distance (m)	175.1		635.4		833.7		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	9.1	9.3
Average Queue (m)	3.9	5.4
95th Queue (m)	10.9	12.8
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 784
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Intersection: 1: Torbram Road & Old School Road

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Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	21.7	34.8	53.6	18.3
Average Queue (m)	10.7	17.2	23.0	8.9
95th Queue (m)	18.0	27.4	40.4	14.8
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

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Intersection: 2: Torbram Road & Torbram Connector

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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: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.8	230.3	219.3	208.1	85.2	68.2	179.2	505.8	188.2	143.9	188.0	51.6
Average Queue (m)	28.8	153.5	142.2	114.2	16.8	40.5	74.0	104.3	87.9	93.9	60.6	24.2
95th Queue (m)	99.2	227.5	216.7	185.9	49.5	65.9	154.1	300.1	171.0	154.7	161.7	44.9
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)	0	27		5			5			33	0	
Queuing Penalty (veh)	0	14		12			10			56	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	16.8	43.8	28.8
Average Queue (m)	2.5	14.0	8.9
95th Queue (m)	10.0	30.4	21.8
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.3	227.1	368.2	227.0	62.5	72.7	172.9	194.7	187.4	62.5	40.8	17.1
Average Queue (m)	31.7	154.3	156.7	153.2	22.7	16.7	117.1	126.0	127.9	9.5	18.2	3.1
95th Queue (m)	71.0	236.3	276.3	229.7	65.0	46.1	180.4	193.7	195.4	43.9	35.9	11.0
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	0	19		25	0		23		30	0		
Queuing Penalty (veh)	0	16		24	0		9		8	1		

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	62.2	124.8
Average Queue (m)	13.9	48.8
95th Queue (m)	41.6	96.1
Link Distance (m)		833.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)	0	9
Queuing Penalty (veh)	0	4

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	232.0	168.1	161.1	173.0	67.5	192.3	411.9	408.7	404.4	130.0	175.0	447.3
Average Queue (m)	137.0	78.4	82.7	90.0	42.2	100.2	278.2	271.7	259.6	77.8	165.0	328.9
95th Queue (m)	215.5	142.0	141.8	155.7	84.1	287.9	541.1	527.1	507.4	176.8	209.5	565.0
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)							4	2	2			45
Queuing Penalty (veh)							0	0	0			0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	4	0		25	0		43		72	0	83	1
Queuing Penalty (veh)	17	1		56	1		54		61	1	269	2

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	444.8	64.2	128.4	103.8	83.6	105.3
Average Queue (m)	314.5	14.3	71.3	51.7	52.1	46.4
95th Queue (m)	561.4	38.6	132.1	80.1	77.0	84.2
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	21					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	19		15	0		0
Queuing Penalty (veh)	20		35	0		0

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	L	T	T
Maximum Queue (m)	14.1	28.3	37.4	102.2	51.4	4.6	24.6	8.3	1.9
Average Queue (m)	2.6	10.9	29.8	26.8	16.2	0.2	3.4	0.3	0.2
95th Queue (m)	9.9	21.0	45.7	84.4	36.5	2.0	14.0	2.9	1.7
Link Distance (m)	101.7	101.7		254.7		415.9		413.3	413.3
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0		70.0		
Storage Blk Time (%)			41	0	0				
Queuing Penalty (veh)			2	0	0				

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	62.1	88.3	26.2	8.4	47.5	70.7	73.0	18.6	9.9	46.2	44.9
Average Queue (m)	39.6	20.8	8.2	1.1	15.2	22.3	27.8	2.7	0.5	17.7	15.1
95th Queue (m)	64.1	53.3	21.5	5.9	36.0	51.3	58.5	11.5	4.5	37.1	32.7
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)	4										
Queuing Penalty (veh)	4										

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB
Directions Served	LR
Maximum Queue (m)	13.8
Average Queue (m)	6.4
95th Queue (m)	13.5
Link Distance (m)	368.9
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	15.7	7.6
Average Queue (m)	7.3	0.3
95th Queue (m)	14.1	3.2
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	11.2	18.6	22.7	6.0	27.3	21.8	22.6
Average Queue (m)	4.8	7.2	8.6	0.4	12.4	11.2	11.1
95th Queue (m)	12.3	14.7	16.6	3.4	22.0	17.4	17.5
Link Distance (m)	177.8		635.4		833.9		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	24.8	25.6
Average Queue (m)	12.6	10.2
95th Queue (m)	20.4	18.5
Link Distance (m)		622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 678
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	24.0	44.2	57.5	20.9
Average Queue (m)	10.7	18.8	25.5	9.0
95th Queue (m)	18.1	31.7	45.1	16.2
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	21.1	18.2	10.6
Average Queue (m)	10.8	8.2	0.8
95th Queue (m)	17.5	15.3	5.0
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.9	193.1	177.1	148.0	41.1	86.6	151.4	163.3	171.8	145.3	181.3	59.9
Average Queue (m)	32.9	130.7	120.9	94.4	15.5	45.5	70.2	77.4	83.2	86.9	54.7	24.2
95th Queue (m)	94.4	177.9	165.4	138.0	28.8	77.1	150.7	162.4	171.1	136.7	138.0	48.8
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		20		1			5			21	0	
Queuing Penalty (veh)		14		3			8			37	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	30.0	44.2	46.5
Average Queue (m)	10.4	17.3	19.4
95th Queue (m)	22.6	35.1	37.4
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			



Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	82.3	230.6	376.9	379.1	62.5	82.3	173.2	181.4	180.5	48.8	36.9	14.7
Average Queue (m)	35.3	160.4	164.6	161.4	25.7	21.9	116.5	122.0	126.8	6.0	17.1	3.5
95th Queue (m)	78.9	243.1	312.6	280.1	69.4	62.1	175.8	184.2	188.2	26.0	33.4	10.0
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)			0	0								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)	0	21		27	0	0	21		29	0		
Queuing Penalty (veh)	0	13		27	0	0	9		8	0		

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	62.1	69.6
Average Queue (m)	9.6	32.5
95th Queue (m)	31.6	60.6
Link Distance (m)		834.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)	0	2
Queuing Penalty (veh)	0	1

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	229.2	196.4	162.8	158.9	67.5	154.0	294.9	285.9	263.9	130.0	175.0	448.0
Average Queue (m)	145.4	79.1	82.5	87.1	43.9	60.2	177.2	174.2	161.6	42.9	174.2	403.3
95th Queue (m)	227.9	150.1	146.4	150.6	84.4	198.5	330.1	321.9	308.4	137.2	184.2	516.5
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												61
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	6	0		21	0	1	24		56		92	1
Queuing Penalty (veh)	26	0		52	1	4	30		43		288	3

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	445.8	63.8	83.5	91.5	85.7	101.3
Average Queue (m)	394.7	16.3	45.1	50.8	51.2	46.6
95th Queue (m)	518.8	46.8	80.6	78.1	75.2	84.0
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	25					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0			105.0
Storage Blk Time (%)	22		1	0		0
Queuing Penalty (veh)	22		2	0		0

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T	T
Maximum Queue (m)	10.0	27.3	37.4	108.1	40.0	3.9	8.1	28.5	1.3	6.6
Average Queue (m)	2.0	9.6	28.9	35.8	13.0	0.1	0.5	4.1	0.0	0.2
95th Queue (m)	7.9	20.5	44.1	114.5	32.2	2.2	4.6	16.1	0.7	2.6
Link Distance (m)	101.7	101.7		254.7		415.9			413.3	413.3
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)			30.0		70.0		65.0	70.0		
Storage Blk Time (%)			45	1						
Queuing Penalty (veh)			2	1						

Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	60.6	59.5	29.3	10.2	30.2	53.1	61.8	16.2	8.2	42.0	32.9
Average Queue (m)	31.3	14.9	9.3	0.7	10.7	19.5	24.3	2.2	0.4	17.0	12.8
95th Queue (m)	58.1	39.0	22.0	4.6	23.4	43.7	51.3	10.0	4.4	35.4	27.2
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)	3										
Queuing Penalty (veh)	2										

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	13.7	2.7
Average Queue (m)	6.2	0.1
95th Queue (m)	13.6	1.5
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	13.3	5.1
Average Queue (m)	6.8	0.2
95th Queue (m)	13.3	2.0
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	11.7	16.9	17.9	9.1	19.0	15.7	16.7
Average Queue (m)	4.8	7.2	5.3	0.5	10.7	7.9	8.8
95th Queue (m)	12.4	12.8	13.4	3.9	17.1	14.2	14.5
Link Distance (m)	179.4		635.4		834.0		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	16.8	11.7
Average Queue (m)	7.6	4.2
95th Queue (m)	14.6	11.8
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 598
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Intersection: 1: Torbram Road & Old School Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (m)	23.1	41.8	67.4	15.2
Average Queue (m)	11.0	18.7	25.5	8.2
95th Queue (m)	18.3	31.1	46.3	13.6
Link Distance (m)	511.1	346.5	1592.6	796.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Torbram Road & Torbram Connector

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (m)	24.0	19.9	5.5
Average Queue (m)	11.5	7.8	0.3
95th Queue (m)	20.2	15.8	2.7
Link Distance (m)		664.4	1592.6
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Torbram Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (m)	149.7	192.0	176.2	166.6	38.2	71.4	183.6	186.6	189.7	133.1	112.8	49.5
Average Queue (m)	20.0	139.0	128.6	105.6	16.5	33.7	105.7	115.9	118.2	79.0	40.7	22.6
95th Queue (m)	73.1	187.0	175.0	151.3	31.4	62.7	168.8	176.6	179.9	131.9	101.4	41.8
Link Distance (m)		429.6	429.6	429.6			692.7	692.7	692.7		471.2	471.2
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	100.0				125.0	105.0				80.0		
Storage Blk Time (%)		22		2			8			17	0	
Queuing Penalty (veh)		15		4			14			30	0	

Intersection: 3: Torbram Road & Mayfield Road

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (m)	25.8	37.6	47.1
Average Queue (m)	10.4	18.2	21.5
95th Queue (m)	21.7	34.1	41.8
Link Distance (m)		455.0	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	80.0		80.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	TR
Maximum Queue (m)	43.3	127.8	319.0	99.0	62.4	40.8	118.5	122.5	124.8	61.7	53.2	10.8
Average Queue (m)	15.1	29.4	42.9	29.6	6.0	9.9	37.0	39.9	41.3	5.6	21.3	2.9
95th Queue (m)	32.2	86.6	213.7	76.7	29.5	27.3	87.7	95.1	96.3	29.4	40.2	8.3
Link Distance (m)		692.7	692.7	692.7			615.8	615.8	615.8			331.5
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (m)	75.0				55.0	75.0				55.0	55.0	
Storage Blk Time (%)		1		3	0		1		4	0	0	
Queuing Penalty (veh)		1		3	0		1		1	0	0	

Intersection: 4: Mayfield Connector & Mayfield Road

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (m)	62.3	77.5
Average Queue (m)	14.1	31.5
95th Queue (m)	39.2	60.6
Link Distance (m)		833.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	55.0	
Storage Blk Time (%)	0	3
Queuing Penalty (veh)	0	1

Intersection: 6: Airport Road & Mayfield Road

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	T
Maximum Queue (m)	233.6	190.9	156.3	95.0	66.7	237.7	390.2	380.9	361.5	130.0	175.0	448.0
Average Queue (m)	148.5	56.1	52.1	48.3	21.7	73.4	222.6	216.7	207.3	63.2	174.7	415.3
95th Queue (m)	254.2	159.8	115.4	85.2	57.5	228.4	385.1	369.3	360.4	162.7	177.1	518.7
Link Distance (m)		615.8	615.8	615.8			591.7	591.7	591.7			432.1
Upstream Blk Time (%)												74
Queuing Penalty (veh)												0
Storage Bay Dist (m)	200.0				60.0	165.0				60.0	95.0	
Storage Blk Time (%)	10	0		3	0	0	45		65	1	92	0
Queuing Penalty (veh)	39	0		7	0	0	57		50	2	288	2

Intersection: 6: Airport Road & Mayfield Road

Movement	NB	NB	SB	SB	SB	SB
Directions Served	T	R	L	T	T	R
Maximum Queue (m)	445.3	95.6	70.9	78.0	73.6	77.2
Average Queue (m)	403.1	18.0	33.0	44.2	46.7	41.0
95th Queue (m)	539.3	47.6	61.4	66.4	66.8	69.2
Link Distance (m)	432.1			415.9	415.9	
Upstream Blk Time (%)	28					
Queuing Penalty (veh)	0					
Storage Bay Dist (m)		60.0	100.0		105.0	
Storage Blk Time (%)	15					
Queuing Penalty (veh)	16					

Intersection: 7: Airport Road & Perdue Court/Davis Lane

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T
Maximum Queue (m)	12.3	24.1	37.3	90.9	44.4	11.9	3.7	24.8	4.1
Average Queue (m)	1.8	9.8	23.6	15.9	17.3	0.4	0.1	4.0	0.2
95th Queue (m)	7.6	18.8	40.4	68.0	36.3	5.0	2.1	16.3	1.7
Link Distance (m)	101.7	101.7		254.7		415.9			413.3
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			30.0		70.0		65.0	70.0	
Storage Blk Time (%)			25	0					
Queuing Penalty (veh)			1	0					



Intersection: 8: Airport Road & Airport Site Access/12333 Airport Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	R	L	T	TR
Maximum Queue (m)	56.6	59.6	34.0	13.0	31.8	49.8	57.1	14.9	4.3	42.4	34.0
Average Queue (m)	30.5	14.1	8.8	1.6	10.4	16.3	21.0	2.1	0.1	13.7	12.8
95th Queue (m)	51.7	38.0	23.9	7.6	24.1	37.0	46.2	9.5	1.7	30.4	28.0
Link Distance (m)		635.4	251.2	251.2	413.3	413.3	413.3			336.4	336.4
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	55.0							145.0	75.0		
Storage Blk Time (%)	2										
Queuing Penalty (veh)	2										

Intersection: 12: Torbram Road & Site Access "1"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	11.2	7.6
Average Queue (m)	7.5	0.3
95th Queue (m)	13.2	3.5
Link Distance (m)	368.9	131.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Torbram Road & Site Access "2"

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (m)	20.2	7.8
Average Queue (m)	7.7	0.3
95th Queue (m)	15.7	2.6
Link Distance (m)	300.4	197.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Mayfield Connector & Airport Road/Airport Connector

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	TR	L	TR	L	TR	L	TR
Maximum Queue (m)	9.2	15.8	14.4	8.8	22.1	18.2	16.9
Average Queue (m)	5.1	7.4	5.6	0.6	9.7	8.0	8.3
95th Queue (m)	12.4	13.0	12.6	4.2	17.5	14.7	14.1
Link Distance (m)	181.0		635.4		833.8		622.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)		55.0		55.0		55.0	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 15: Mayfield Connector & Torbram Connector

Movement	EB	NB
Directions Served	R	L
Maximum Queue (m)	18.0	9.3
Average Queue (m)	6.3	3.5
95th Queue (m)	14.0	10.8
Link Distance (m)	664.4	622.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 534
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# Appendix H

## Signal Warrant and Auxiliary Turn-Lane Warrant Analysis Excerpts

# Airport Road at Davis Lane/Perdue Crescent

Average Hourly Volume Calculator

$$AHV = (AM\ Peak + PM\ Peak)/4$$

	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach		
	LT	TH	RT	LT	TH	RT	LT	TH	RT
AM Peak	46	447	83	5	1	33	2	592	3
PM Peak	78	614	90	8	1	76	17	428	6
AHV	31	265	43	3	1	27	5	255	2

# Results Sheet

[Input Sheet](#)[Analysis Sheet](#)[Proposed Collision](#)

Intersection: Airport Road at Davis Lane/Perdue Crescent

Count Date: 2022 Existing Conditions

## Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	70	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Crossing Road	100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Combination	A Justificaton 1	70	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		14	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

[Input Sheet](#)[Analysis Sheet](#)[Proposed Collision](#)

# Analysis Sheet

Input Sheet

Results Sheet

Proposed Collision

GO TO Justification:

Intersection: Airport Road at Davis Lane/Perdue Crescent

Count Date: 2022 Existing Conditions

## Justification 1: Minimum Vehicle Volumes

### Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 Lanes		2 or More Lanes		Hour Ending											
Flow Condition	FREE FLOW <div><input type="checkbox"/></div>	RESTR. FLOW <div><input type="checkbox"/></div>	FREE FLOW <div><input checked="" type="checkbox"/></div>	RESTR. FLOW <div><input type="checkbox"/></div>	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00				
1A	480	720	600	900	685	685	685	685	685	685	685	685				
COMPLIANCE %					100	100	100	100	100	100	100	100	800	100		
1B	120	170	120	170	84	84	84	84	84	84	84	84				
	COMPLIANCE %				70	70	70	70	70	70	70	70	560	70		
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours Lesser of 1A or 1B at least 80% fulfilled each of 8 hours								Yes Yes <input type="checkbox"/>		No No <input checked="" type="checkbox"/>	

## Justification 2: Delay to Cross Traffic

### Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent		
	1 lanes		2 or More lanes		Hour Ending											
Flow Condition	FREE FLOW	RESTR. FLOW	FREE FLOW	RESTR. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00				
2A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	601	601	601	601	601	601	601	601				
	480	720	600	900	100	100	100	100	100	100	100	100	800	100		
	COMPLIANCE %				100	100	100	100	100	100	100	100				
2B	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	52	52	52	52	52	52	52	52				
	50	75	50	75	100	100	100	100	100	100	100	100	800	100		
	COMPLIANCE %				100	100	100	100	100	100	100	100				
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fulfilled each of 8 hours Lesser of 2A or 2B at least 80% fulfilled each of 8 hours								Yes Yes	<input checked="" type="checkbox"/>	No No	<input type="checkbox"/>

## Justification 3: Combination

### Combination Justification 1 and 2

Justification Satisfied 80% or More				Two Justifications Satisfied 80% or More	
Justification 1	Minimum Vehicular Volume	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Justification 2	Delay Cross Traffic	YES <input type="checkbox"/>	NO <input type="checkbox"/>	NOT JUSTIFIED	

## Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main)	Heaviest Minor Approach	Required Value	Average % Compliance	Overall % Compliance
		X	Y (actual)	Y (warrant threshold)		
Justification 4	7:00	601	53	387	14 %	14 %
	8:00	601	53	387	14 %	
	9:00	601	53	387	14 %	
	10:00	601	53	387	14 %	

# Analysis Sheet

Input Sheet

Results Sheet

Proposed Collision

GO TO Justification:

Intersection: Airport Road at Davis Lane/Perdue Crescent

Count Date: 2022 Existing Conditions

## Justification 5: Collision Experience

Justification	Preceding Months	% Fulfillment	Overall % Compliance
Justification 5	1-12	0 %	0 %
	13-24	0 %	
	25-36	0 %	

## Justification 6: Pedestrian Volume

### Pedestrian Volume Analysis

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

### Pedestrian Delay Analysis

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

## Input Data Sheet

[Analysis Sheet](#)
[Results Sheet](#)
[Proposed Collision](#)

What are the intersecting roadways?

Airport Road at Davis Lane/Perdue Crescent

GO TO Justification:

What is the direction of the Main Road street?

North-South

When was the data collected?

2022 Existing Conditions

### Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

2 or more

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Rural

Population &lt; 10,000

AND

Speed &gt;= 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	31	265	43	3	1	27	5	255	2	48	0	5	0
8:00	31	265	43	3	1	27	5	255	2	48	0	5	0
9:00	31	265	43	3	1	27	5	255	2	48	0	5	0
10:00	31	265	43	3	1	27	5	255	2	48	0	5	0
16:00	31	265	43	3	1	27	5	255	2	48	0	5	0
17:00	31	265	43	3	1	27	5	255	2	48	0	5	0
18:00	31	265	43	3	1	27	5	255	2	48	0	5	0
19:00	31	265	43	3	1	27	5	255	2	48	0	5	0
Total	248	2,120	344	24	8	216	40	2,040	16	384	0	40	0

### Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

\* Include only collisions that are susceptible to correction through the installation of traffic signal control

### Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume									
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0



Minor Westbound Approach			
LT	TH	RT	Ped
78		17	
113		4	1
48	0	5	0

Right Turn Warrants

Storage Calculator

S=(NV/30)

S=storage length (n N=volumes (v/h) V=vehicle length (m)

PTAC Vehicle Length (m)

7.5

Volumes used are the greater of A.M. and P.M. peak volumes

2026 Future Total / Approach	NBR			SBR		
Intersection	(N) Volumes	Volume>60?	(S) Storage Length	(N) Volumes	Volume>60?	(S) Storage Length
Torbram at Street C	52	No	N/A			
Torbram at Site Access 1	15	No	N/A			
Torbram at Site Access 2	15	No	N/A			

2026 Future Total / Approach	NBR			SBR		
Intersection	(N) Volumes	Volume>60?	(S) Storage Length	(N) Volumes	Volume>60?	(S) Storage Length
Torbram at Street C	52	No	N/A			
Torbram at Site Access 1	15	No	N/A			
Torbram at Site Access 2	15	No	N/A			

Left Turn Warrants

Storage Calculator

S=(NV/30)

S=storage length (n N=volumes (v/h) V=vehicle length (m)

PTAC Vehicle Length (m)

7.5

Volumes used are the greater of A.M. and P.M. peak volumes

AM

2026 Future Total / Approach	Data				
Intersection	VA	VAL	VAL %	VO	Storage Lane Warranted
Torbram at Street C	329	28	9%	109	NONE
Torbram at Site Access 1	367	12	3%	252	NONE
Torbram at Site Access 2	367	12	3%	218	NONE

2036 Future Total / Approach	Data				
Intersection	VA	VAL	VAL %	VO	Storage Lane Warranted
Torbram at Street C	386	28	7%	132	NONE
Torbram at Site Access 1	424	12	3%	275	NONE
Torbram at Site Access 2	424	12	3%	241	NONE

PM

2026 Future Total / Approach	Data				
Intersection	VA	VAL	VAL %	VO	Storage Lane Warranted
Torbram at Street C	98	10	10%	213	NONE
Torbram at Site Access 1	224	4	2%	248	NONE
Torbram at Site Access 2	198	4	2%	249	NONE

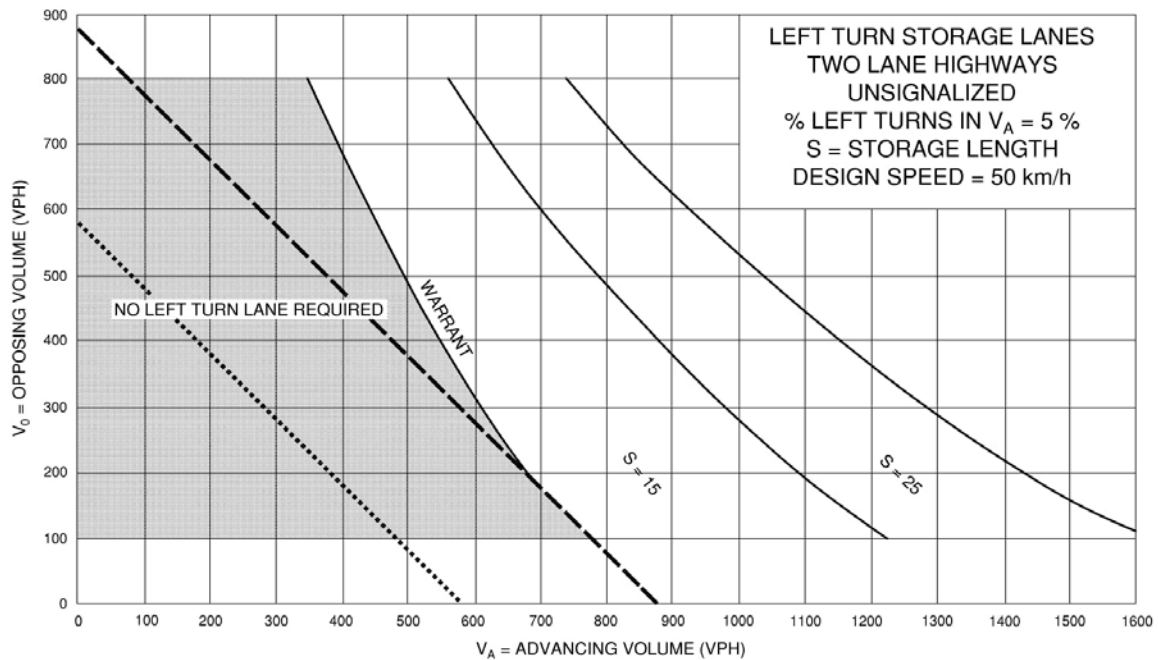
2036 Future Total / Approach	Data				
Intersection	VA	VAL	VAL %	VO	Storage Lane Warranted
Torbram at Street C	116	10	9%	253	NONE
Torbram at Site Access 1	241	4	2%	288	NONE
Torbram at Site Access 2	215	4	2%	289	NONE

# Left-Turn Warrant - Southbound Left Turn - Torbram Road at Street C 2026 Future Total and 2036 Future Total

TAC GDG for Canadian Roads – June 2017

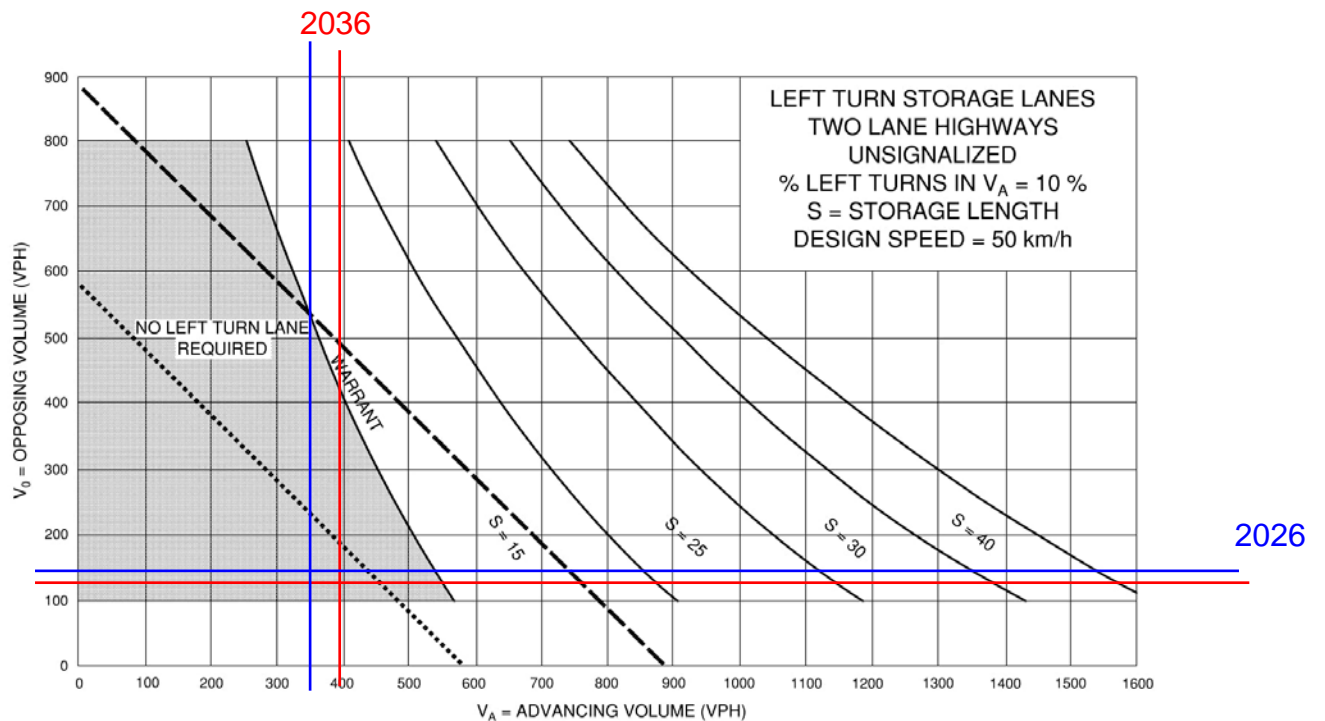
MTO Design Supplement, April 2020

**Exhibit 9A-3**



--- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



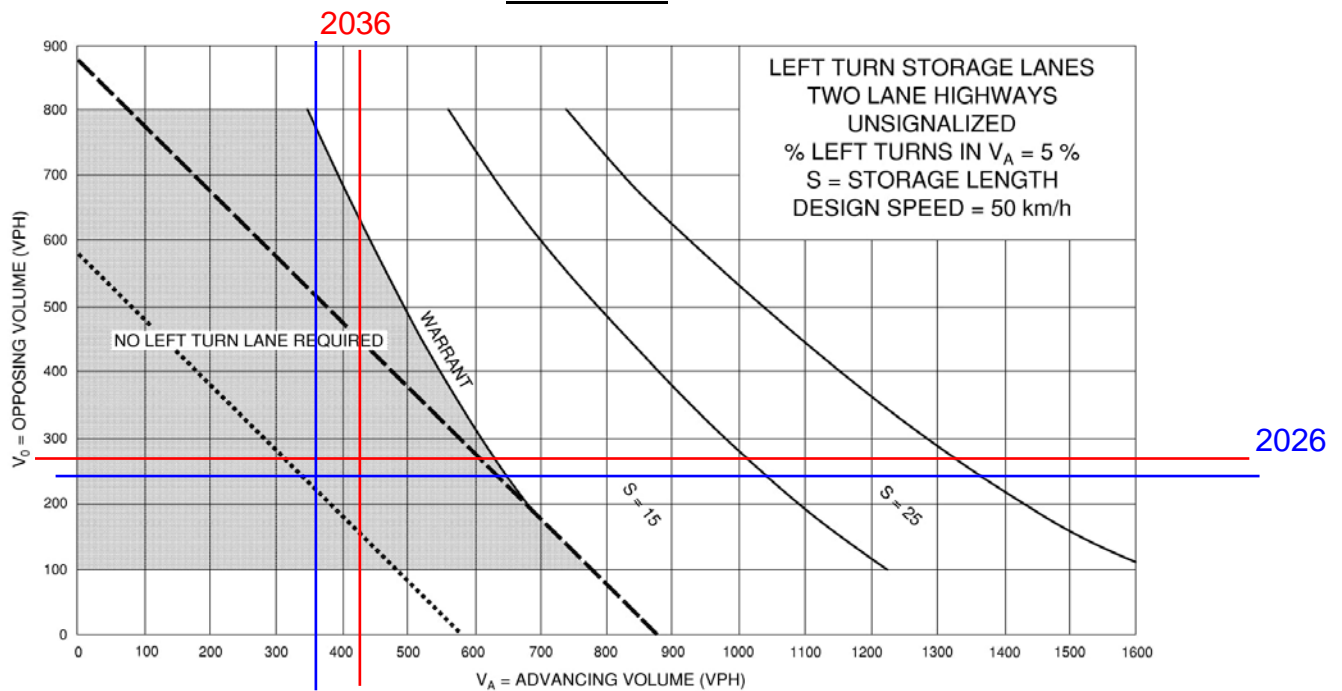


# Left-Turn Warrant - Southbound Left Turn - Torbram Road at Site Access 2 2026 Future Total and 2036 Future Total

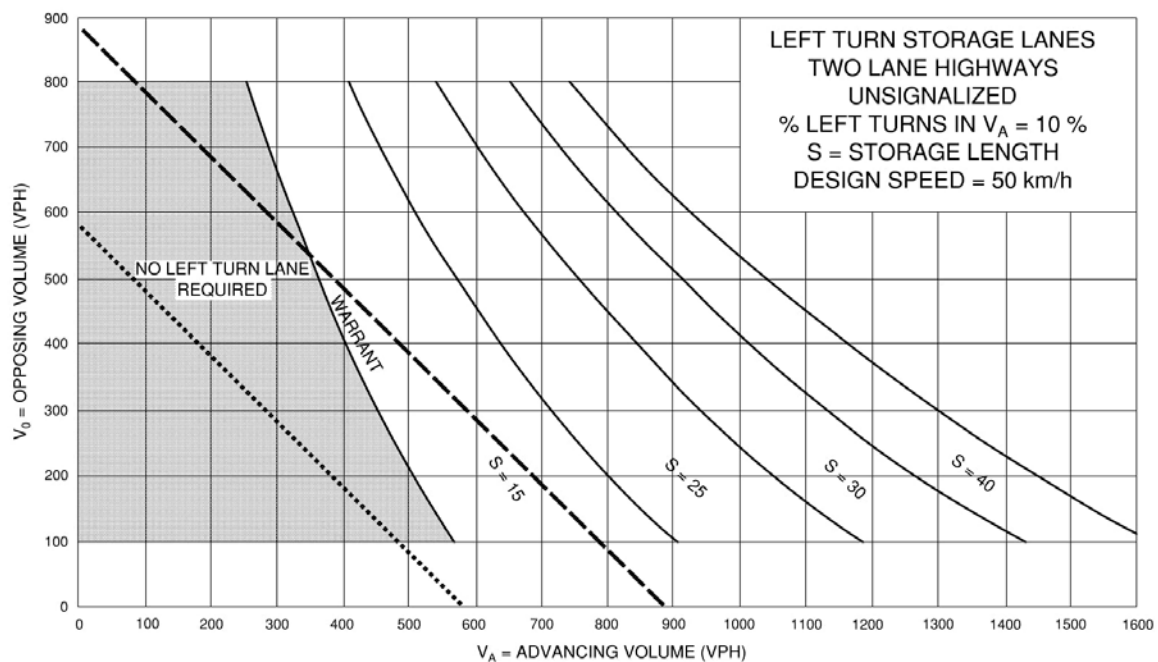
TAC GDG for Canadian Roads – June 2017

MTO Design Supplement, April 2020

**Exhibit 9A-3**



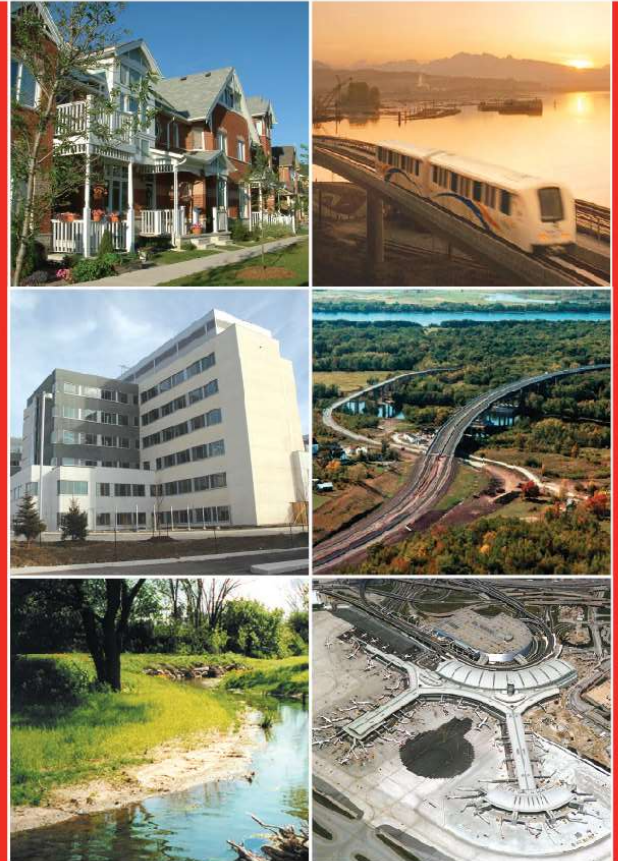
- TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
- ..... TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



# Appendix I

## Background Development Information

MMM Group Limited



Updated Traffic Impact Study  
Proposed Block Plan 48-1  
Countryside Villages

City of Brampton

Prepared for:

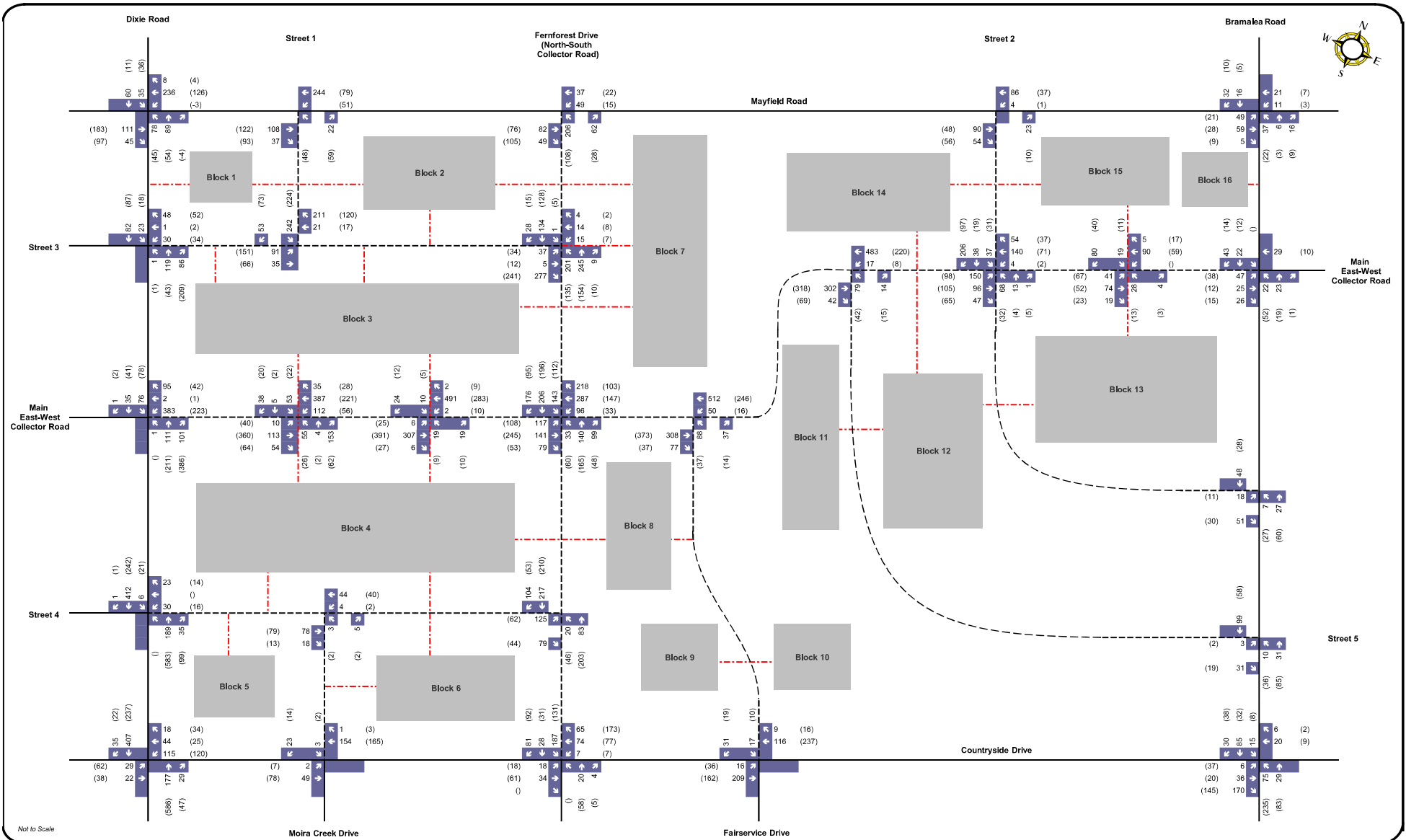
Brampton Area 48 Landowners Group Inc.

COMMUNITIES  
TRANSPORTATION  
BUILDINGS  
INFRASTRUCTURE

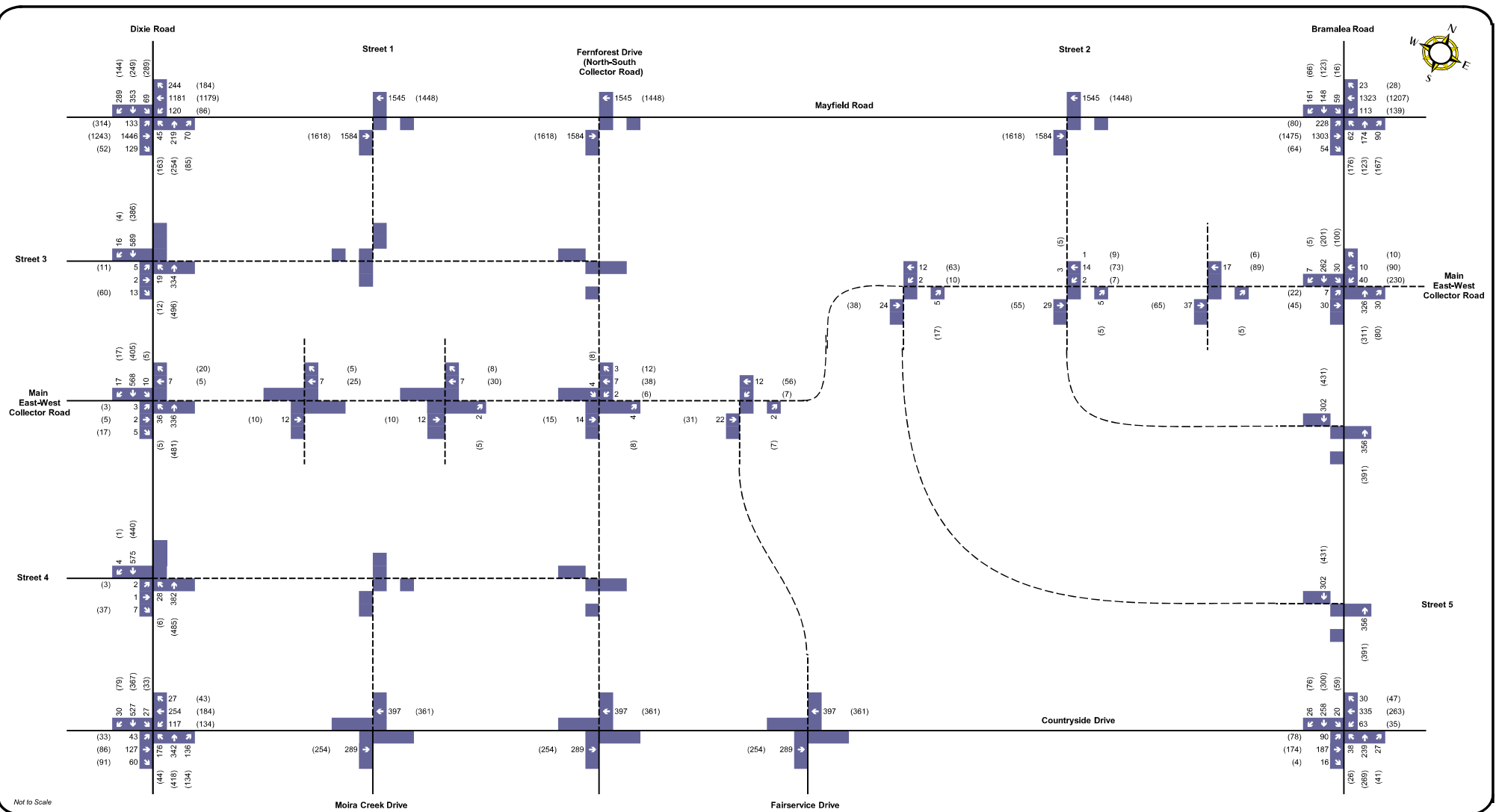


January 2012 | 16-10012-001-T02





**FIGURE 3.8**  
Horizon 2020  
Site Traffic Assignment



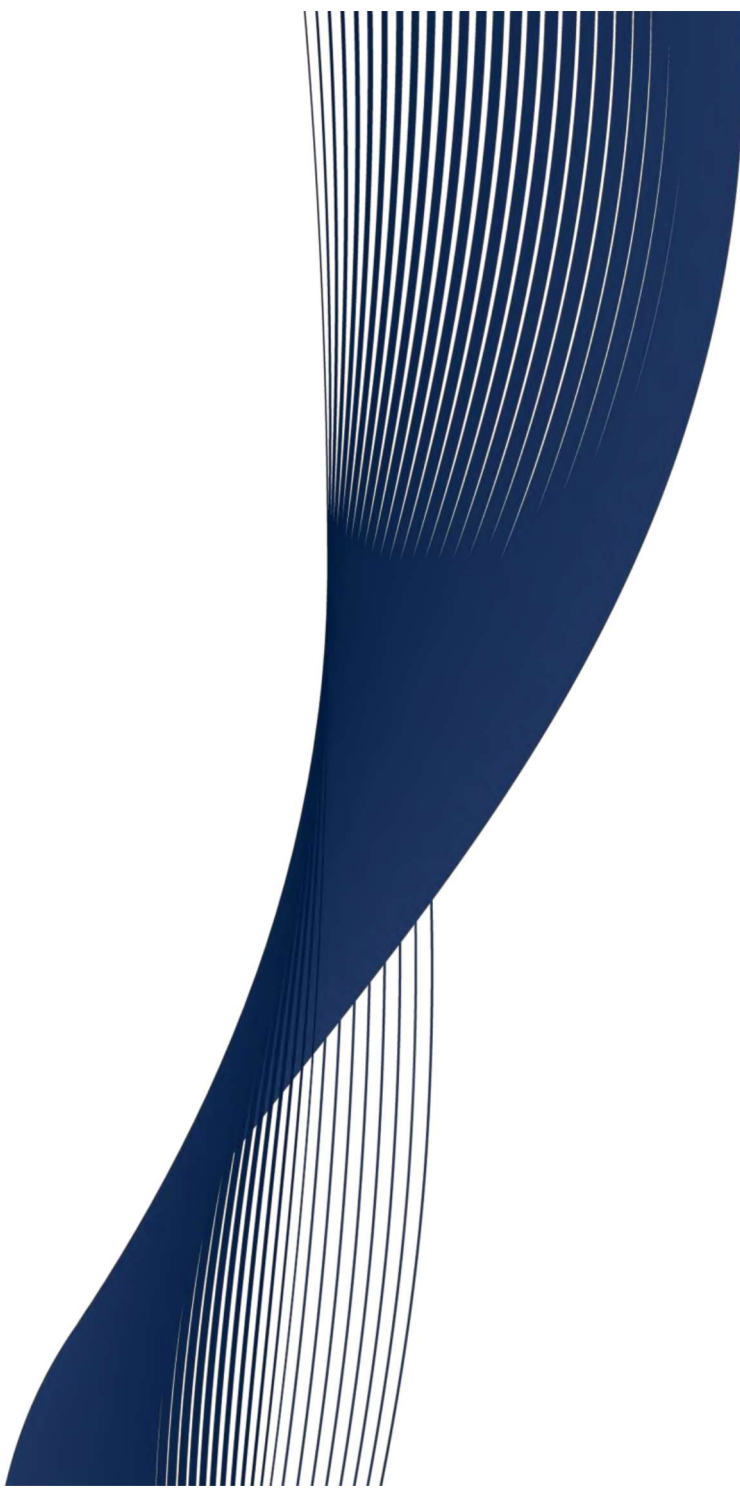


# BRAMPTON AREA LANDOWNERS GROUP INC.

## REVISED TRAFFIC IMPACT STUDY

Block 48-2 Proposed Mixed-Use Development,  
City of Brampton

Project No.: T11-646



### COLE ENGINEERING GROUP LTD.

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**F.** 905.940.2064 | [www.ColeEngineering.ca](http://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

MAY 2017

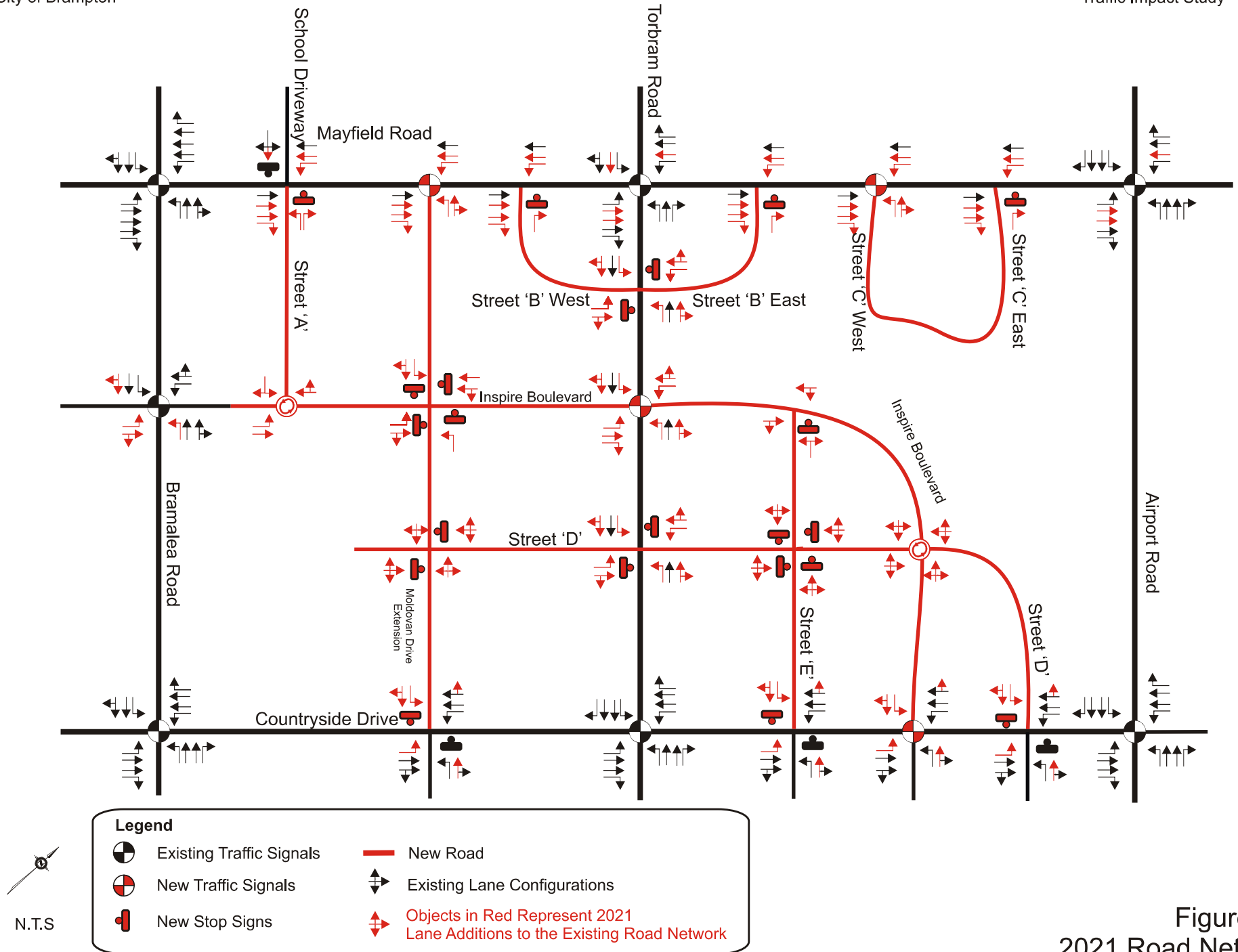


Figure 5-3  
2021 Road Network



Figure 5-4  
2031 Total Traffic Volumes

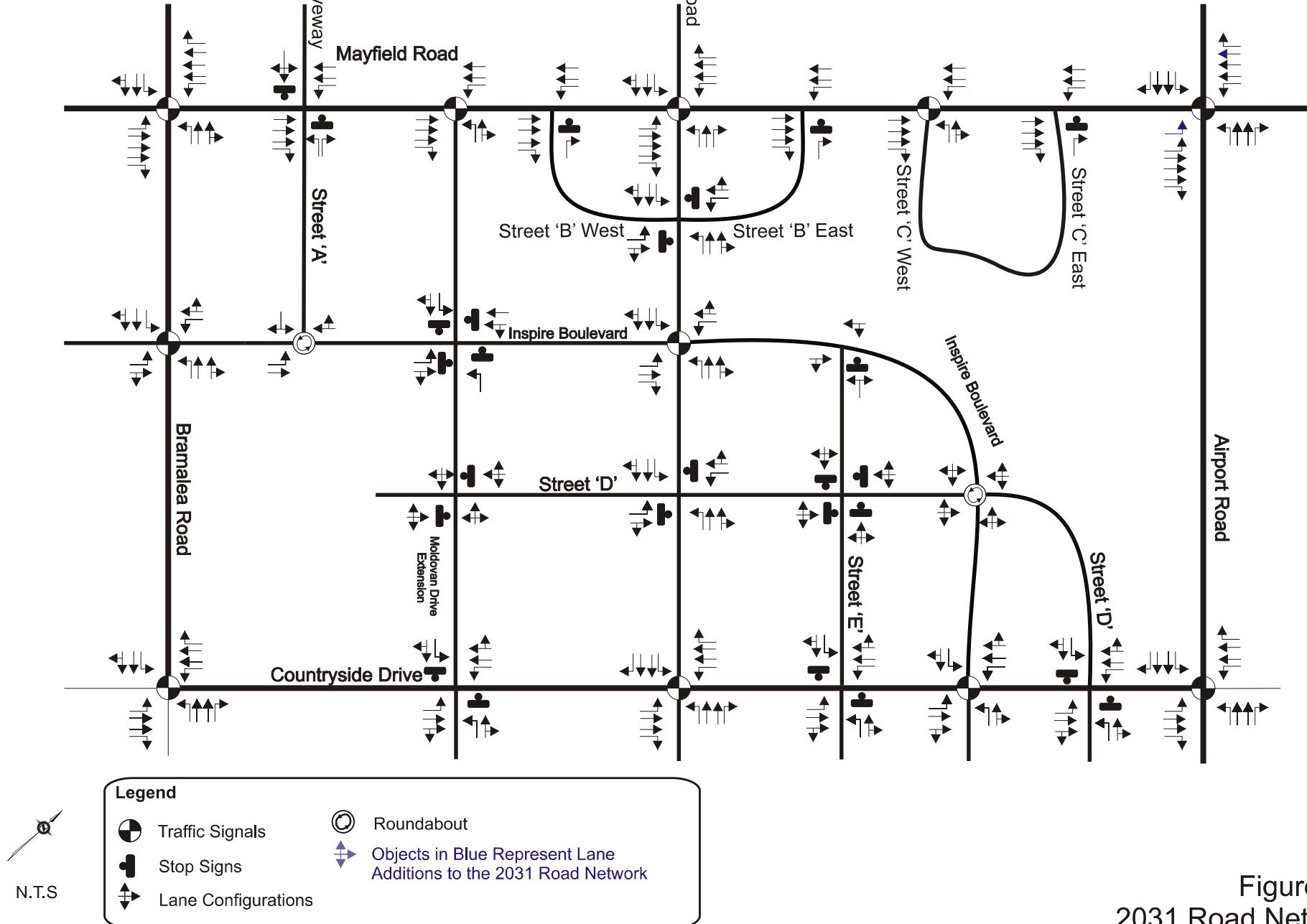
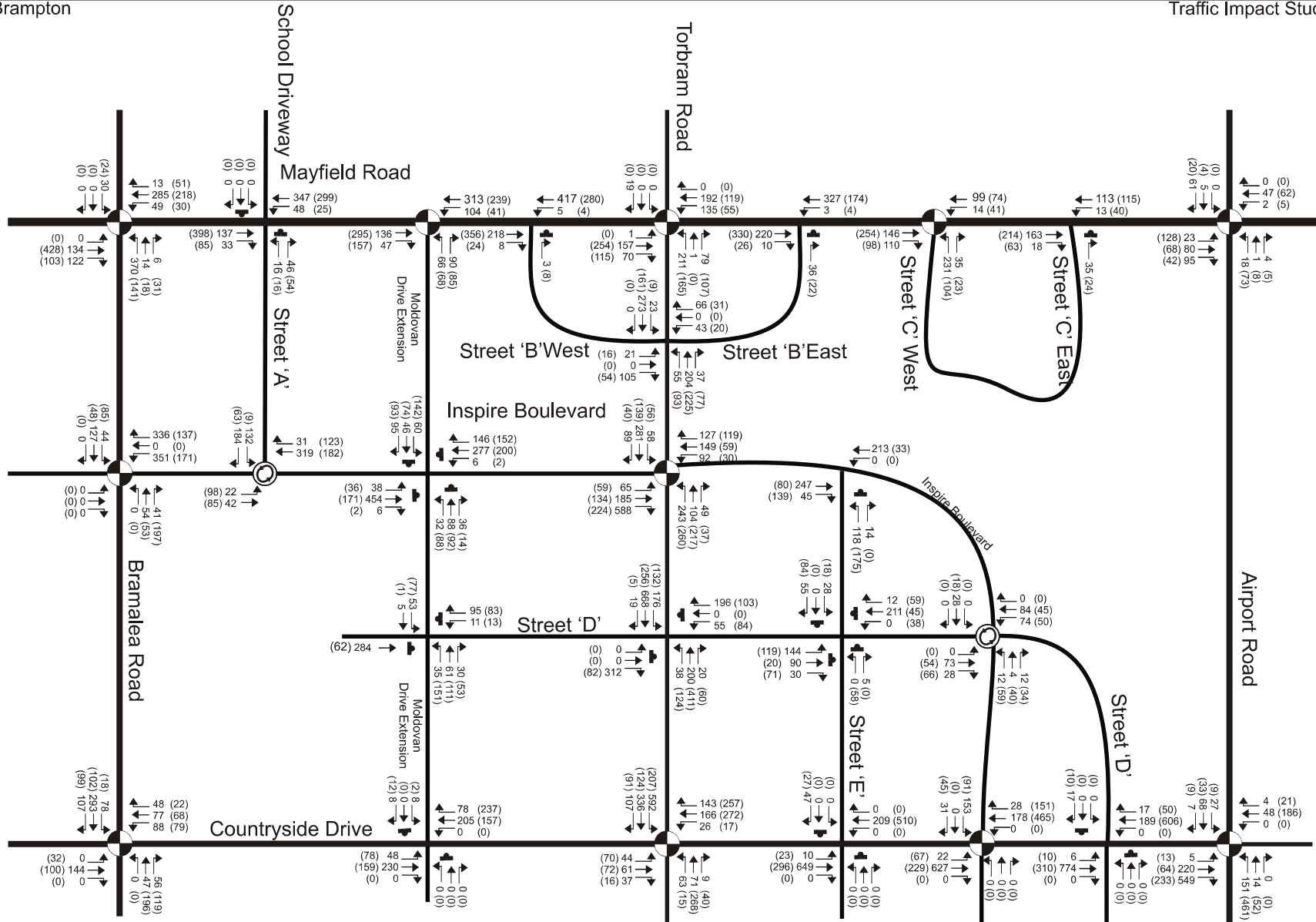


Figure 5-5  
2031 Road Network



N.T.S

**Legend**

- ▲ Right Turn Movement
- Through Movement
- ◀ Left Turn Movement
- 99 (99) Weekday AM (Weekday PM)  
Peak Hour Traffic Volumes

Figure 3-10  
Total Site Traffic Volumes



# Appendix J

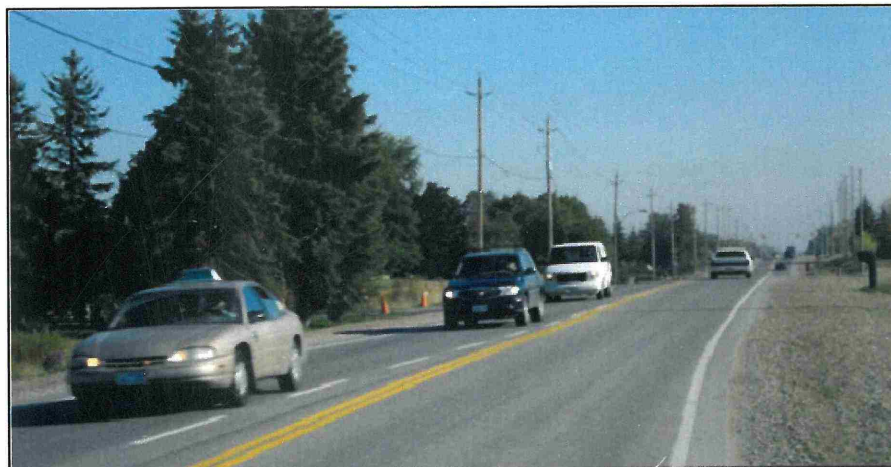
## Background Roadway Improvements

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*

**MAYFIELD ROAD IMPROVEMENTS (AIRPORT ROAD TO COLERAINE DRIVE)  
CLASS ENVIRONMENTAL ASSESSMENT - ENVIRONMENTAL STUDY REPORT**

Recommended Design Concept

April 18, 2013

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:**

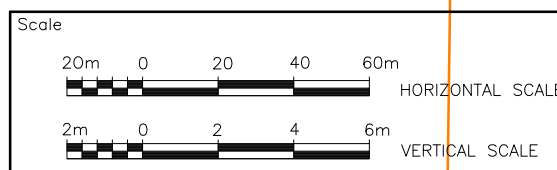
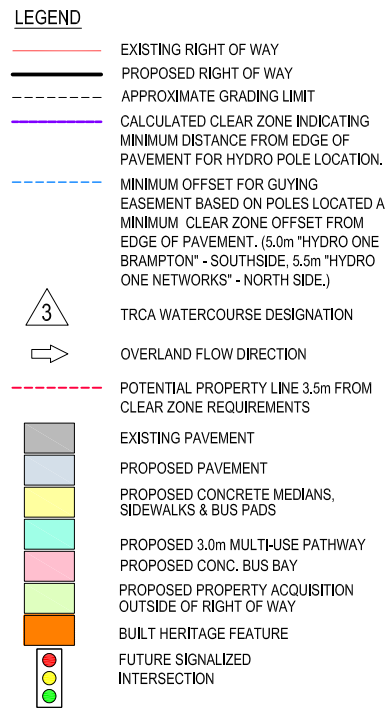
Eastbound – three through lanes

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.



Client

 **Region of Peel**  
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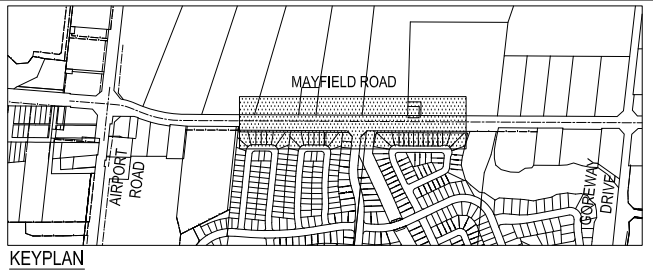
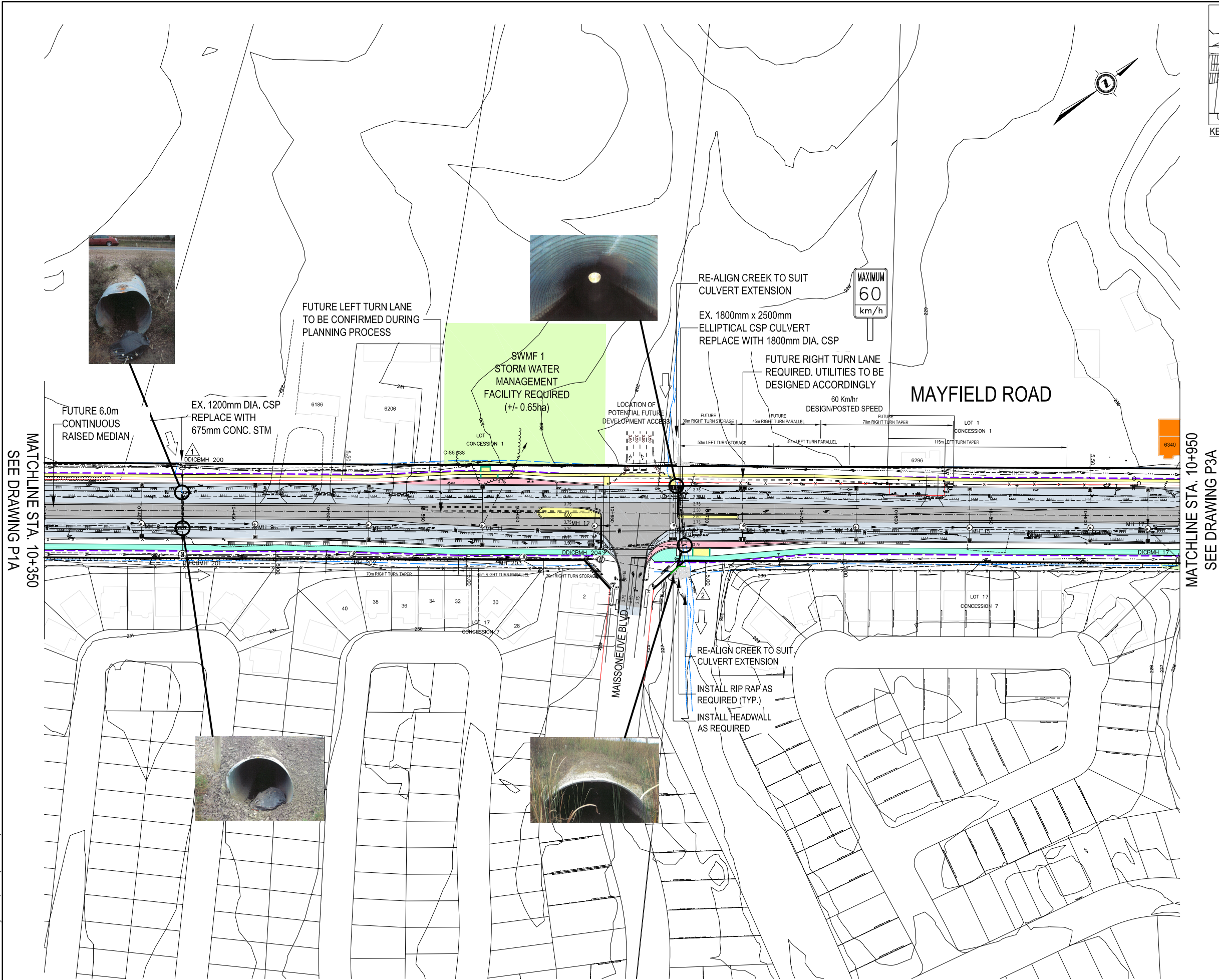
Drawing Title

**MAYFIELD ROAD**  
**AIRPORT ROAD TO COLERAINE DRIVE**  
**CLASS EA STUDY REPORT**  
**RECOMMENDED DESIGN ALTERNATIVE**  
**PLAN**  
**STA. 10+000 TO STA. 10+350**

Drawn By W.R.W.	Checked By J.C.B.	Drawing Number  <b>P1A</b>
Date 2012-10-17	Project No. 160210480	

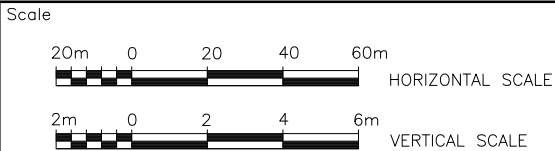


V:\01602\active\160210480\design\drawings\class\_ea\report\esr\_dwgs\opt4B\_mayfield\_rd\_esr\_rpt  
2012/10/17 5:56 PM by:write, bill (kitchener)



LEGEND

- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- APPROXIMATE GRADING LIMIT
- CALCULATED CLEAR ZONE INDICATING MINIMUM DISTANCE FROM EDGE OF PAVEMENT FOR HYDRO POLE LOCATION.
- MINIMUM OFFSET FOR GUYING EASEMENT BASED ON POLES LOCATED AT EDGE OF PAVEMENT. (5.0m "HYDRO ONE BRAMPTON" - SOUTHSIDE, 5.5m "HYDRO ONE NETWORKS" - NORTH SIDE.)
- TRCA WATERCOURSE DESIGNATION
- OVERLAND FLOW DIRECTION
- POTENTIAL PROPERTY LINE 3.5m FROM CLEAR ZONE REQUIREMENTS
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED CONCRETE MEDIANS, SIDEWALKS & BUS PADS
- PROPOSED 3.0m MULTI-USE PATHWAY
- PROPOSED CONC. BUS BAY
- PROPOSED PROPERTY ACQUISITION OUTSIDE OF RIGHT OF WAY
- BUILT HERITAGE FEATURE
- FUTURE SIGNALIZED INTERSECTION



Client

**Region of Peel**  
Working for you

Drawing Title

**MAYFIELD ROAD**  
**AIRPORT ROAD TO COLERAINE DRIVE**  
**CLASS EA STUDY REPORT**  
**RECOMMENDED DESIGN ALTERNATIVE**  
**PLAN**  
**STA. 10+350 TO STA. 14+350**

Drawn By W.R.W.	Checked By J.C.B.	Drawing Number <b>P2A</b>
Date 2012-10-17	Project No. 160210480	

BY 2031			
Road	Details of Improvement	EA Status	Part of 2019 Approved Budget?
Airport Road	2 to 5 lane widening from 1.0 km north of Mayfield Road to King Street	Completed	Y
	Corridor Improvements from King Street to Hunstmill Drive	Works in Progress	Y
	4 to 6 lane widening from Braydon Boulevard to Countryside Drive	Works in Progress	Y
Bovaird Drive	2 to 4 lane widening from Mississauga Road to 1.5 km West of Heritage Road	Completed	Y
	4 to 6 lane widening from James Potter/Creditview to Mississauga Road	Completed	Y
	4 to 6 lane widening from Mississauga Road to North/South Freeway (1 km W of Mississauga Road)	Completed	Y
Cawthra Road	Corridor and Intersection Improvements from Eastgate Parkway to Queen Elizabeth Way	Works in Progress	Y
Coleraine Drive	2 to 4 lane widening from Highway 50 to Mayfield Road	–	N
Dixie Road	4 to 6 lane widening from Queen Street East to Bovaird Drive	Completed	Y
	2 to 4 lane widening from Countryside Drive to Mayfield Road	Completed	Y
	2 to 5 lane widening from Mayfield Road to 2 km northerly	Completed	Y
	4 to 6 lane widening from Bovaird Drive to Countryside Drive	Completed	Y
Highway 50	5 to 7 lane widening from Castlemore Road to Mayfield Road	Completed	Y
Mavis Road	4 to 6 lane widening of Mavis Road, Region's portion, including the structure over Highway 407	Completed	Y
Mayfield Road	2 to 5 lane widening from Airport Road to The Gore Road	Completed	Y
	2 to 4 lane widening from Coleraine Drive to Hwy 50	Completed	Y
	2 to 6 lane widening from Hurontario Street to Chinguacousy Road	Completed	Y
	2 to 4 lane widening from The Gore Road to Coleraine Drive	Completed	Y
	2 to 5 lane widening from Chinguacousy Road to Mississauga Road	Completed	Y
	5 to 6 lane widening from Dixie Road to Bramalea Road	Completed	Y
	2 to 4 lane widening from Mississauga Road to Winston Churchill Boulevard	Completed	Y
	4 to 6 lane widening from Heart Lake Road to Hurontario Street	Completed	Y
	North Side Boulevard Widening - Bramalea Rd to Airport Rd	Completed	Y
	4 to 6 lane widening from Airport Rd to Clarkway Dr	Completed	Y
Mississauga Road	2 to 4 lane widening from Bovaird Drive to Mayfield Rd	Completed	Y
	4 to 6 lane widening from Financial Drive to Queen Street	Works in Progress	Y
	4 to 6 lane widening from Queen Street to Bovaird Drive	Works in Progress	Y
	4 to 6 lane widening from Bovaird Drive to Sandalwood Pkwy	Completed	Y
North/South Arterial Road	6 lane road from Future BramWest Pkwy to Bovaird Drive	–	Y
	6 lane road from Bovaird Drive to Future Sandalwood Pkwy	–	Y

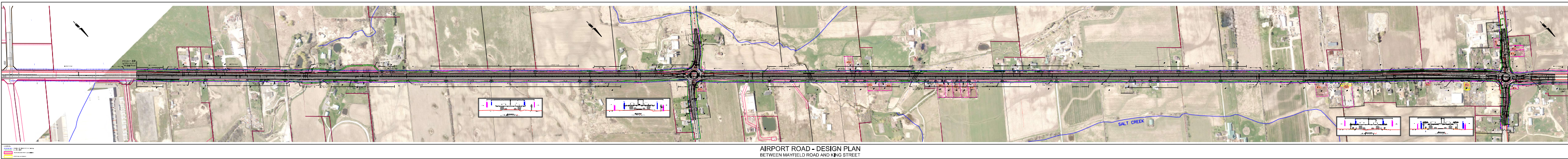
<b>Steeles Avenue West</b>	4 to 6 lane widening from Chinguacousy Road to Mississauga Road	Completed	Y
	4 to 6 lane widening from Mississauga Road to Winston Churchill Boulevard	Completed	Y
<b>The Gore Road</b>	2 to 4 widening from Squire Ellis Drive to Mayfield Road and	Completed	Y
	Corridor Improvements from Queen Street East to Castlemore Road	Completed	Y
	*4 to 6 lane widening from Castlemore Road to Countryside Drive	–	Y*
<b>Winston Churchill Boulevard</b>	2 to 4 lane widening from 2.0 km South of Embleton Road to Embleton Road	Works in Progress	Y
	4 to 6 lane widening from Highway 401 to Steeles Avenue	Works in Progress	Y
	5 to 7 lane widening from Steeles Avenue to 2 km South of Embleton Road	Works in Progress	Y
	4 to 6 lane widening from 2 km South of Embleton Road to Embleton Road	Works in Progress	Y
	4 to 6 lane widening from North Sheridan Way to Dundas Street	–	Y

**BY 2041**

			Part of 2019 Approved Budget?
Road	Details of Improvement	EA Status	
<b>Mayfield Road</b>	5 to 6 lane widening from Chinguacousy Road to West of Mississauga Road	Completed	Y
	4 to 6 lane widening from Clarkway Drive to Coleraine Drive	–	N
<b>Mississauga Road</b>	2 to 4 lane widening from Mayfield Road to Old School Road	–	N
<b>The Gore Road</b>	2 to 4 lane widening from Mayfield Road to Healey Road	–	N
<b>A2</b>	6 lane road from Mayfield Road to Highway 50	Work in Progress	N

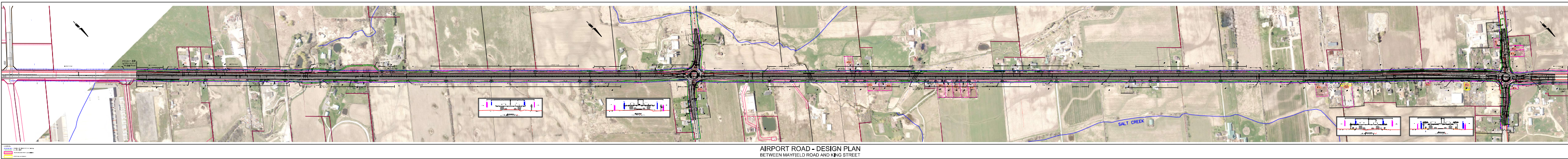
\* The 2012 LRTP recommended the widening of The Gore Road between Queen Street and Countryside Drive. An Environmental Assessment (EA) was completed for The Gore Road between Queen Street and Castlemore Road. The results recommended corridor improvements versus road widening. In this regard, the portion of The Gore Road between Castlemore Road and Countryside Drive is no longer required to be widened to 6 lanes.





AIRPORT ROAD - DESIGN PLAN  
BETWEEN MAYFIELD ROAD AND KING STREET



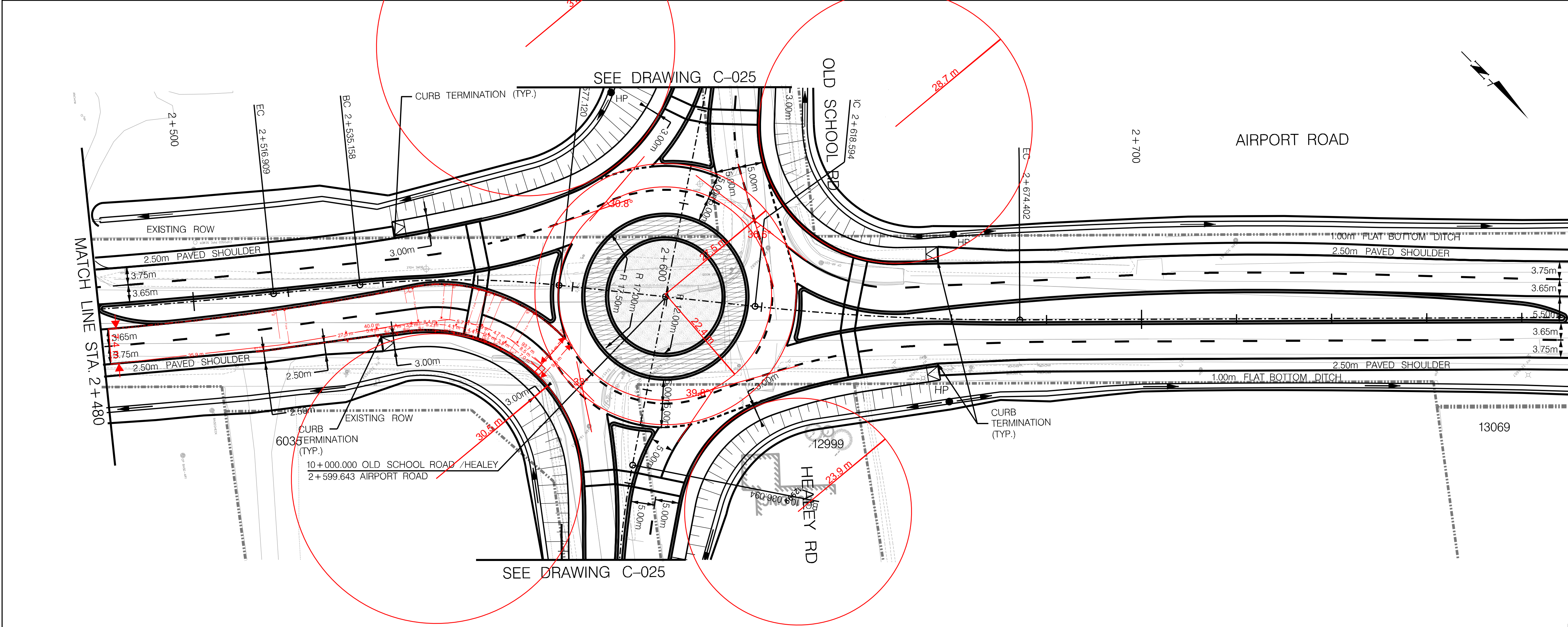


AIRPORT ROAD - DESIGN PLAN  
BETWEEN MAYFIELD ROAD AND KING STREET

# Appendix K

## Relevant Excerpts from Airport Road EA



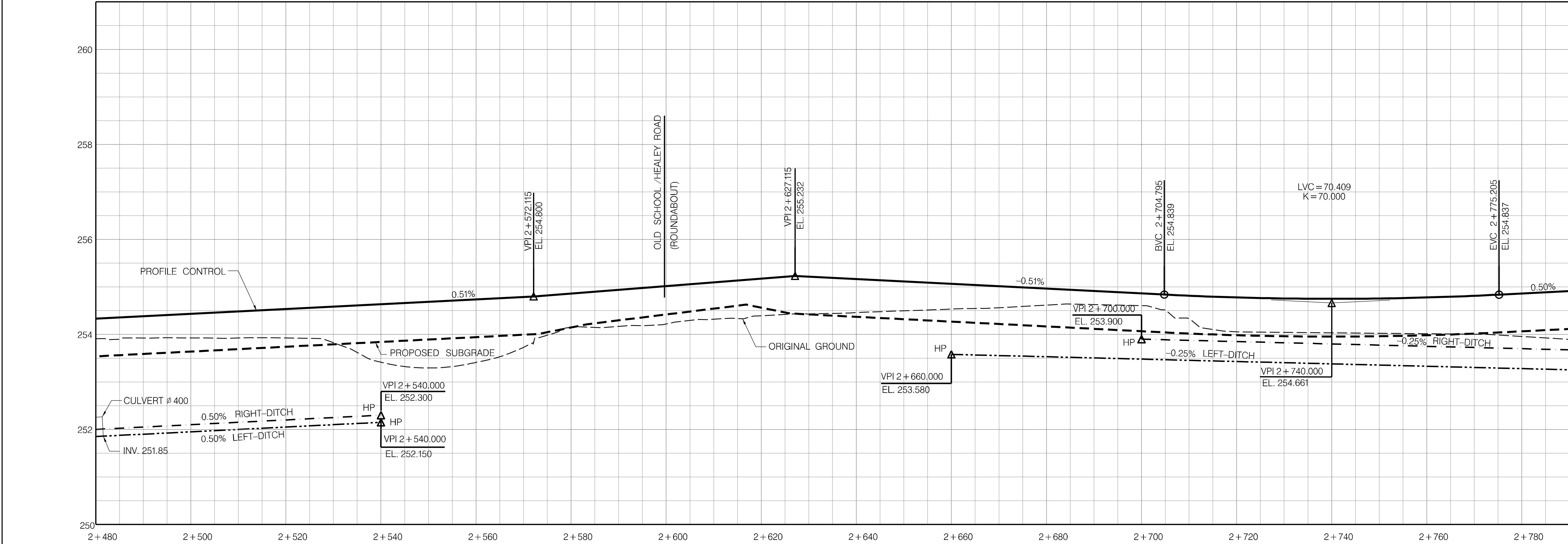


SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS	MAY 00, 2014	X.X.	GAS MAINS	MAY 00, 2014	X.X.
STORM SEWERS	MAY 00, 2014	X.X.	BELL U/G CABLE	MAY 00, 2014	X.X.
WATERMAINS	MAY 00, 2014	X.X.	HYDRO U/G CABLE	MAY 00, 2014	X.X.
TRANSIT	MAY 00, 2014	X.X.	HYDRO ONE	MAY 00, 2014	X.X.
PARKS & 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	Approved by
Chkd.	

NOTICE TO CONTRACTOR	
48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING	
THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBREOPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENERSOURCE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	
HORIZONTAL SCALE	
VERTICAL SCALE	



	2+480	2+500	2+520	2+540	2+560	2+580	2+600	2+620	2+640	2+660	2+680	2+700	2+720	2+740	2+760	2+780
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	254.634	254.617	254.607	254.055	254.033	254.013	253.955

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.	Project No.
Date	JULY 2018	Sheet	X of X
			Plan No.
			NC-009

# Appendix L

## TTS Data Results

Tue Jun 15 2021 12:39:01 GMT-0400 (Eastern Daylight Time) - Run Time: 3327ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd\_orig

Column: Primary travel mode of trip - mode\_prime

Table: 2006 GTA zone of destination - gta06\_dest

Filters:

(2006 GTA zone of destination - gta06\_dest In 3014 3015

and

Start time of trip - start\_time In 700-900

and

Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table: 3014

	Auto driver
PD 3 of Toronto	19
PD 7 of Toronto	17
Aurora	17
Vaughan	29
Caledon	158
Brampton	278
Halton Hills	66

Trip 2016

Table: 3015

	Auto driver
PD 8 of Toronto	29
Brampton	56
Orangeville	23
Mono	21

Tue Jun 15 2021 12:39:41 GMT-0400 (Eastern Daylight Time) - Run Time: 2380ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd\_orig

Column: Primary travel mode of trip - mode\_prime

Filters:

(Planning district of destination - pd\_dest In 34

and

Start time of trip - start\_time In 700-900

and

Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table:

	Auto driver
PD 1 of Toronto	68
PD 2 of Toronto	37
PD 3 of Toronto	85
PD 4 of Toronto	35
PD 6 of Toronto	60
PD 7 of Toronto	38
PD 8 of Toronto	157
PD 9 of Toronto	69
PD 10 of Toronto	135
PD 11 of Toronto	80
PD 12 of Toronto	20
PD 13 of Toronto	15
PD 14 of Toronto	14
PD 15 of Toronto	16
Oshawa	21
East Gwillimbury	5
Newmarket	64
Aurora	47
Richmond Hill	143
Markham	174
King	242
Vaughan	689
Caledon	5780
Brampton	3104
Mississauga	459
Halton Hills	499
Milton	103
Oakville	25
Burlington	91
Hamilton	57
City of Guelph	98
Guelph/Eramosa	49
Centre Wellington	42
Erin	85
Orangeville	423
Barrie	21
Innisfil	34
Bradford-West Gwillimbury	10

New Tecumseth	355
Adjala-Tosorontio	225
Essa	7
Springwater	13
Oro-Medonte	22
Mulmur	9
Shelburne	12
Mono	187
East Garafraxa	35

Tue Jun 15 2021 12:46:33 GMT-0400 (Eastern Daylight Time) - Run Time: 3041ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd\_dest

Column: Primary travel mode of trip - mode\_prime

Table: 2006 GTA zone of origin - gta06\_orig

Filters:

(2006 GTA zone of origin - gta06\_orig In 3014

3015

and

Start time of trip - start\_time In 700-900

and

Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table: 3014

Auto driver

PD 8 of Toronto

36

Vaughan

15

Caledon

10

Brampton

193

Trip 2016

Table: 3015

Auto driver

PD 10 of Toronto

35

Vaughan

26

Brampton

74

Mississauga

64

Tue Jun 15 2021 12:45:40 GMT-0400 (Eastern Daylight Time) - Run Time: 2535ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd\_dest

Column: Primary travel mode of trip - mode\_prime

Filters:

(Planning district of origin - pd\_orig In 34

and

Start time of trip - start\_time In 700-900

and



Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table:

	Auto driver
PD 1 of Toronto	401
PD 2 of Toronto	50
PD 3 of Toronto	25
PD 4 of Toronto	185
PD 5 of Toronto	90
PD 7 of Toronto	158
PD 8 of Toronto	485
PD 9 of Toronto	1042
PD 10 of Toronto	332
PD 11 of Toronto	113
PD 12 of Toronto	83
PD 13 of Toronto	64
PD 16 of Toronto	30
Oshawa	22
Clarington	12
East Gwillimbury	41
Newmarket	185
Aurora	107
Richmond Hill	103
Whitchurch-Stouffville	34
Markham	361
King	398
Vaughan	1740
Caledon	5780
Brampton	4706
Mississauga	2348
Halton Hills	224
Milton	41
Oakville	154
Burlington	39
Flamborough	6
Hamilton	89
Welland	50
Cambridge	27
Woolwich	13
City of Guelph	96
Erin	239
Orangeville	520
Barrie	72
Innisfil	7
Bradford-West Gwillimbury	59

New Tecumseth	142
Adjala-Tosorontio	69
Springwater	9
Grey	8
Collingwood	82
Oro-Medonte	9
Mono	236
East Garafraxa	9
External	14

Tue Jun 15 2021 12:41:27 GMT-0400 (Eastern Daylight Time) - Run Time: 3374ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd\_orig

Column: Primary travel mode of trip - mode\_prime

Table: 2006 GTA zone of destination - gta06\_dest

Filters:

(2006 GTA zone of destination - gta06\_dest In 3014

3015

and

Start time of trip - start\_time In 1600-1800

and

Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table: 3014

Auto driver

Caledon

54

Brampton

54

Trip 2016

Table: 3015

Auto driver

PD 1 of Toronto

35

PD 9 of Toronto

50

Caledon

31

Brampton

66

Tue Jun 15 2021 12:42:24 GMT-0400 (Eastern Daylight Time) - Run Time: 2250ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd\_orig

Column: Primary travel mode of trip - mode\_prime

Filters:

(Planning district of destination - pd\_dest In 34

and

Start time of trip - start\_time In 1600-1800

and

Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table:

	Auto driver
PD 1 of Toronto	538
PD 2 of Toronto	68
PD 3 of Toronto	72
PD 4 of Toronto	228
PD 5 of Toronto	125
PD 6 of Toronto	7
PD 7 of Toronto	180
PD 8 of Toronto	519
PD 9 of Toronto	845
PD 10 of Toronto	675
PD 11 of Toronto	45
PD 12 of Toronto	29
PD 13 of Toronto	74
PD 16 of Toronto	15
Oshawa	64
East Gwillimbury	119
Newmarket	208
Aurora	122
Richmond Hill	99
Whitchurch-Stouffville	49
Markham	340
King	255
Vaughan	1941
Caledon	5006
Brampton	4079
Mississauga	2409
Halton Hills	450
Milton	10
Oakville	179
Burlington	79
Flamborough	6
St. Catharines	21
Welland	50
Kitchener	51
Woolwich	47
City of Guelph	103
Erin	126
Orangeville	397
Barrie	79
Bradford-West Gwillimbury	59
New Tecumseth	140
Adjala-Tosorontio	83
Essa	7

Collingwood	90
Penetanguishene	63
Oro-Medonte	9
Amaranth	57
Mono	165
East Garafraxa	17

Tue Jun 15 2021 12:44:08 GMT-0400 (Eastern Daylight Time) - Run Time: 3147ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd\_dest

Column: Primary travel mode of trip - mode\_prime

Table: 2006 GTA zone of origin - gta06\_orig

Filters:

(2006 GTA zone of origin - gta06\_orig In 3014

3015

and

Start time of trip - start\_time In 1600-1800

and

Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table: 3014

Auto driver

PD 7 of Toronto	17
Aurora	17
Caledon	131
Brampton	97
Mississauga	9
Halton Hills	58
Shelburne	11

Trip 2016

Table: 3015

Auto driver

Caledon	51
Brampton	151
Milton	27
Burlington	47
Mono	21

Tue Jun 15 2021 12:45:07 GMT-0400 (Eastern Daylight Time) - Run Time: 2385ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd\_dest

Column: Primary travel mode of trip - mode\_prime

Filters:

(Planning district of origin - pd\_orig In 34  
and  
Start time of trip - start\_time In 1600-1800  
and  
Primary travel mode of trip - mode\_prime In D)

Trip 2016

Table:

	Auto driver
PD 1 of Toronto	162
PD 2 of Toronto	23
PD 3 of Toronto	105
PD 4 of Toronto	17
PD 5 of Toronto	74
PD 6 of Toronto	33
PD 7 of Toronto	138
PD 8 of Toronto	122
PD 9 of Toronto	264
PD 10 of Toronto	67
PD 11 of Toronto	80
PD 12 of Toronto	14
PD 13 of Toronto	25
PD 14 of Toronto	33
PD 16 of Toronto	49
Ajax	17
Oshawa	57
East Gwillimbury	55
Newmarket	73
Aurora	47
Richmond Hill	138
Markham	192
King	203
Vaughan	857
Caledon	5006
Brampton	3025
Mississauga	673
Halton Hills	408
Milton	154
Oakville	78
Burlington	80
Glanbrook	105
Stoney Creek	16
Hamilton	13
Grimsby	42
St. Catharines	46
Welland	24

Kitchener	29
City of Guelph	119
Guelph/Eramosa	62
Centre Wellington	58
Erin	91
Orangeville	751
Barrie	14
Innisfil	43
Bradford-West Gwillimbury	26
New Tecumseth	576
Adjala-Tosorontio	167
Essa	22
Clearview	28
Springwater	69
Grey	14
Oro-Medonte	22
Shelburne	118
Mono	333
East Garafraxa	38



Tue Jun 15 2021 12:23:41 GMT-0400 (Eastern Daylight Time) - Run Time: 2225ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of household - pd\_hhld

Column: Primary travel mode of trip - mode\_prime

Filters:

(Planning district of household - pd\_hhld In 34

and

Start time of 1500-1900

and

Age of person - age In 18-99)

Trip 2016

Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit
Caledon	605	28	56246	295	114

Auto passenger	School bus	Taxi passenger	Paid rideshare	Walk
3946	64	41	37	312

# Appendix M

## Detailed Trip Distribution Worksheets

Project Name	Tullamore Industrial	TRIP DISTRIBUTION AND ASSIGNMENT
Project Number	2022-5842	
Current Table:	Trip Distribution Z1 Trip Dist	

AM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				90%				100%
2	West via Old School				10%				
3	East Via Mayfield		90%				100%		
4	East via Healey		10%						
5	South Via Torbram			100%					
6	South Via Airport							100%	
7	North Via Torbram	100%							
8	North Via Airport					100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

PM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				90%				100%
2	West via Old School				10%				
3	East Via Mayfield		90%				100%		
4	East via Healey		10%						
5	South Via Torbram			100%					
6	South Via Airport							100%	
7	North Via Torbram	100%							
8	North Via Airport					100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

Time Period	CARS				Total	TRUCKS				Total
	N	E	S	W		N	E	S	W	
AM (IN)	20.0%	10.0%	35.0%	35.0%	100.0%	20.0%	10.0%	35.0%	35.0%	100.0%
AM (OUT)	10.0%	20.0%	45.0%	25.0%	100.0%	10.0%	20.0%	45.0%	25.0%	100.0%
PM (IN)	15.0%	12.0%	44.0%	29.0%	100.0%	15.0%	12.0%	44.0%	29.0%	100.0%
PM (OUT)	30.0%	10.0%	20.0%	40.0%	100.0%	30.0%	10.0%	20.0%	40.0%	100.0%

Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment 2: Car AM

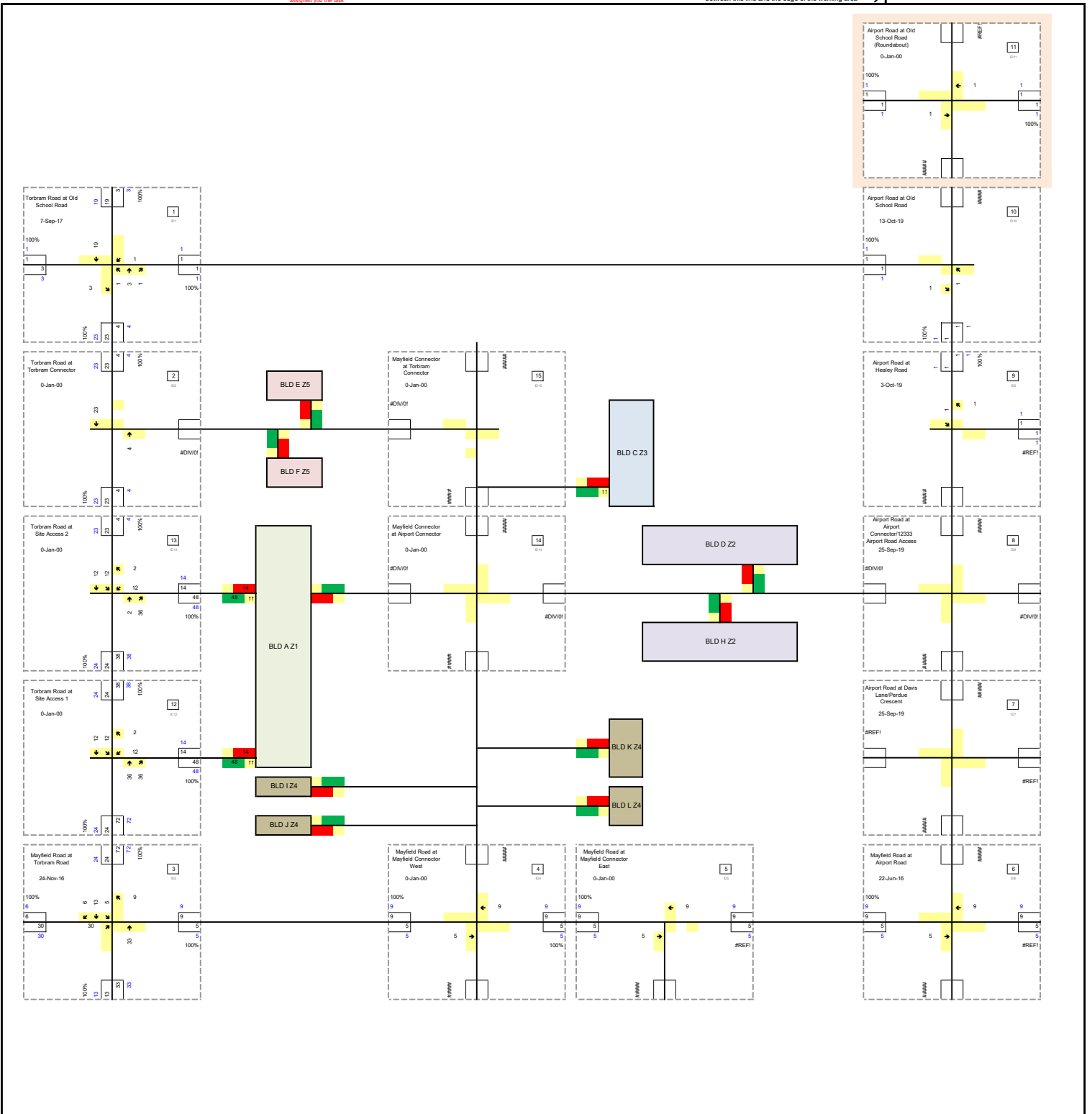
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	95	95	95
Out	28	28	28

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z1 Car PM

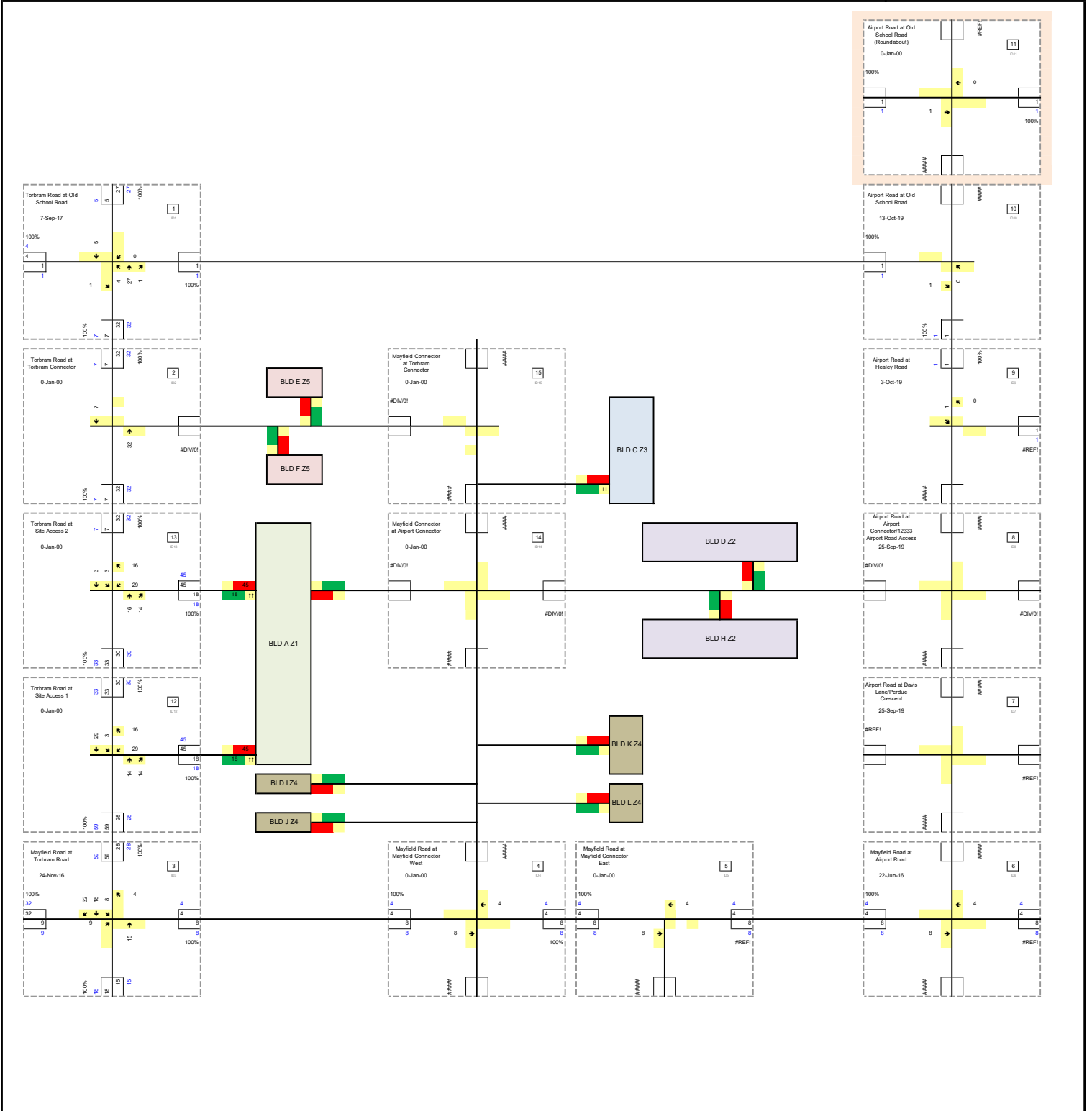
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	35	35	35
Out	90	90	90

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace\*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z1 Truck AM

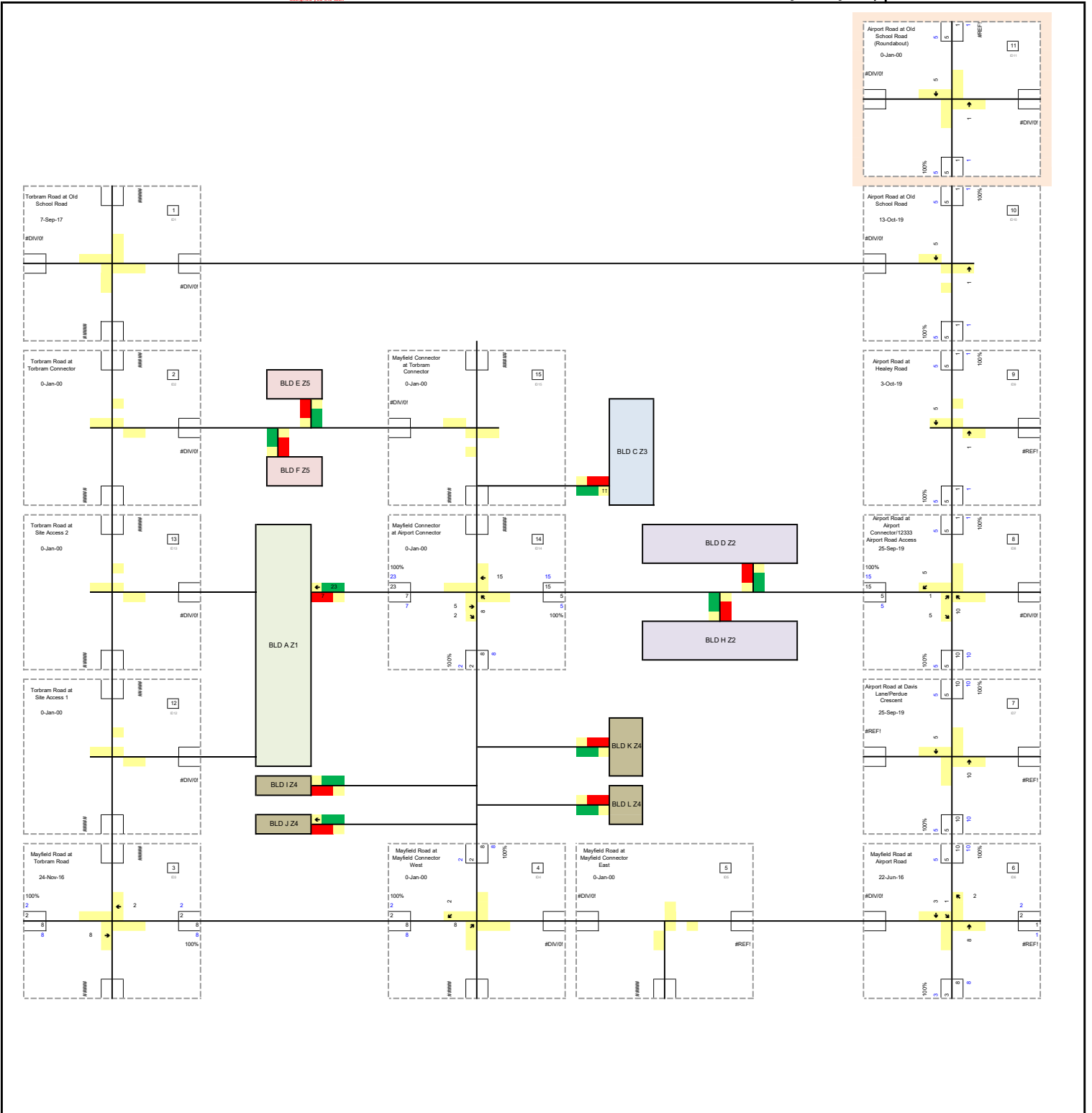
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	23	23	23
Out	7	7	7

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z1 Truck PM

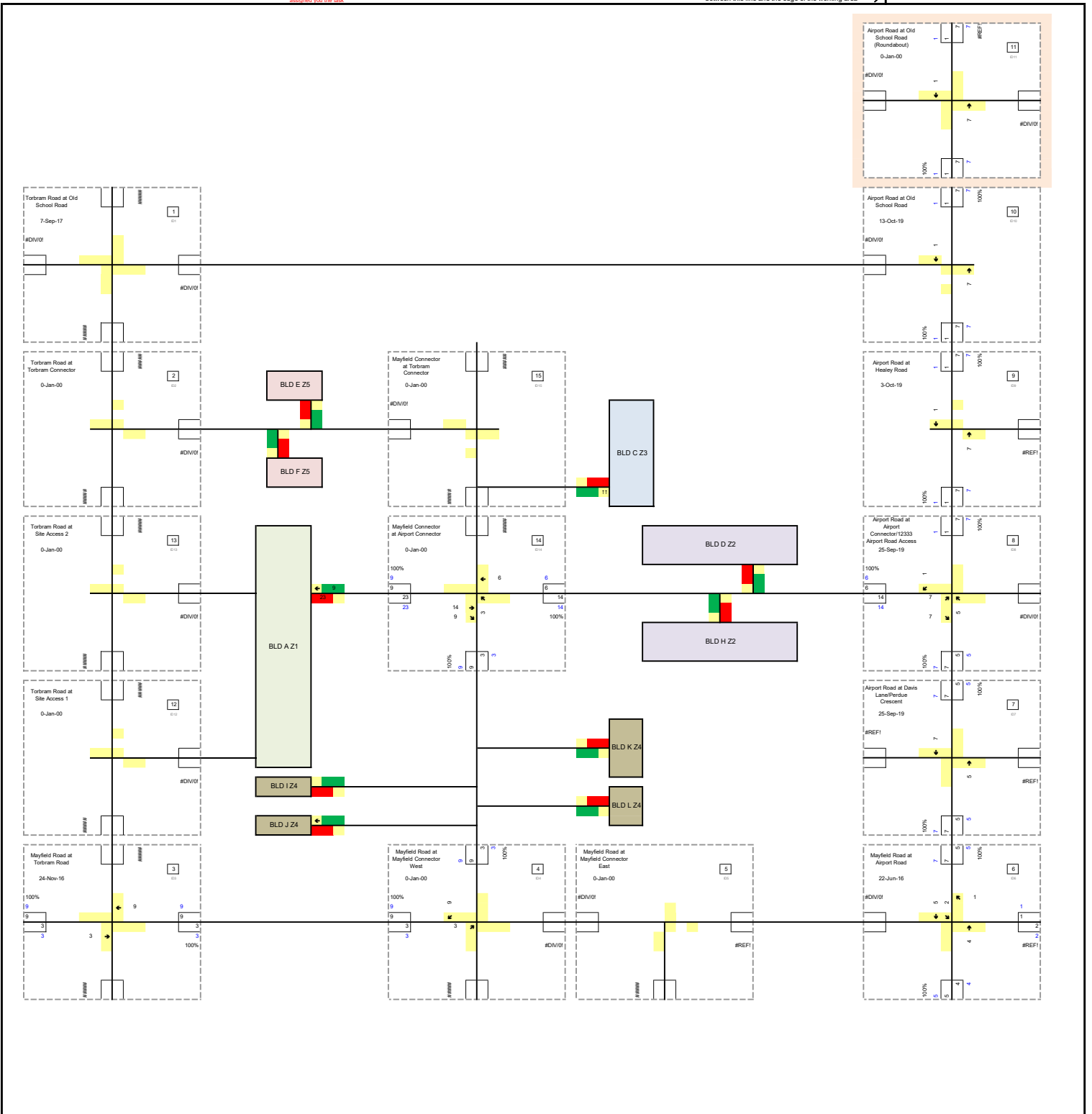
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	9	9	9
Out	23	23	23

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area





Project Name	Tullamore Industrial	TRIP DISTRIBUTION AND ASSIGNMENT
Project Number	2022-5842	
Current Table:	Trip Distribution Z2 Trip Dist	

AM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				90%				100%
2	West via Old School				10%				
3	East Via Mayfield		80%				100%		
4	East via Healey		20%						
5	South Via Torbram								
6	South Via Airport			100%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

PM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				90%				100%
2	West via Old School				10%				
3	East Via Mayfield		80%				100%		
4	East via Healey		20%						
5	South Via Torbram								
6	South Via Airport			100%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

Time Period	CARS				Total	TRUCKS				Total
	N	E	S	W		N	E	S	W	
AM (IN)	20.0%	10.0%	35.0%	35.0%	100.0%	20.0%	10.0%	35.0%	35.0%	100.0%
AM (OUT)	10.0%	20.0%	45.0%	25.0%	100.0%	10.0%	20.0%	45.0%	25.0%	100.0%
PM (IN)	15.0%	12.0%	44.0%	29.0%	100.0%	15.0%	12.0%	44.0%	29.0%	100.0%
PM (OUT)	30.0%	10.0%	20.0%	40.0%	100.0%	30.0%	10.0%	20.0%	40.0%	100.0%

Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z2 Car AM

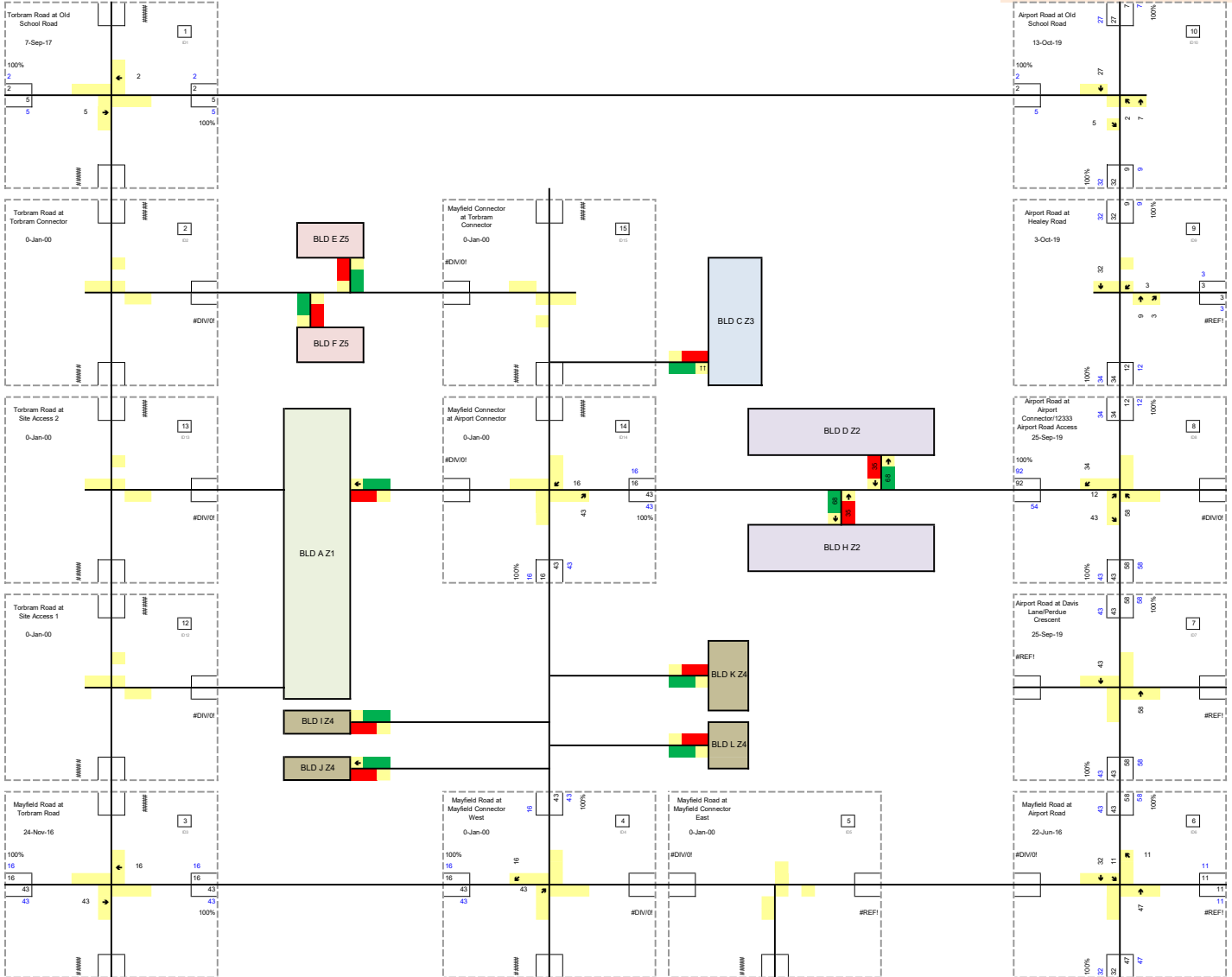
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	135	135	135
Out	70	70	70

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z2 Car PM

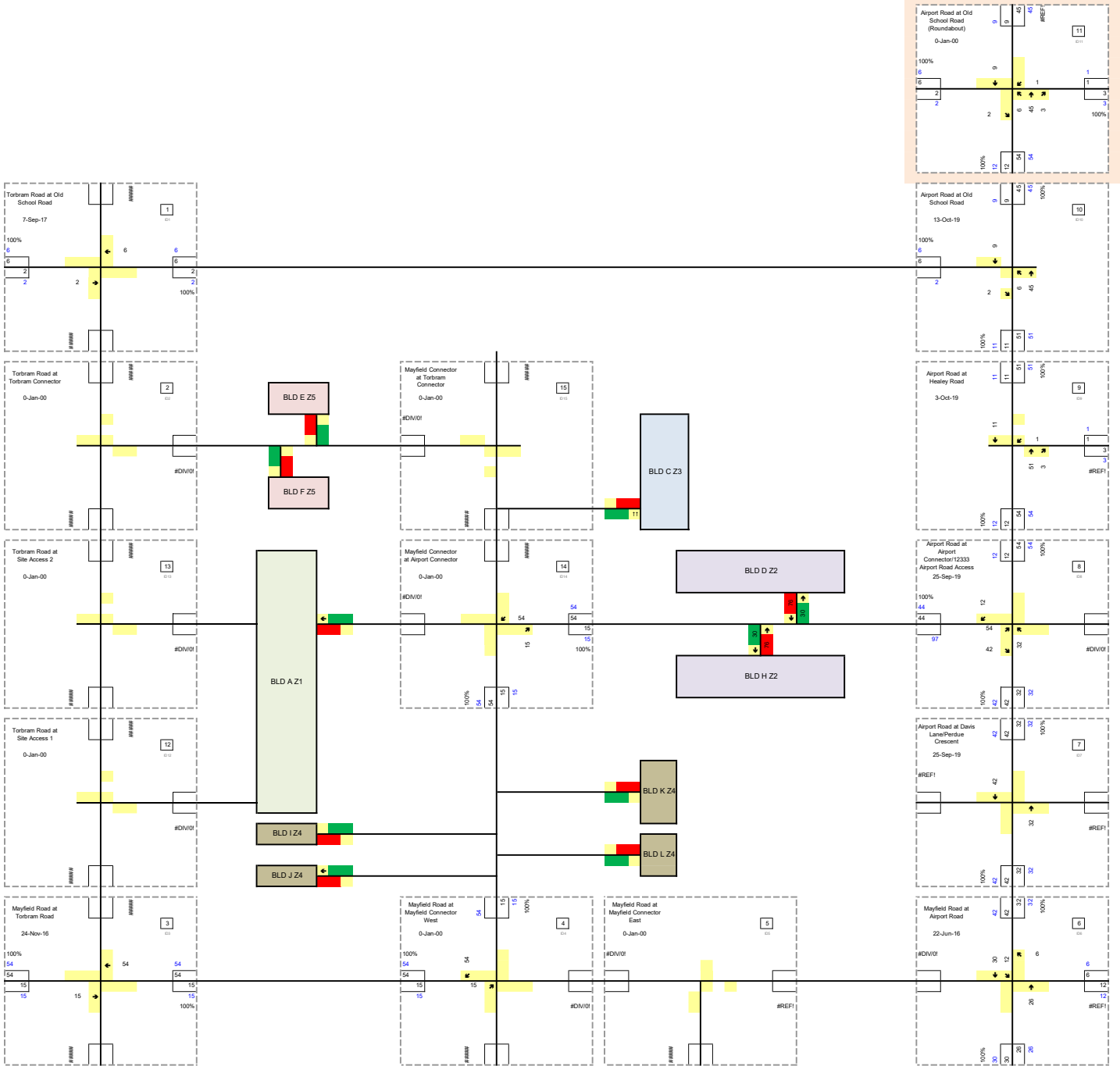
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	59	59	59
Out	151	151	151

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace\*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z2 Truck AM

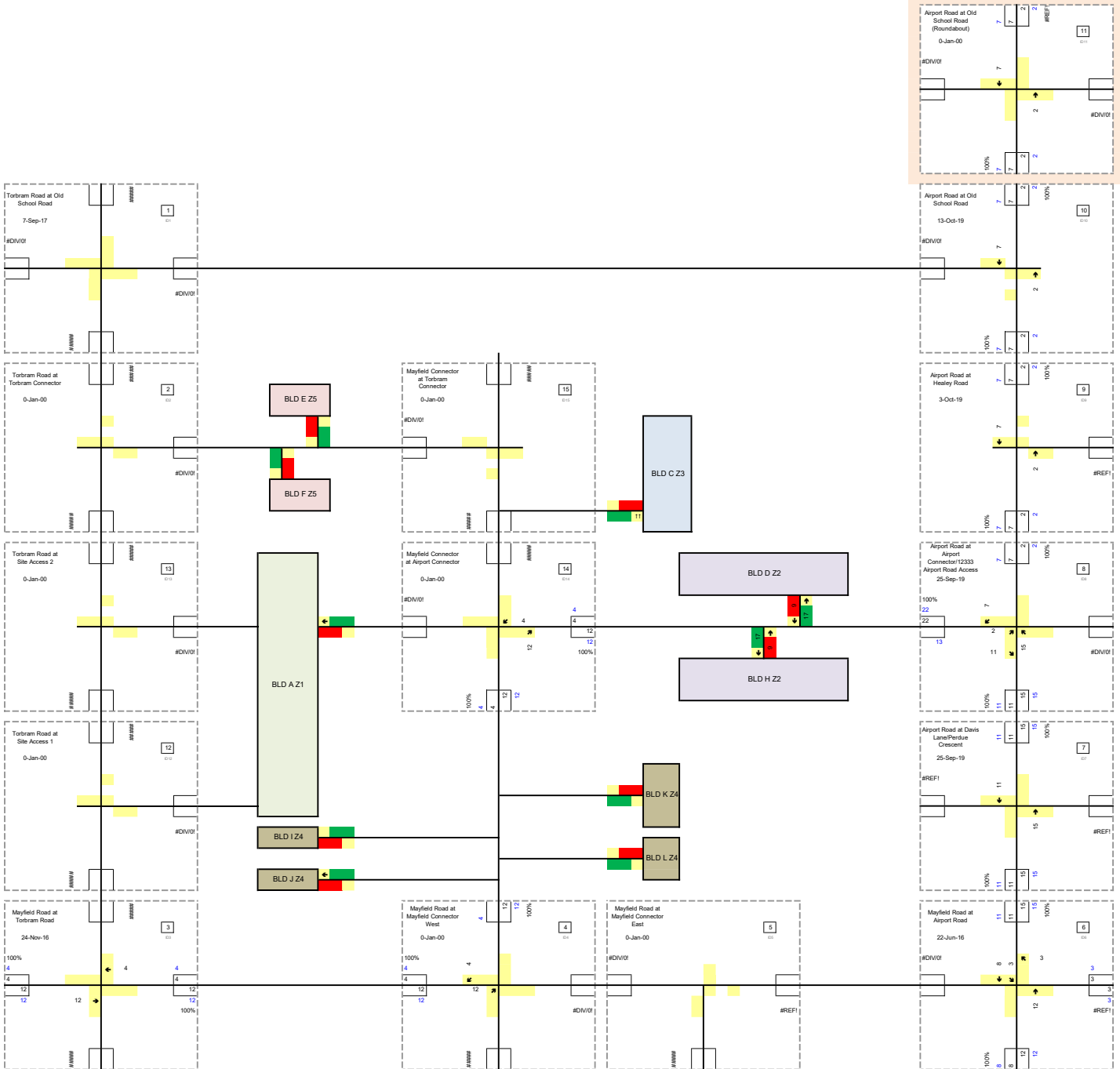
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	34	34	34
Out	17	17	17

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



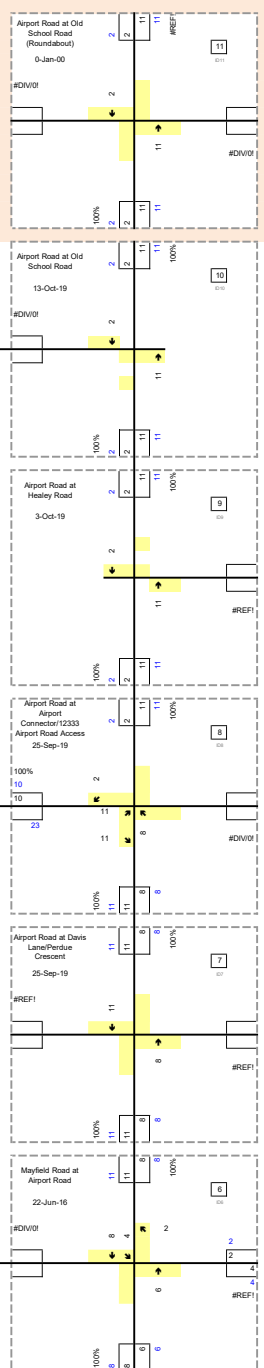
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment steps can be seen on the next slide for more information. If you are unfamiliar with how to set up the site trips please speak to the person in charge of the site.

The general trip assignment steps can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace "

To expand working area insert columns at any column



Project Name	Tullamore Industrial	TRIP DISTRIBUTION AND ASSIGNMENT
Project Number	2022-5842	
Current Table:	Trip Distribution Z3 Trip Dist	

AM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				100%				100%
2	West via Old School								
3	East Via Mayfield		100%				100%		
4	East via Healey								
5	South Via Torbram			30%					
6	South Via Airport			70%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

PM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				100%				100%
2	West via Old School								
3	East Via Mayfield		100%				100%		
4	East via Healey								
5	South Via Torbram			30%					
6	South Via Airport			70%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

Time Period	CARS				Total	TRUCKS				Total
	N	E	S	W		N	E	S	W	
AM (IN)	20.0%	10.0%	35.0%	35.0%	100.0%	20.0%	10.0%	35.0%	35.0%	100.0%
AM (OUT)	10.0%	20.0%	45.0%	25.0%	100.0%	10.0%	20.0%	45.0%	25.0%	100.0%
PM (IN)	15.0%	12.0%	44.0%	29.0%	100.0%	15.0%	12.0%	44.0%	29.0%	100.0%
PM (OUT)	30.0%	10.0%	20.0%	40.0%	100.0%	30.0%	10.0%	20.0%	40.0%	100.0%

Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z3 Car AM

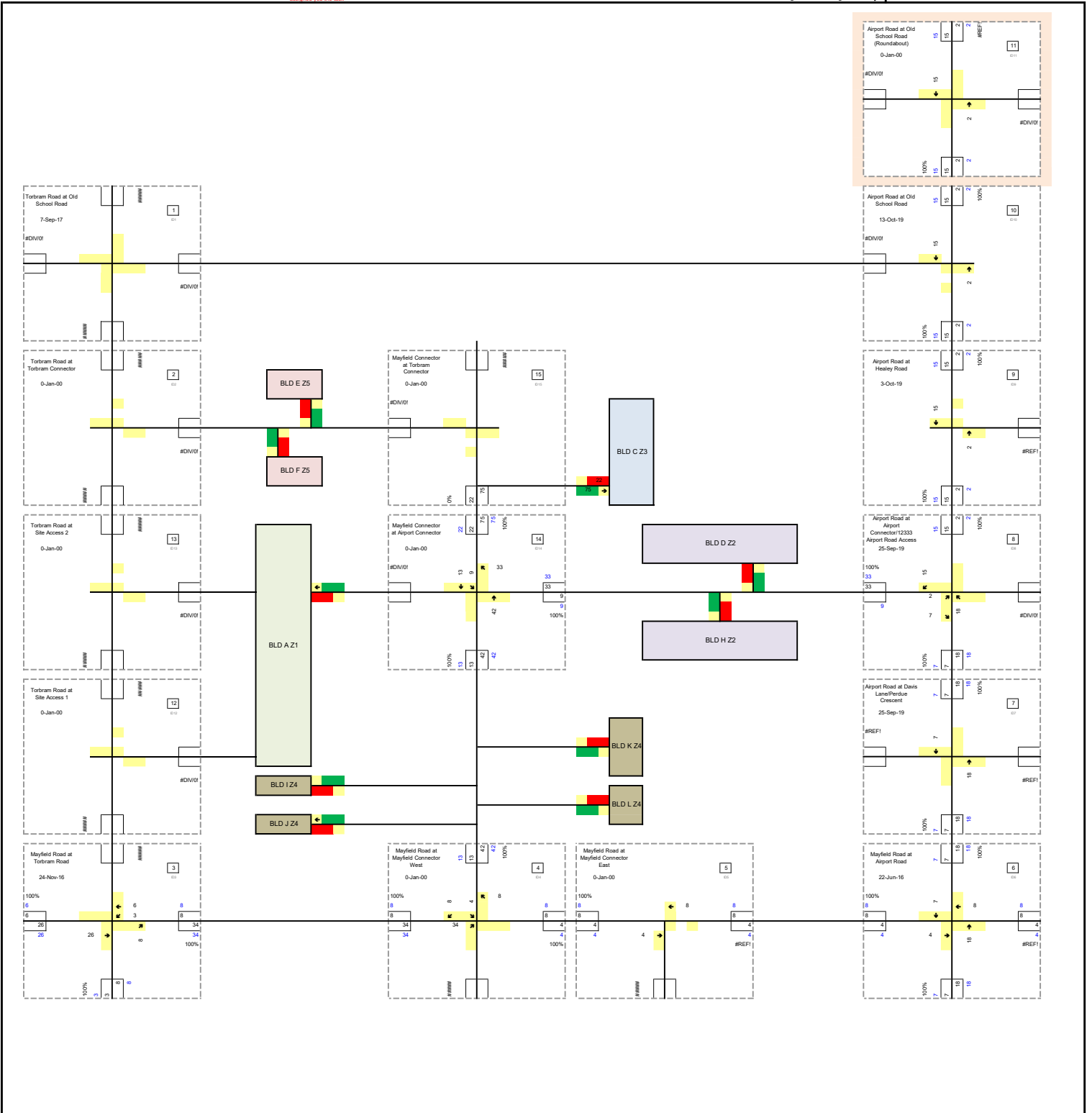
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	75	75	75
Out	22	22	22

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace\*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z3 Car PM

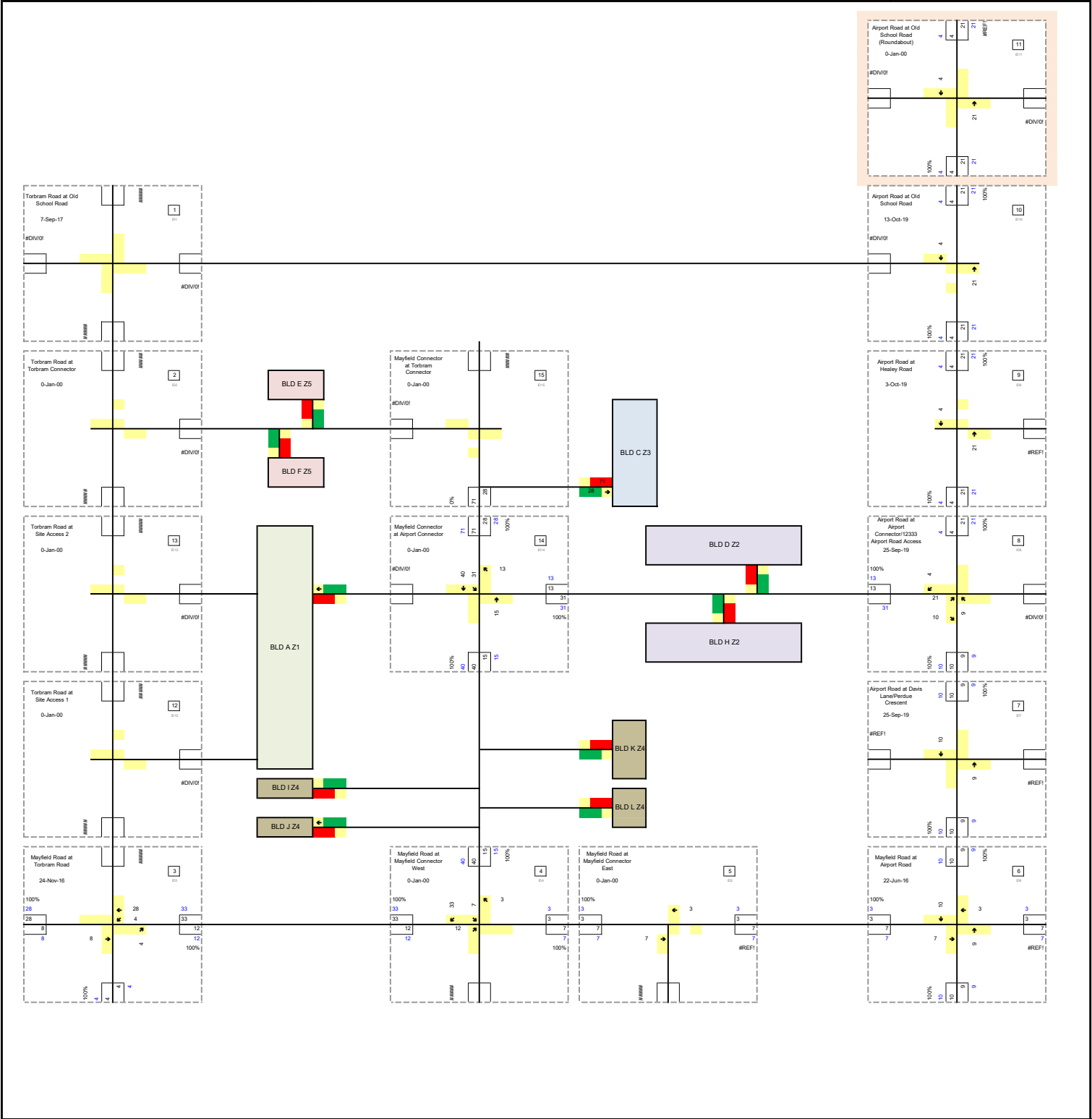
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	28	28	28
Out	71	71	71

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace\*

To expand working area insert columns at any column between this line and the edge of the working area





Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z3 Truck AM

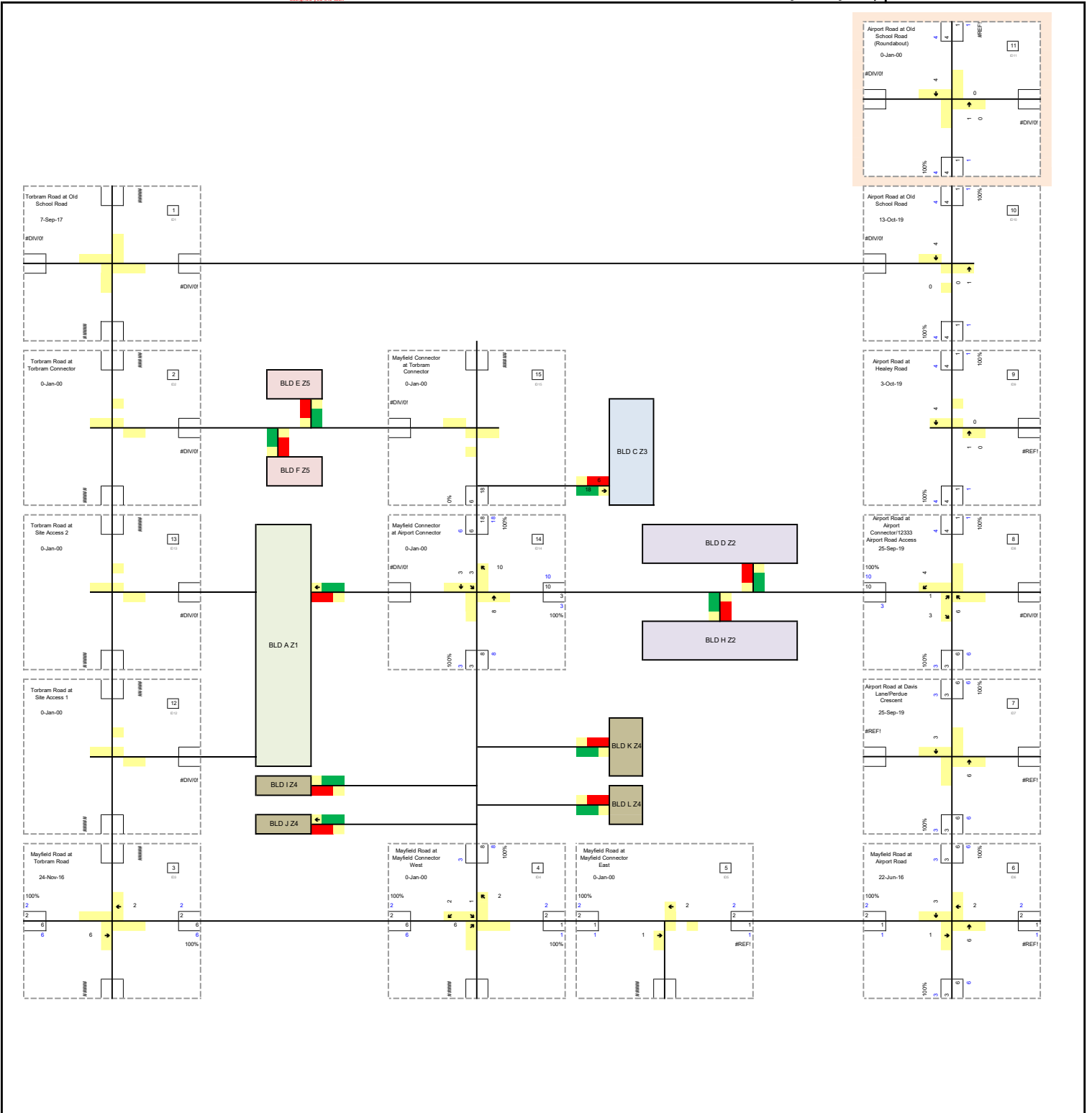
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	18	18	18
Out	6	6	6

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z3 Truck PM

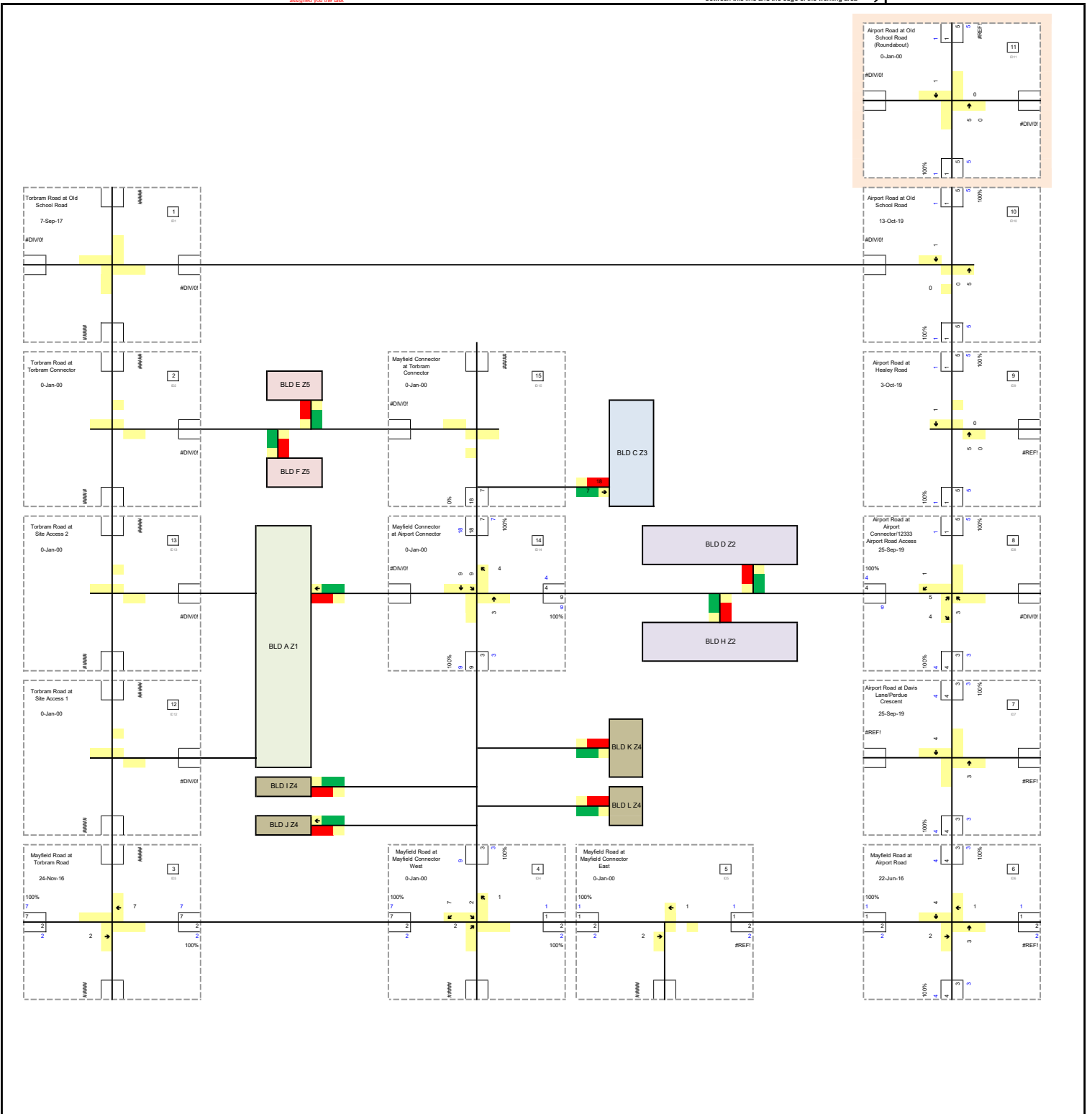
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	7	7	7
Out	18	18	18

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace"

To expand working area insert columns at any column between this line and the edge of the working area



Project Name	Tullamore Industrial	TRIP DISTRIBUTION AND ASSIGNMENT
Project Number	2022-5842	
Current Table:	Trip Distribution Z4 Trip Dist	

AM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				100%				100%
2	West via Old School								
3	East Via Mayfield		100%				100%		
4	East via Healey								
5	South Via Torbram			30%					
6	South Via Airport			70%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

PM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				100%				100%
2	West via Old School								
3	East Via Mayfield		100%				100%		
4	East via Healey								
5	South Via Torbram			30%					
6	South Via Airport			70%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

Time Period	CARS				Total	TRUCKS				Total
	N	E	S	W		N	E	S	W	
AM (IN)	20.0%	10.0%	35.0%	35.0%	100.0%	20.0%	10.0%	35.0%	35.0%	100.0%
AM (OUT)	10.0%	20.0%	45.0%	25.0%	100.0%	10.0%	20.0%	45.0%	25.0%	100.0%
PM (IN)	15.0%	12.0%	44.0%	29.0%	100.0%	15.0%	12.0%	44.0%	29.0%	100.0%
PM (OUT)	30.0%	10.0%	20.0%	40.0%	100.0%	30.0%	10.0%	20.0%	40.0%	100.0%

Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z4 Car AM

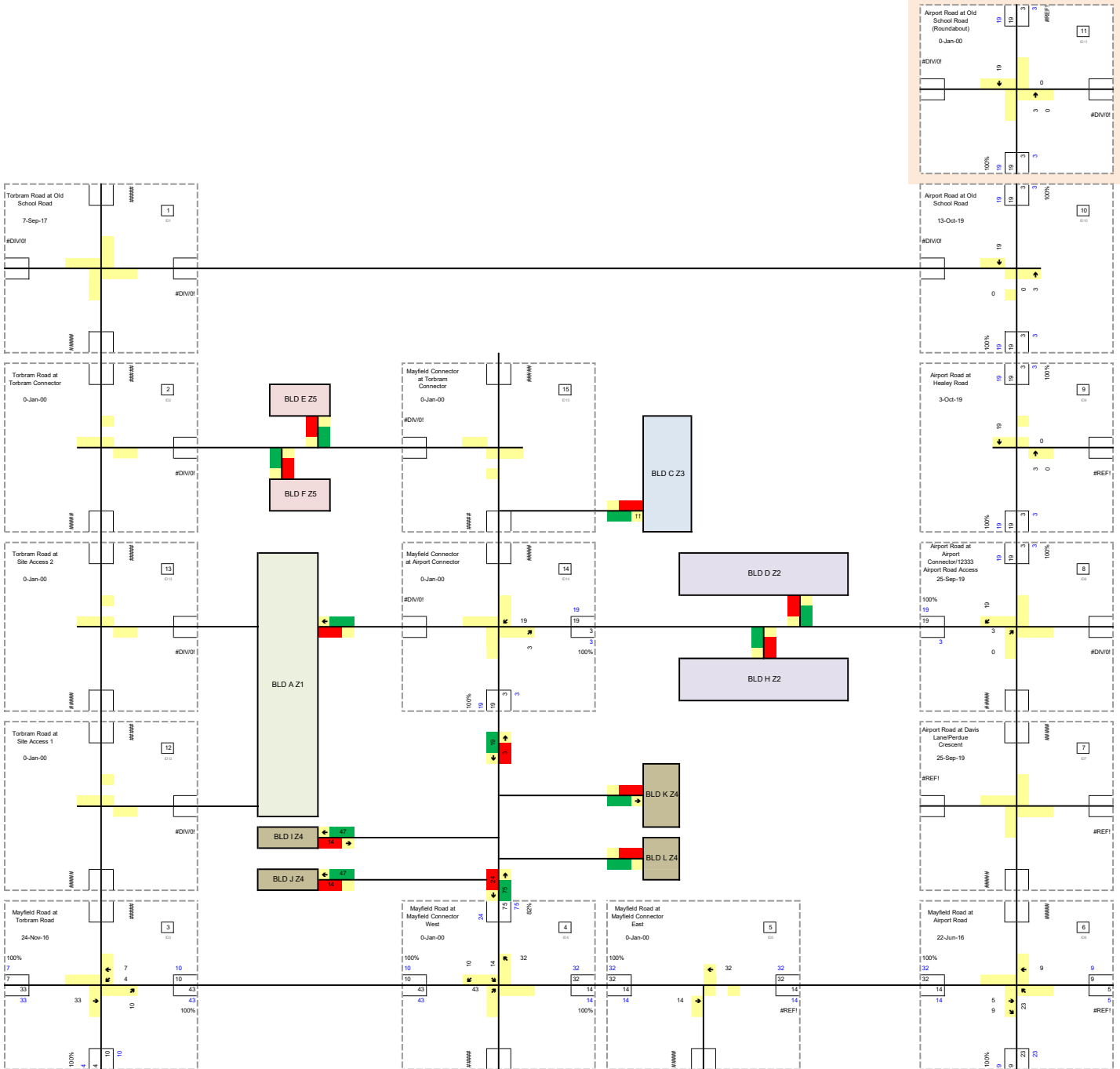
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	94	94	94
Out	27	27	27

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z4 Car PM

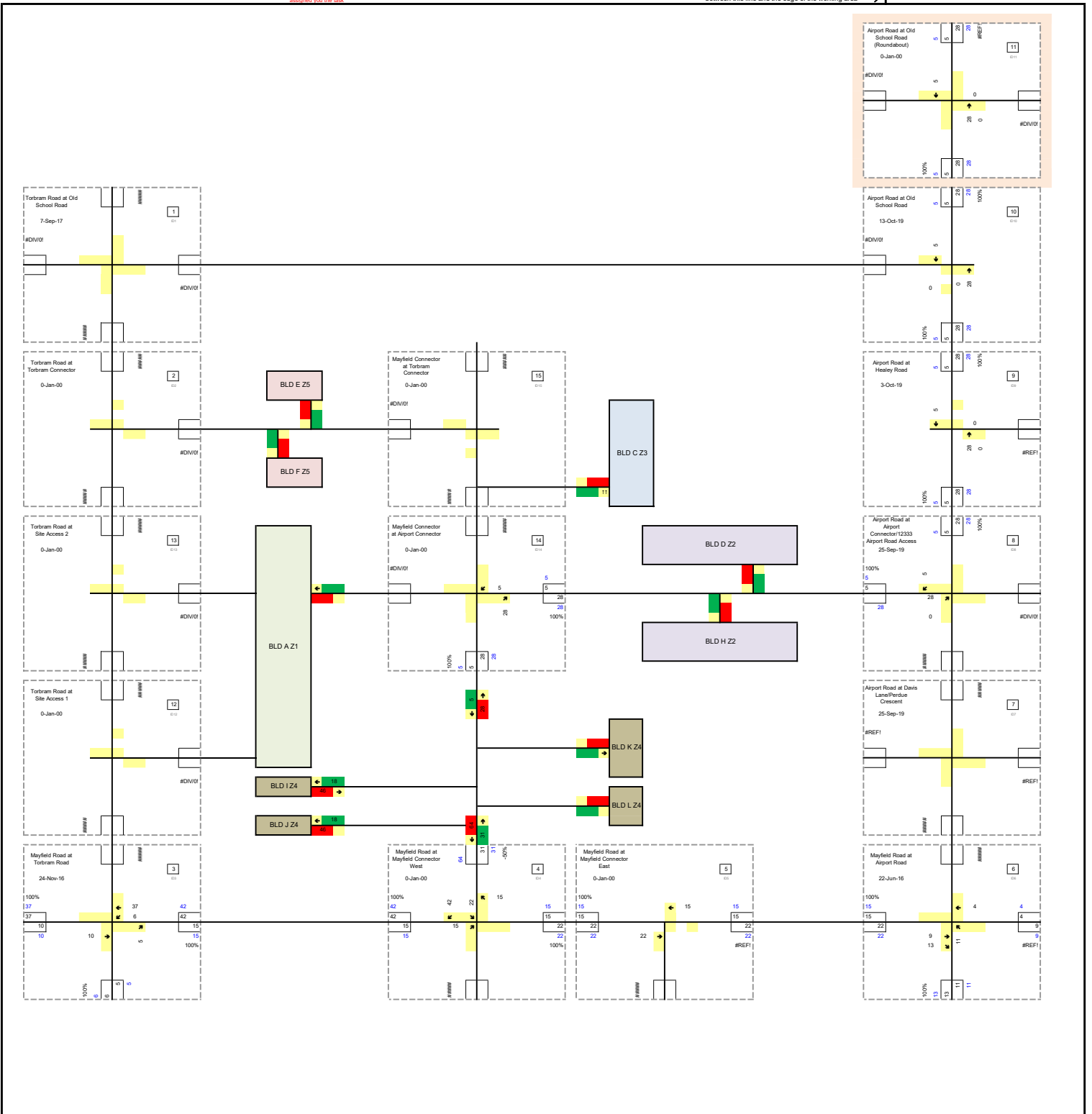
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	36	36	36
Out	92	92	92

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z4 Truck AM

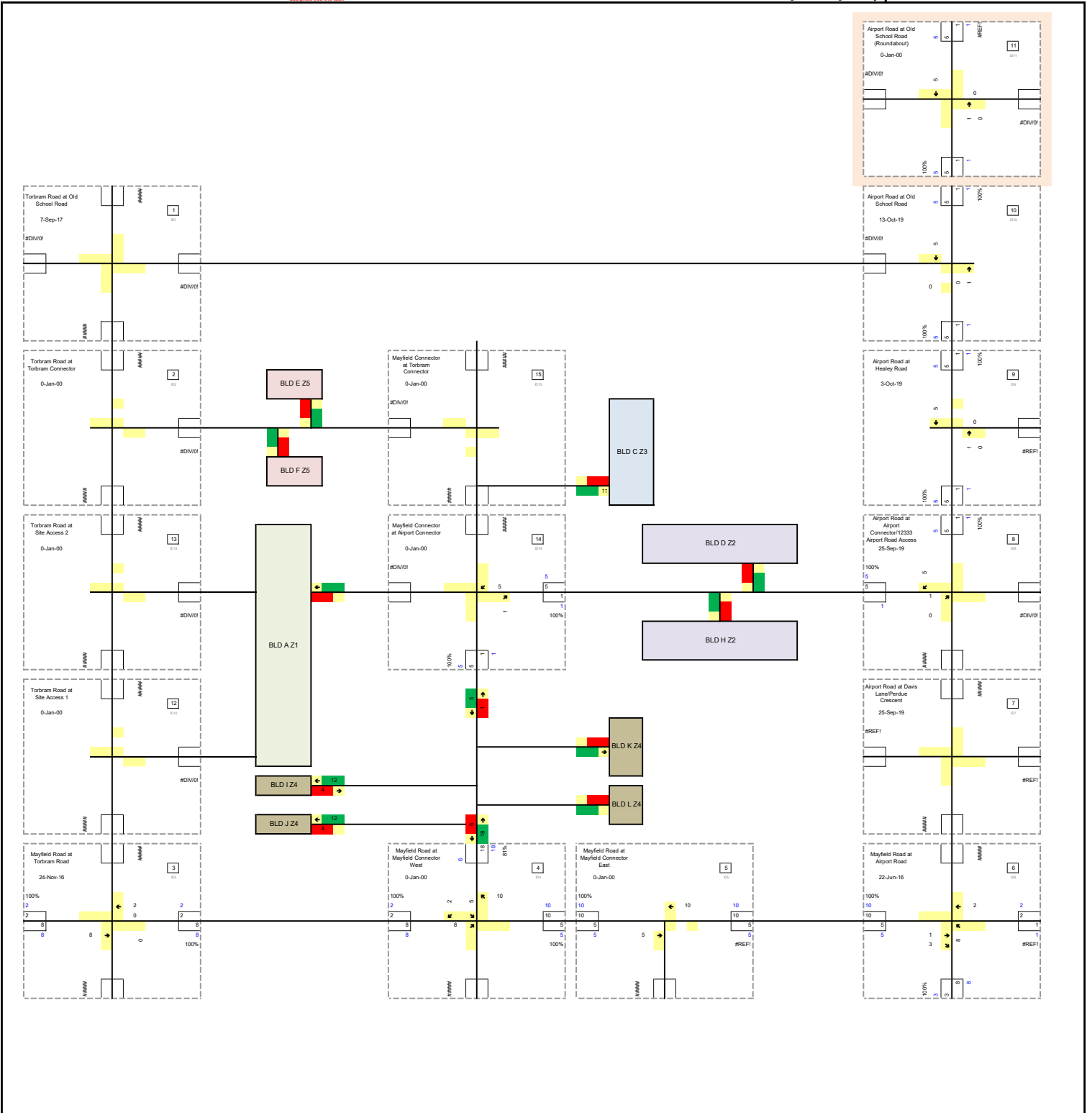
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	23	23	23
Out	7	7	7

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace"

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z4 Truck PM

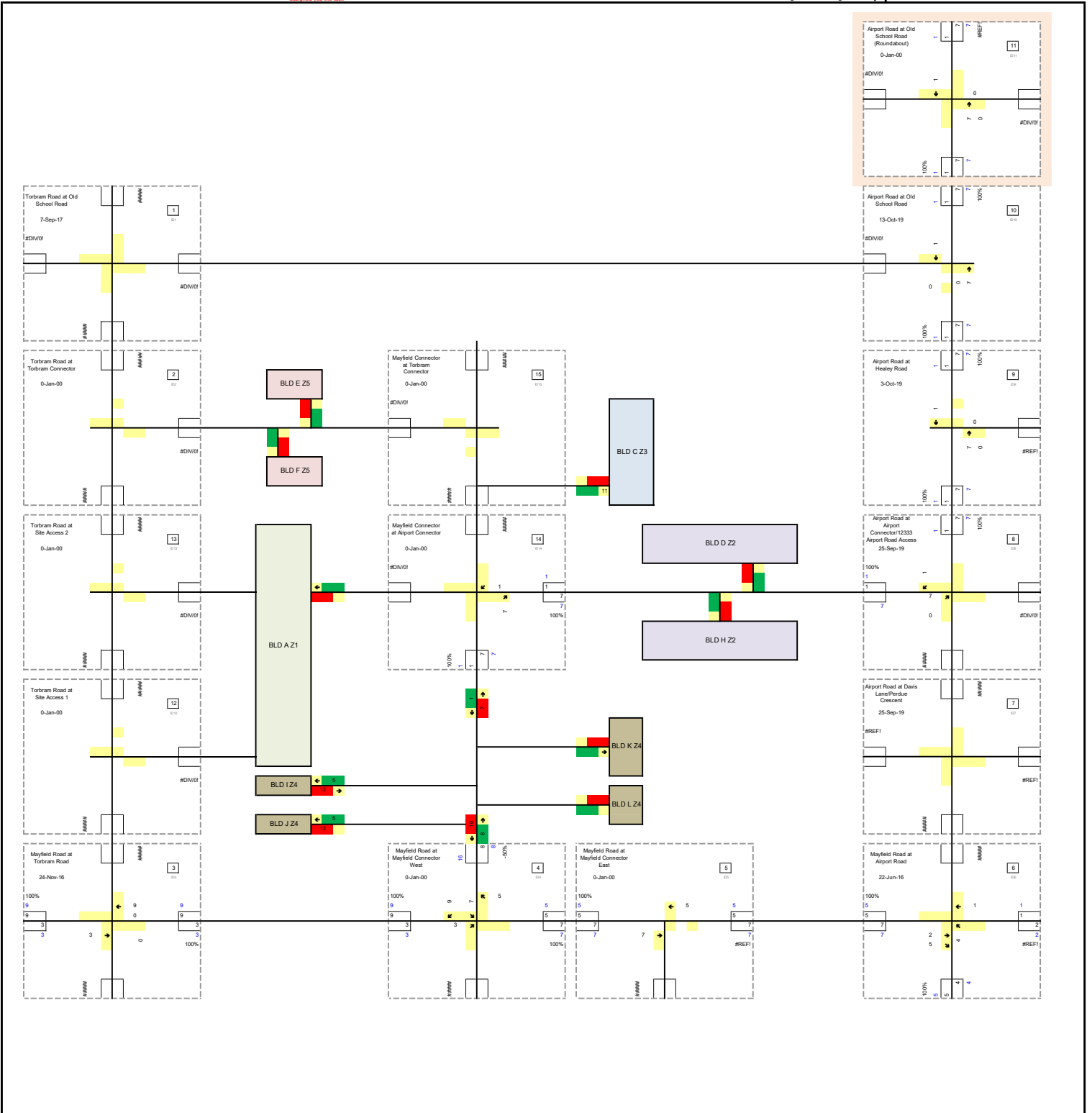
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	9	9	9
Out	23	23	23

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name	Tullamore Industrial	TRIP DISTRIBUTION AND ASSIGNMENT
Project Number	2022-5842	
Current Table:	Trip Distribution Z5 Trip Dist	

AM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				100%				100%
2	West via Old School								
3	East Via Mayfield		100%				100%		
4	East via Healey								
5	South Via Torbram			30%					
6	South Via Airport			70%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

PM									
Gateway Number	Location	CARS				TRUCKS			
		N	E	S	W	N	E	S	W
1	West via Mayfield				100%				100%
2	West via Old School								
3	East Via Mayfield		100%				100%		
4	East via Healey								
5	South Via Torbram			30%					
6	South Via Airport			70%				100%	
7	North Via Torbram								
8	North Via Airport	100%				100%			
9									
10									
11									
12									
13									
14									
15									
	TOTAL	100%	100%	100%	100%	100%	100%	100%	100%

Time Period	CARS				Total	TRUCKS				Total
	N	E	S	W		N	E	S	W	
AM (IN)	20.0%	10.0%	35.0%	35.0%	100.0%	20.0%	10.0%	35.0%	35.0%	100.0%
AM (OUT)	10.0%	20.0%	45.0%	25.0%	100.0%	10.0%	20.0%	45.0%	25.0%	100.0%
PM (IN)	15.0%	12.0%	44.0%	29.0%	100.0%	15.0%	12.0%	44.0%	29.0%	100.0%
PM (OUT)	30.0%	10.0%	20.0%	40.0%	100.0%	30.0%	10.0%	20.0%	40.0%	100.0%



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z5 Car AM

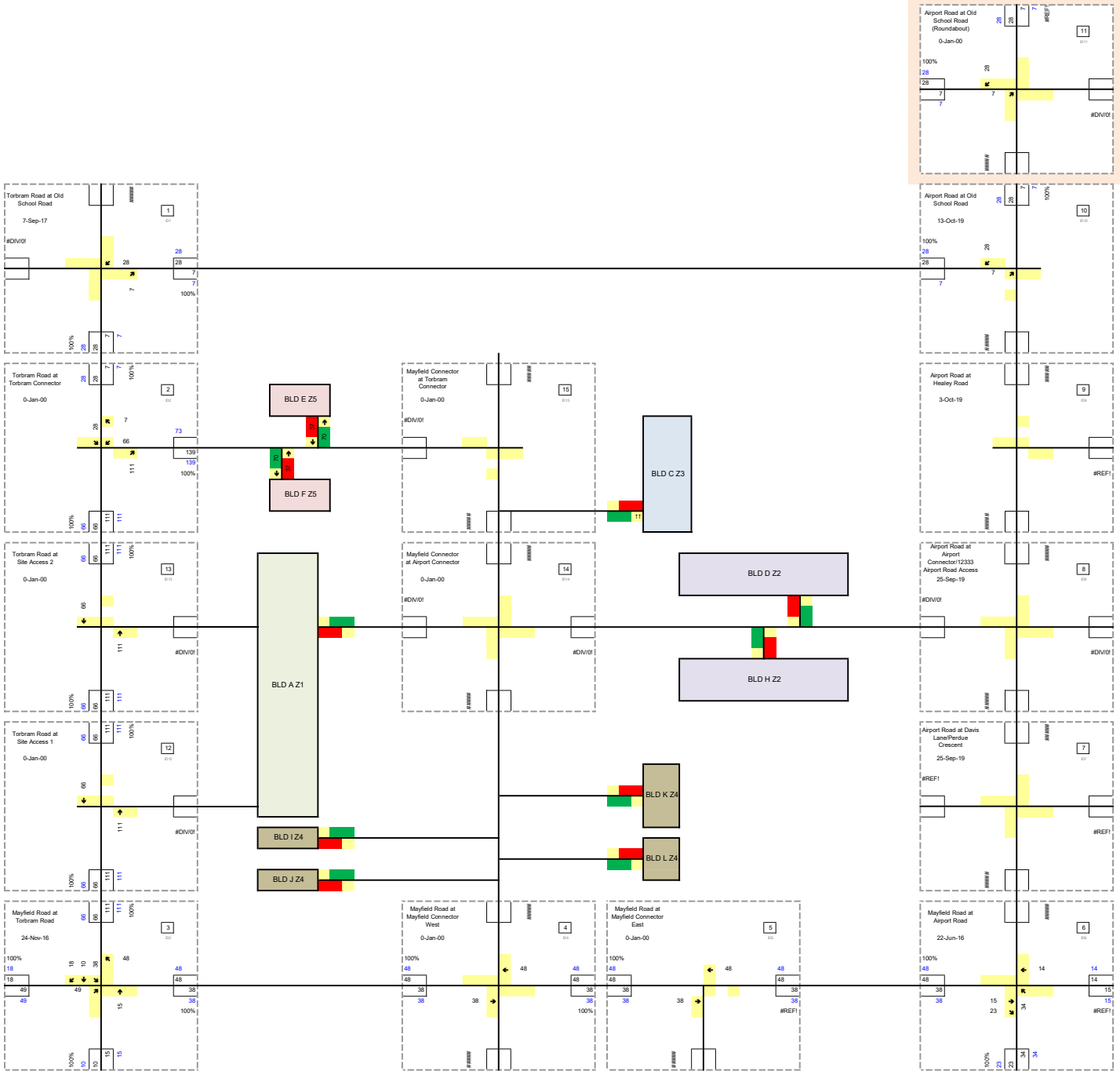
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	139	139	139
Out	73	73	73

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace\*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Passenger Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z5 Car PM

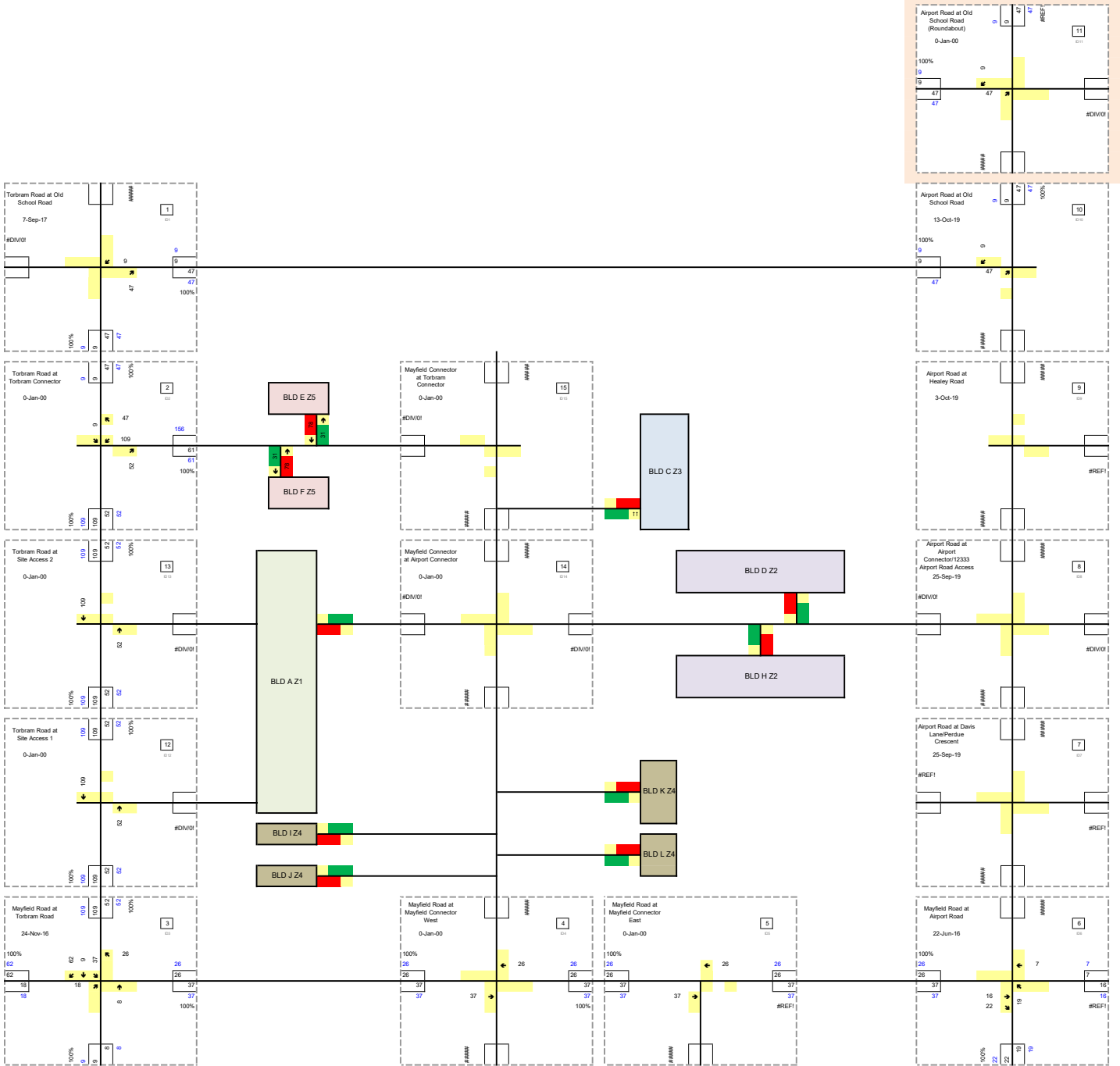
Row 1	Number
Row 2	Number
Balancing?	Yes

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	61	61	61
Out	156	156	156

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace\*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday AM Peak Hour
Current Table:	Trip Assignment Z5 Truck AM

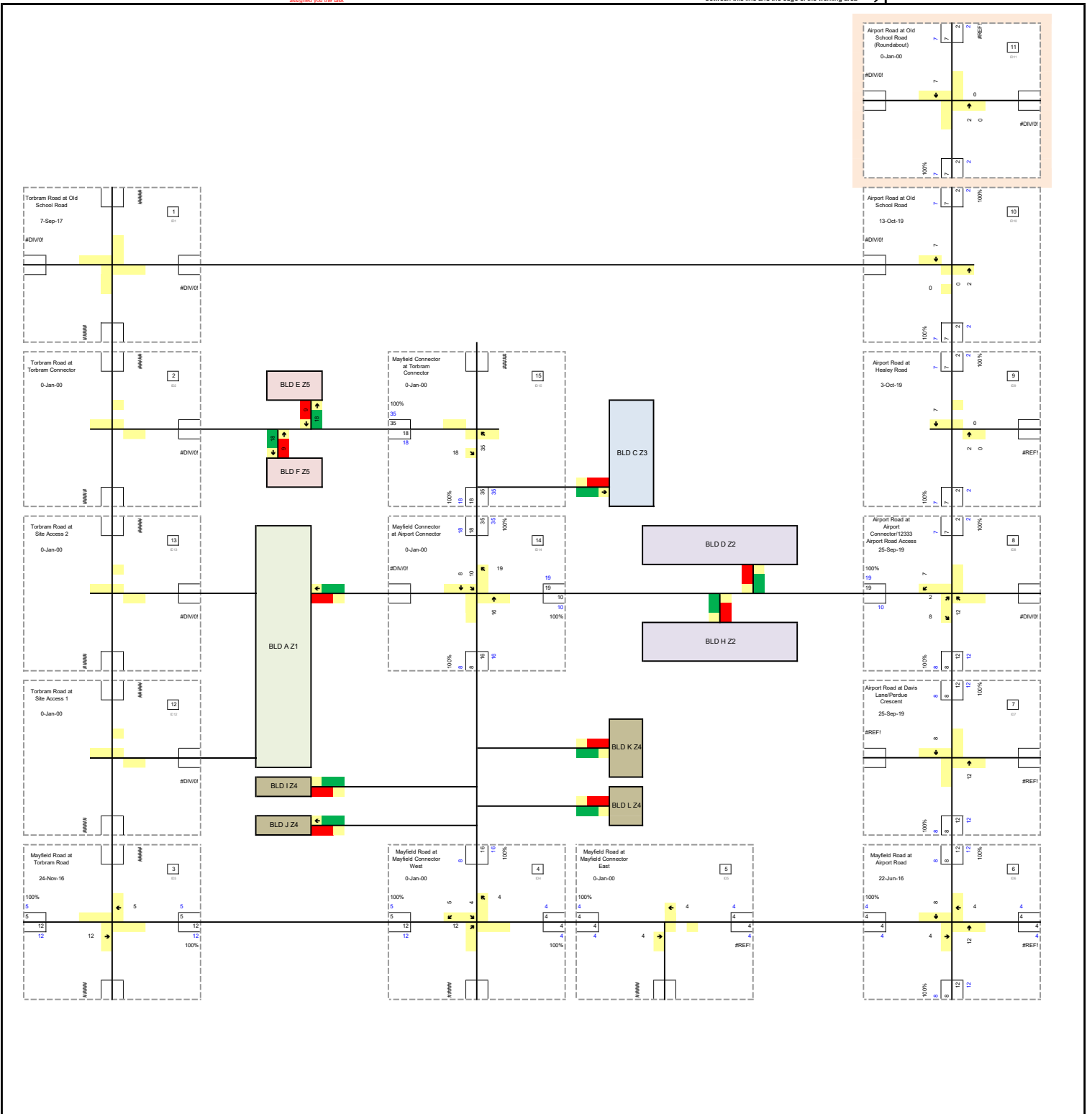
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	35	35	35
Out	18	18	18

To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



Project Name:	Tullamore Industrial
Project Number:	2022-5842
Scenario:	Site Traffic - Zone 1 Heavy Truck Vehicles
Time Period:	Weekday PM Peak Hour
Current Table:	Trip Assignment Z5 Truck PM

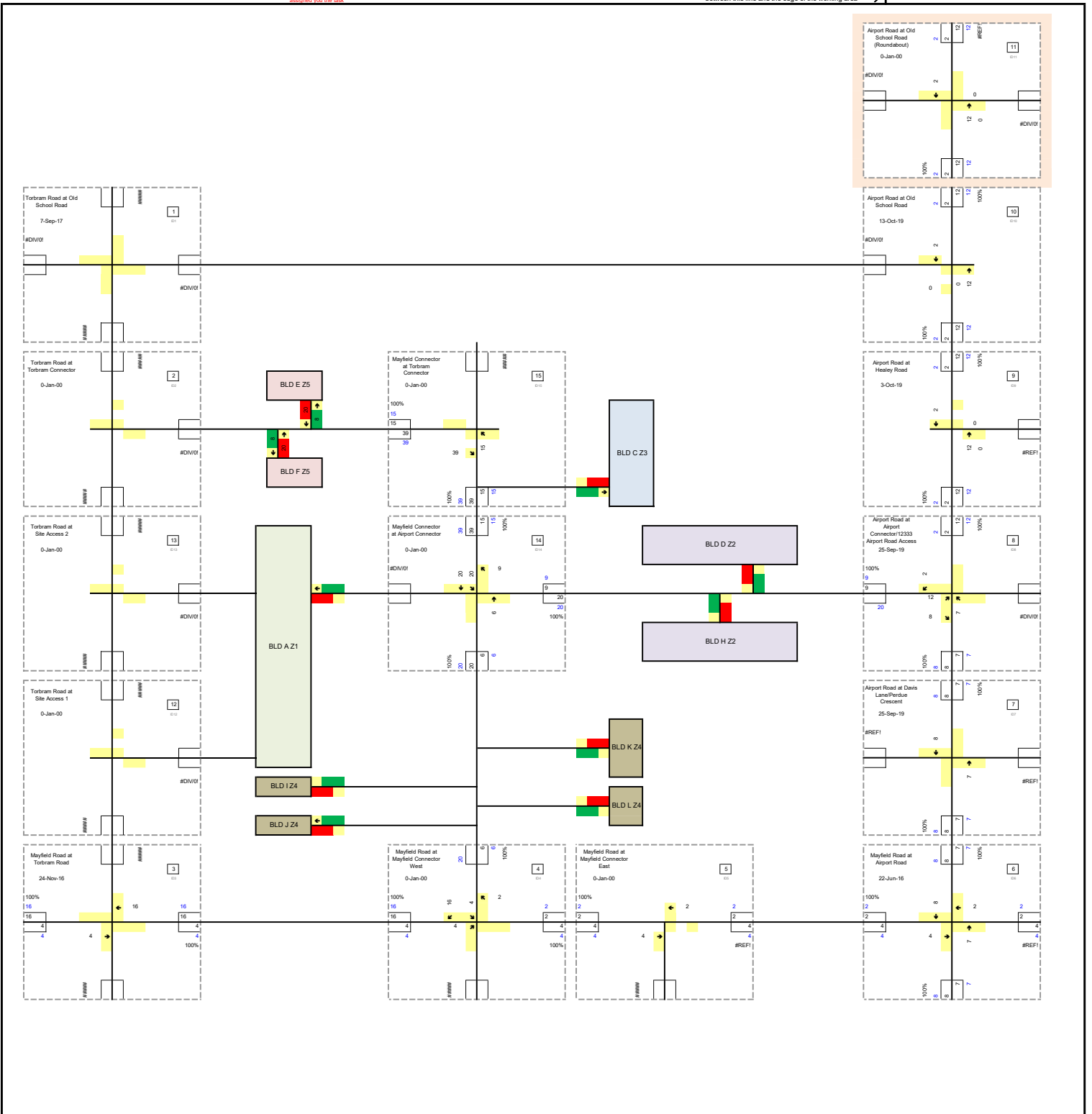
Row 1	Number
Row 2	Number
Balancing?	Yes

The general trip assignment trips can be seen to the right for information. If you are unfamiliar with how to set up the site trips please speak to the person that assigned you the task.

Trips	Actual Trips (Connect to Trip Gen Sheet)	Check 1 - Site Access(es)	Check 2 - Network Boundaries
In	15	15	15
Out	39	39	39

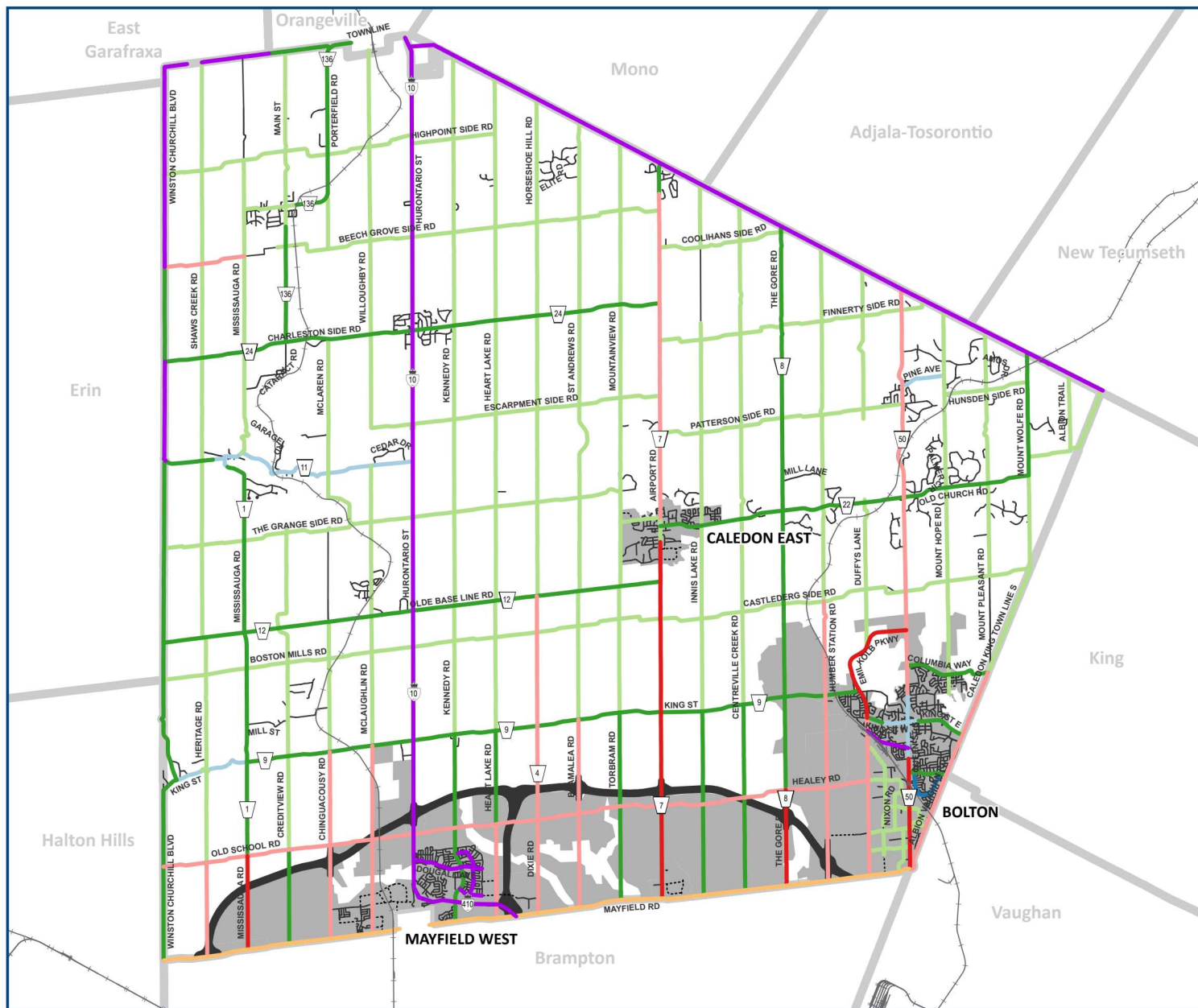
To remove the formulas in the turning movements press Ctrl + H to start find and replace with the work area selected. Find and replace \*

To expand working area insert columns at any column between this line and the edge of the working area



# Appendix N

## Town of Caledon Official Plan Relevant Excerpts



## Draft Schedule "G4" Road Right-of-Way Widths

### Town of Caledon Official Plan

- Municipal Boundary
- Urban Area
- Protected Transportation Corridor
- 20 Metre ROW
- 22 Metre ROW
- 26 Metre ROW
- 30 Metre ROW
- 36 Metre ROW
- 45 Metre ROW
- 50 Metre ROW
- 99 Metre ROW
- Local Road
- Planned Future Roads
- Rail

Sources: Town of Caledon  
Projection: UTM NAD83 Zone 17

This map is illustrative only. Do not rely on it as being a precise indicator of routes, locations of features, not as a guide to navigation. The Town of Caledon shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

0 1 2 4 6 8 km



## Other Heritage Matters

### Rehabilitation of Mineral Resource Extraction Areas of Cultural Heritage Interest.

**4.4.67** The Town is characterized by a number of historic mineral resource extraction areas of cultural heritage interest and value that include former nineteenth and early twentieth century quarries, brick works and lime kilns. The Town will encourage the identification, designation and conservation of historic mineral resource extraction areas.

### Adaptive Re-Use in Prime Agricultural Areas and Rural Lands.

**4.4.68** Where appropriate in Prime Agricultural Areas and Rural Lands, and in accordance with the provisions of this Plan and any other relevant legislation, regulations, policy or by-law, the retention and conservation of non-residential built heritage resources, such as barns, will be encouraged through their conservation and sympathetic adaptive re-use.

## Density Bonuses

**4.4.69** Through the use of bonusing, and in the context of development applications, the Town may permit increases to the density limits applicable to a proposed development in order to conserve cultural heritage resources in a manner satisfactory to the Town. Such bonusing will ensure retention of existing cultural heritage resources on the Subject Lands and avoid adverse impact to adjacent or nearby cultural heritage resources.

## 4.5 Our Mobility Plan to Connect Caledon

### Vision

The Town of Caledon has developed transportation policies to ensure that both people and goods can safely and efficiently move across the Town and across the region. The Town will have a multimodal transportation system that is safe, equitable, convenient, economical, efficient, low-carbon and sustainable for the movement of people and goods and is well-integrated with the envisioned land

use designations and development within the Town and adjacent municipalities.

In order to achieve more sustainable transportation practices in the future, the Town has devised policies to provide an integrated, diverse transportation system for all residents and businesses that is safe, convenient, affordable, efficient, minimizes environmental impacts, and manages future demand and congestion. A low-carbon transportation system is a crucial element toward the objective of net-zero emissions, recognizing that over half of the Town's greenhouse gas emissions are attributed to transportation, including commuters, commercial vehicles, and trucks.

To reach sustainability targets and net-zero emissions, the Town intends to reduce single-occupant vehicle dependency by supporting and promoting sustainable modes through efficient inter and intra-regional transit connections, the introduction and periodic update of an Active Transportation Master Plan, complete streets design principles, parking strategies that balance modal choice objectives with operational needs, and the support of carpooling/carsharing and bike infrastructure. The Town will also promote and support the use of zero-emission vehicles through the implementation of more electrical vehicle charging infrastructure.

## Objectives

**4.5.1** Through this Official Plan, the Town will endeavour to:

- a) Develop an environmentally sustainable transportation system that allows for safe, convenient, economical, equitable, and efficient movement of people (including persons with disabilities), goods and services.
- b) Develop a transportation system that supports connections to the Region of Peel and the rest of the Greater Toronto and Hamilton.
- c) Encourage and support sustainable mobility options such as public transit, active transportation, and car-sharing through further investment into facilities and by ensuring seamless integration with other modes of transportation.
- d) Increase active transportation mode shares, through the development of a safe and well-connected active transportation network that prioritizes a high level of protection for cycling and pedestrian facilities and is well-integrated with active transportation networks in adjacent municipalities.



- e) Create and regularly update an Active Transportation Master Plan for the Town that seeks to create a safer community through the provision of new pedestrian and cycling facilities, trail networks and complete streets
- f) Establish a connected and continuous grid system for the street network to support convenient and efficient travel by all modes of transportation.
- g) Embrace a transportation system that prioritizes transportation equity by recognizing that auto-mobile based transportation systems disproportionately affect vulnerable residents. This includes impacts to low-income residents, children, seniors, and persons with disabilities, and others who are restricted in movement caused by auto-mobile dependency. Freedom of mobility is a fundamental human right, therefore a transportation system needs to accommodate this vision.
- h) Collaborate and coordinate with the Province, the Region of Peel, Metrolinx and neighbouring municipalities to encourage these authorities to maintain, connect and improve roads and services under their jurisdiction within the Town, as appropriate, and ensure that the Caledon transportation system is well-integrated with the surrounding region and protects for future transportation facilities.
- i) Support the Climate Change objectives and policies of this Plan by developing a transportation system that targets net-zero emissions through the prioritization of transit and active transportation facilities and the development of a community-wide zero-emission vehicle strategy, including expansion of public vehicle charging infrastructure.
- j) Prioritize transit investments within Centres and Corridors by maximizing the use of existing and planned transit infrastructure in accordance with the policies of this Plan, with consideration of the existing and planned level of transit service and potential impacts on nearby neighbourhoods.

## General Policies

- 4.5.2** The Town will adopt complete streets design principles to prioritize travel of all modes and ensure safety of all ages and abilities within the existing and new built form.
- 4.5.3** The Town will prioritize transit and active transportation in all transportation network updates and expansion, and

# Appendix O

## Town of Caledon Relevant Zoning By-Law Excerpts

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## SECTION 5

### PARKING, LOADING AND DELIVERY STANDARDS

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#### 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 <i>Parking</i> Requirements
<i>Apartment, Accessory</i>	1 <i>parking space</i> per each 70m <sup>2</sup> or portion thereof to a maximum of 2 <i>parking spaces</i>
<i>Bed &amp; Breakfast Establishment</i>	1 <i>parking space</i> per <i>guest room</i> , in addition to the minimum <i>parking</i> requirement for a <i>detached dwelling</i>
<i>Building, Apartment</i>	1.5 <i>parking spaces</i> per <i>dwelling unit</i> + 0.25 <i>parking spaces</i> per unit for visitor parking in a designated visitor <i>parking area</i>
<i>Country Inn</i>	1 <i>parking space</i> per <i>guest room</i> , in addition to the minimum <i>parking</i> requirement for a <i>detached dwelling</i>
<i>Day Care, Private Home</i>	No requirement
<i>Dwelling, Back-to-Back Townhouse</i>	2 <i>parking spaces</i> per <i>dwelling unit</i> plus 0.25 visitor <i>parking spaces</i> for each <i>dwelling unit</i> . Such visitor <i>parking spaces</i> shall not be located on exclusive use lands
<i>Dwelling, Detached</i>	2 <i>parking spaces</i> per <i>dwelling unit</i>
<i>Dwelling, Duplex</i>	2 <i>parking spaces</i> per <i>dwelling unit</i>

<i>Dwelling, Linked</i>	<i>2 parking spaces per dwelling unit</i>
<i>Dwelling, Semi-Detached</i>	<i>2 parking spaces per dwelling unit</i>
<i>Dwelling, Townhouse</i>	<i>2 parking spaces per dwelling unit + 0.25 parking spaces per unit for visitors on a lot with four or more dwelling units</i>
<i>Dwelling Unit, Accessory</i>	<i>1 parking space per each 70m<sup>2</sup> or portion thereof to a maximum of 2 parking spaces</i>
<i>Home Business (ORM)</i>	<i>Parking spaces in addition to the required parking for the residential use shall be provided in accordance with the following:</i> <ul style="list-style-type: none"> <li>• 0-10m<sup>2</sup> - no additional <i>parking spaces</i></li> <li>• &gt;10m<sup>2</sup> - 1 <i>parking space</i></li> </ul>
<i>Home Industry (ORM)</i>	<i>Parking spaces in addition to the required parking for the residential use shall be provided in accordance with the following:</i> <ul style="list-style-type: none"> <li>• 0-10m<sup>2</sup> - no additional <i>parking spaces</i></li> <li>• &gt;10m<sup>2</sup> - 1 <i>parking space</i></li> </ul>
<i>Home Occupation</i>	<i>Parking spaces in addition to the required parking for the residential use shall be provided in accordance with the following:</i> <ul style="list-style-type: none"> <li>• 0-10m<sup>2</sup> - no additional <i>parking spaces</i></li> <li>• &gt;10m<sup>2</sup> - 1 <i>parking space</i></li> </ul>
<i>Seniors Retirement Facility</i>	<i>1.5 parking spaces per dwelling unit + 0.25 parking spaces per unit for visitor parking in a designated visitor parking area</i>

### 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**

<b>Type or Nature of Use</b>	<b>Minimum Off-Street <i>Parking Requirements</i></b>
<i>Adult Day Centre</i>	<i>1 parking space per staff member + 1 parking space per 30 m<sup>2</sup> of net floor area or portion thereof</i>
<i>Animal Hospital</i>	<i>1 parking space per 16.5 m<sup>2</sup> of net floor area or portion thereof</i>
<i>Art Gallery</i>	<i>1 parking space per 100 m<sup>2</sup> of net floor area or portion thereof where no retail; 1 per 60 m<sup>2</sup> or portion thereof where retail component</i>
<i>Artisan Operation</i>	<i>1 parking space per 100 m<sup>2</sup> of net floor area or portion thereof where no retail; 1 per 60 m<sup>2</sup> or portion thereof where retail component</i>

<i>Artist Studio &amp; Gallery</i>	1 <i>parking space</i> per 100 m <sup>2</sup> of <i>net floor area</i> or portion thereof where no retail; 1 per 60 m <sup>2</sup> or portion thereof where retail component
<i>Bakery</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Business Office</i>	1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Cannabis-Related Use – Indoor</i>	1 <i>parking space</i> per 100 m <sup>2</sup> of <i>gross floor area</i> or portion thereof
<i>Clinic</i>	1 <i>parking space</i> per 16.5 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Club</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Community Centre</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Day Nursery</i>	1 <i>parking space</i> per staff member + 1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Dry Cleaning or Laundry Plant</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Dry Cleaning or Laundry Outlet</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Factory Outlet</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Financial Institution</i>	1 <i>parking space</i> per 25 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Fitness Centre</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Funeral Home</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Golf Course</i>	12 <i>parking spaces</i> per hole
<i>Hospital</i>	1.5 <i>parking spaces</i> per bed
<i>Hotel</i>	1 <i>parking space</i> per <i>guest room</i> , plus 1 <i>parking space</i> per 10 m <sup>2</sup> or portion thereof of <i>net floor area</i> devoted to meeting, dining and banquet facilities.
<i>Industrial Hemp-Related Use - Indoor</i>	1 <i>parking space</i> per 100m <sup>2</sup> of <i>gross floor area</i> or portion thereof
<i>Industrial Use</i>	<p>a) If accessory office and retail <i>net floor areas</i> are 15% or less of the total <i>net floor area</i>:</p> <ul style="list-style-type: none"> <li>Up to 5,000 m<sup>2</sup> – 1 <i>parking space</i> per 60 m<sup>2</sup> <i>net floor area</i> or portion thereof</li> <li>5,000 to 10,000 m<sup>2</sup> – 83 <i>parking spaces</i>, plus 1 <i>parking space</i> per 90 m<sup>2</sup> of <i>net floor area</i> or portion thereof over 5,000 m<sup>2</sup></li> <li>Over 10,000 m<sup>2</sup> – 139 <i>parking spaces</i>, plus 1 <i>parking space</i> per 170 m<sup>2</sup> or portion thereof of <i>net floor area</i> or portion thereof over 10,000 m<sup>2</sup></li> </ul>

	<p>b) If associated office and retail <i>net floor areas</i> are more than 15% of the total <i>net floor area</i>:</p> <p>In addition to the standards contained above in (a), the applicable <i>net floor areas</i> exceeding 15% shall be subject to the applicable office or retail parking requirements</p>
<i>Laundromat</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Library</i>	1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Light Equipment Rental Establishment</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Long Term Care Facility</i>	0.5 <i>parking spaces</i> per bed
<i>Medical Centre</i>	1 <i>parking space</i> per 16.5 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Medical Laboratory</i>	1 <i>parking space</i> per 16.5 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Merchandise Service Shop</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Motel</i>	1 <i>parking space</i> per <i>guest room</i> , plus 1 <i>parking space</i> per 10 m <sup>2</sup> or portion thereof of <i>net floor area</i> devoted to meeting, dining and banquet facilities.
<i>Motor Vehicle Body Shop</i>	3 <i>parking spaces</i> per service bay plus 1 <i>parking space</i> per 20 m <sup>2</sup> or portion thereof of <i>net floor area</i> for the office and any retail use
<i>Motor Vehicle Gas Bar</i>	1 <i>parking space</i> per 20 m <sup>2</sup> or portion thereof of <i>net floor area</i> exclusive of fuel dispensing spaces
<i>Motor Vehicle Repair Facility</i>	3 <i>parking spaces</i> per service bay plus 1 <i>parking space</i> per 20 m <sup>2</sup> or portion thereof of <i>net floor area</i> for the office and any retail use
<i>Motor Vehicle Service Centre</i>	3 <i>parking spaces</i> per service bay plus 1 <i>parking space</i> per 20 m <sup>2</sup> or portion thereof of <i>net floor area</i> for the office and any retail use
<i>Motor Vehicle uses not otherwise listed</i>	1 <i>parking space</i> per 20 m <sup>2</sup> or portion thereof of <i>net floor area</i> exclusive of display and storage parking
<i>Museum</i>	1 <i>parking space</i> per 100 m <sup>2</sup> of <i>net floor area</i> or portion thereof where no retail; 1 per 60 m <sup>2</sup> or portion thereof where retail component
<i>On-farm Diversified Use</i>	1 <i>parking space</i> per 100 m <sup>2</sup> of <i>gross floor area</i> or portion thereof
<i>Park</i>	5 <i>parking spaces</i> per hectare or portion thereof
<i>Personal Service Shop</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Place of Assembly</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Place of Entertainment</i>	the greater of 1 <i>parking space</i> per 6 seats capacity or 1 <i>parking space</i> per 10m <sup>2</sup> of <i>net floor area</i> or portion thereof

<i>Place of Worship</i>	the greater of 1 <i>parking space</i> per 6 persons design capacity of the worship area or 1 <i>parking space</i> for 10 m <sup>2</sup> of <i>net floor area</i> or portion thereof of the worship areas and any <i>accessory use</i> areas, excluding residential uses.
<i>Printing &amp; Processing Service Shop</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Recreational Use</i>	30 <i>parking spaces</i> per ball field 30 <i>parking spaces</i> per soccer field 4 <i>parking spaces</i> per tennis court
<i>Research Establishment</i>	1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Restaurant</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Retail Store</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Sales Service and Repair Shop</i>	1 <i>parking space</i> per 20 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>School</i>	Elementary – 1 <i>parking space</i> per 100 m <sup>2</sup> of <i>gross floor area</i> or portion thereof and 1 <i>parking space</i> per portable  Secondary – 1.5 <i>parking spaces</i> per 100 m <sup>2</sup> of <i>gross floor area</i> or portion thereof and 1 <i>parking space</i> per portable classroom
<i>Studio</i>	1 <i>parking space</i> per 100 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Sports Arena</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Training Facility</i>	1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Transportation Depot</i>	a) If associated office or retail <i>net floor areas</i> are 15% or less of the total <i>net floor area</i> : <ul style="list-style-type: none"> <li>Up to 7,000 m<sup>2</sup> – 1 <i>parking space</i> per 90 m<sup>2</sup> <i>net floor area</i> or portion thereof</li> <li>7,000 to 20,000 m<sup>2</sup> – 78 <i>parking spaces</i>, plus 1 <i>parking space</i> per 145 m<sup>2</sup> of <i>net floor area</i> or portion thereof over 7000 m<sup>2</sup></li> <li>Over 20,000 m<sup>2</sup> – 168 <i>parking spaces</i>, plus 1 <i>parking space</i> per 170 m<sup>2</sup> of <i>net floor area</i> or portion thereof over 20,000 m<sup>2</sup></li> </ul> b) If associated office or retail <i>net floor areas</i> are more than 15% of the total <i>net floor area</i> :  In addition to the standards contained above in (a), the applicable <i>net floor areas</i> exceeding 15% shall be subject to the applicable office or retail parking requirements
<i>Warehouse</i>	a) If associated office or retail <i>net floor areas</i> are 15% or less of the total <i>net floor area</i> : <ul style="list-style-type: none"> <li>Up to 7,000 m<sup>2</sup> – 1 <i>parking space</i> per 90 m<sup>2</sup> <i>net floor area</i> or portion thereof</li> <li>7,000 to 20,000 m<sup>2</sup> –</li> </ul>

	<p>78 <i>parking spaces</i>, plus 1 <i>parking space</i> per 145 m<sup>2</sup> of <i>net floor area</i> or portion thereof over 7000 m<sup>2</sup></p> <ul style="list-style-type: none"> <li>Over 20,000 m<sup>2</sup> – 168 <i>parking spaces</i>, plus 1 <i>parking space</i> per 170 m<sup>2</sup> of <i>net floor area</i> or portion thereof over 20,000 m<sup>2</sup></li> </ul> <p>b) If associated office or retail <i>net floor areas</i> are more than 15% of the total <i>net floor area</i>:</p> <p>In addition to the standards contained above in (a), the applicable <i>net floor areas</i> exceeding 15% shall be subject to the applicable office or retail parking requirements</p>
<i>Warehouse, Public Self-Storage</i>	1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof within the office; plus 1 <i>parking space</i> per 100 m <sup>2</sup> of <i>net floor area</i> or portion thereof of the <i>building</i>
<i>Warehouse, Retail</i>	1 <i>parking space</i> per 30 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Warehouse, Wholesale</i>	1 space per 80 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Wellness Centre</i>	1 <i>parking space</i> per 15 m <sup>2</sup> of <i>net floor area</i> or portion thereof
<i>Veterinary Hospital</i>	1 <i>parking space</i> per 16.5 m <sup>2</sup> of <i>net floor area</i> or portion thereof
Uses permitted by this By-law other than those listed in this Table	1 <i>parking space</i> per 45 m <sup>2</sup> of total <i>floor area</i> or portion thereof

Where the minimum parking requirement in an Exception Zone is different from the above requirements, the applicable minimum *parking* provisions of the Exception 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 spaces* 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 Driveways**

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 areas* 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**

<i>Uses</i>
<i>Airport</i>
<i>Building Supply Outlet</i>
<i>Bulk Storage Facility</i>
<i>Cannabis-Related Use - Indoor</i>
<i>Contractor's Facility</i>
<i>Dry Cleaning or Laundry Plant</i>

<i>Equipment Storage Building</i>
<i>Home Improvement Centre</i>
<i>Industrial Cannabis-Related Use – Outdoor</i>
<i>Industrial Hemp-Related Use – Indoor</i>
<i>Industrial Hemp-Related Use – Outdoor</i>
<i>Industrial Use</i>
<i>Light Equipment Rental Establishment</i>
<i>Maintenance Garage, Accessory</i>
<i>Motor Vehicle Body Shop</i>
<i>Motor Vehicle Repair Facility</i>
<i>Gravel Pit</i>
<i>Quarry</i>
<i>Research Establishment</i>
<i>Sanitary Landfill Site</i>
<i>Sewage Treatment Facility</i>
<i>Supermarket</i>
<i>Transportation Depot</i>
<i>Warehouse</i>
<i>Warehouse, Public Self-Storage</i>
<i>Warehouse, Wholesale</i>
<i>Waste Transfer Facility</i>
<i>Waste Processing Plant</i>

**TABLE 5.3.2**

<b>For that portion of the <i>Net Floor Area</i> of a use in Table 5.3.1 that is:</b>	<b><i>Loading Space Requirements (1)</i></b>
300 m <sup>2</sup> or less	Nil
301 m <sup>2</sup> to 2,325 m <sup>2</sup>	1 <i>loading space</i>
2,326 m <sup>2</sup> to 7,440 m <sup>2</sup>	2 <i>loading spaces</i>

7,441 m <sup>2</sup> or greater	3 <i>loading spaces</i> plus 1 additional <i>loading space</i> for each additional 9,300 m <sup>2</sup> or portion thereof in excess of 7,441 m <sup>2</sup>
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**Footnote to Table 5.3.2:**

(1) A *public use* with a *floor area* greater than 301m<sup>2</sup>, owned and operated by the Town, shall require a maximum of one *loading 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**

<b>Uses</b>	<b>Delivery Space Requirements</b>
<i>Adult Day Centre</i>	1 per <i>building</i> per <i>lot</i>
<i>Animal Hospital</i>	1 per <i>building</i> per <i>lot</i>
<i>Business Office</i>	1 per <i>building</i> per <i>lot</i>
<i>Community Centre</i>	1 per <i>building</i> per <i>lot</i>
<i>Clinic</i>	1 per <i>building</i> per <i>lot</i>
<i>Convenience Store</i>	1 per <i>building</i> per <i>lot</i>
<i>Crisis Care Facility</i>	1 per <i>building</i> per <i>lot</i>
<i>Day Care Facility</i>	1 per <i>building</i> per <i>lot</i>
<i>Day Nursery</i>	1 per <i>building</i> per <i>lot</i>
<i>Drive-Through Service Facility</i>	1 per <i>building</i> per <i>lot</i>
<i>Financial Institution</i>	1 per <i>building</i> per <i>lot</i>
<i>Fitness Centre</i>	1 per <i>building</i> per <i>lot</i>
<i>Funeral Home</i>	2 per <i>lot</i>
<i>Grocery Store</i>	1 per <i>building</i> per <i>lot</i>
<i>Hospital</i>	2 per <i>lot</i>
<i>Hotel</i>	1 for each 20 guest rooms or portion thereof
<i>Library</i>	1 per <i>building</i> per <i>lot</i>
<i>Long-Term Care Facility</i>	1 per <i>building</i> per <i>lot</i>
<i>Merchandise Service Shop</i>	1 per <i>building</i> per <i>lot</i>
<i>Motel</i>	1 for each 20 guest rooms or portion thereof
<i>Museum</i>	1 per <i>building</i> per <i>lot</i>
<i>Place of Assembly</i>	1 per <i>building</i> per <i>lot</i>
<i>Place of Entertainment</i>	1 per <i>building</i> per <i>lot</i>
<i>Place of Worship</i>	1 per <i>building</i> per <i>lot</i>

<i>Private Club</i>	1 per <i>building</i> per <i>lot</i>
<i>Restaurant</i>	1 per <i>building</i> per <i>lot</i>
<i>Retail Store</i>	1 per <i>building</i> per <i>lot</i>
<i>School</i>	2 per <i>lot</i>
<i>Sports Arena</i>	1 per <i>building</i> per <i>lot</i>
<i>Tourist Camp</i>	1 for each accessory management office, plus 1 for each recreation building
<i>Training Facility</i>	1 per <i>building</i> per <i>lot</i>
<i>Wellness Centre</i>	1 per <i>building</i> per <i>lot</i>

#### **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.

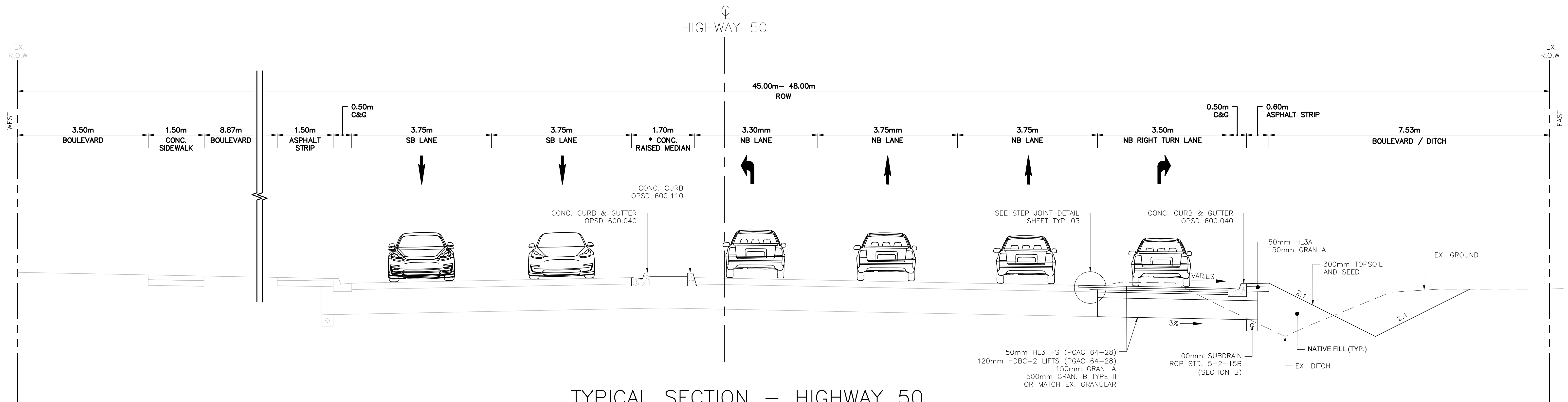
#### **5.4.7 Surface Treatment**

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.



# Appendix P

## George Bolton - Hwy 50 Cross Section

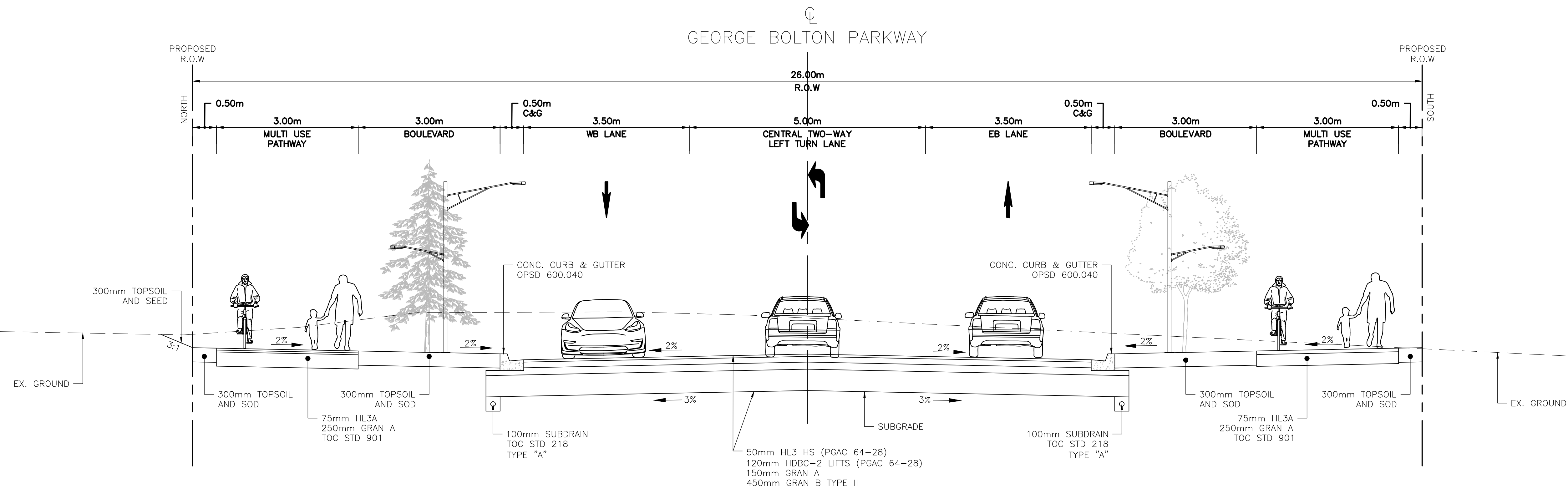


### TYPICAL SECTION – HIGHWAY 50

STA. 9+821.457 TO STA. 10+067.327

\* SOUTH = STA. 9+947.938 TO STA. 9+978.688

\* NORTH = STA. 10+020.177 TO STA. 10+067.327



### TYPICAL SECTION – GEORGE BOLTON PARKWAY

STA. 1+026.81 TO STA. 1+541.60

NO.	BY	DATE	REVISION	CONS. CHECKED	TOWN APPR'D
1	A.L.	22/04/22	60% DESIGN REVIEW SUBMISSION		

**APPROVED FOR CONSTRUCTION**  
THIS APPROVAL CONSTITUTES A GENERAL REVIEW AND DOES NOT CERTIFY DIMENSIONAL ACCURACY.  
  
THIS APPROVAL IS SUBJECT TO THE FURTHER CERTIFICATION OF THE "AS RECORDED" WORKS BY A REGISTERED PROFESSIONAL ENGINEER OF THE PROVINCE OF ONTARIO.  
  
DATE: \_\_\_\_\_ APPROVED BY: \_\_\_\_\_  
MANAGER OF ENGINEERING SERVICES

BENCH MARK:

ENGINEER'S STAMP

PROJECT NAME  
**GEORGE BOLTON PARKWAY EXTENSION**

CONSULTANT  
**BURNSIDE**  
R.J. Burnside & Associates Limited  
6990 Creditview Road, Unit 2  
Mississauga, Ontario, L5N 5R9  
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Fax (905) 821-1809  
Web www.rjburnside.com

**REGION OF PEEL**

**TOWN OF CALEDON**

**GEORGE BOLTON PARKWAY / HIGHWAY 50**  
TYPICAL CROSS SECTIONS

SCALE: **N.T.S.** PROJECT No. **300052765**

DESIGNED BY: **R.B.** DRAWN BY: **R.B.** DRAWING No. **TYP-01**

CHECKED BY: **A.L.** DATE: **2021/05/19** SHEET No. **46 OF 94**

NOTE: ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.

# Appendix Q

## Town of Caledon Official Plan Conformance to Collector Network

Official Plan Conformance: The Town of Caledon Draft Official Plan (2022) issues a series of mobility objectives per Section 4.5 (Our Mobility Plan to Connect Caledon). The ability of the proposed development's collector network (Street's A, B and C) and its conformance with these policy objectives are summarized in the Table below. In addition, potential collector road network opportunities beyond the subject lands were also reviewed to confirm that the proposed development does not preclude the establishment of a future collector network beyond the subject lands that satisfy the Town's policy objectives.

Section 4.5 – Our Mobility Plan to Connect Caledon		
Draft OP Section	Objective	Conformance with Objective
4.5.1	<p>Through this Official Plan, the Town will endeavour to:</p> <ul style="list-style-type: none"> <li>a) Develop an environmentally sustainable transportation system that allows for safe, convenient, economical, equitable, and efficient movement of people (including persons with disabilities), goods and services.</li> <li>b) Develop a transportation system that supports connections to the Region of Peel and the rest of the Greater Toronto and Hamilton.</li> <li>c) Encourage and support sustainable mobility options such as public transit, active transportation, and car-sharing through further investment into facilities and by ensuring seamless integration with other modes of transportation.</li> <li>d) Increase active transportation mode shares, through the development of a safe and well-connected active transportation network that prioritizes a high level of protection for cycling and pedestrian facilities and is wellintegrated with active transportation networks in adjacent municipalities.</li> <li>e) Create and regularly update an Active Transportation Master Plan for the Town that seeks to create a safer community through the provision of new pedestrian and cycling facilities, trail networks and complete streets</li> <li>f) Establish a connected and continuous grid system for the street network to support convenient and efficient travel by all modes of transportation.</li> <li>g) Embrace a transportation system that prioritizes transportation equity by recognizing that auto-mobile based transportation systems disproportionately affect vulnerable residents. This includes impacts to low-income residents, children, seniors, and persons with disabilities, and others who are restricted in movement caused by auto-mobile dependency. Freedom of mobility is a</li> </ul>	<p><b><u>Subject Lands</u></b></p> <p>The subject lands propose collector roadways that connect with existing and planned intersections. The cross sections proposed have 3.0m multi use paths on both sides of the roadways which provide physical separation for active transportation from automobile paths of travel within the development. Street B connects to Block 48-2 roadways south of Mayfield Road, facilitating a well-connected active transportation network with existing MUP on the south side of Mayfield and planned sidewalks and MUPs within Block 48-2. Transit opportunities within the proposed development are currently being explored with Brampton Transit to modify adjacent routes (Route 30) to serve the development; with potential bus stops located at internal intersections.</p> <p><b><u>Potential Collector Network</u></b></p> <p>The potential collector road network opportunities beyond the subject development can support a modified grid network that allows for north-south and east-west connectivity to support mobility options for future development. Potential collector links will have opportunity to connect future development with the Regional network (Airport Road and Mayfield Road) and will also have opportunities for proximal connections near the future</p>

	<p>fundamental human right, therefore a transportation system needs to accommodate this vision.</p> <p>h) Collaborate and coordinate with the Province, the Region of Peel, Metrolinx and neighbouring municipalities to encourage these authorities to maintain, connect and improve roads and services under their jurisdiction within the Town, as appropriate, and ensure that the Caledon transportation system is well-integrated with the surrounding region and protects for future transportation facilities.</p> <p>i) Support the Climate Change objectives and policies of this Plan by developing a transportation system that targets net-zero emissions through the prioritization of transit and active transportation facilities and the development of a communitywide zero-emission vehicle strategy, including expansion of public vehicle charging infrastructure.</p> <p>j) Prioritize transit investments within Centres and Corridors by maximizing the use of existing and planned transit infrastructure in accordance with the policies of this Plan, with consideration of the existing and planned level of transit service and potential impacts on nearby neighbourhoods</p>	<p>Highway 413 route for increased convenience if desired. It is expected that a future collector road network will also have adequate ROW to support active transportation infrastructure on both sides of the roadway, with the ability to accommodate future transit service when warranted.</p>
4.5.2	<p>The Town will adopt complete streets design principles to prioritize travel of all modes and ensure safety of all ages and abilities within the existing and new built form</p>	<p><b>Subject Lands</b></p> <p>All internal collector roadways have been designed with 3.0m MUP on both sides providing pedestrian and cyclist connectivity to the external roadway network, with physical separation from automobile paths of travel. Transit service is also supportable within the proposed street design, and opportunities to provide internal transit service via modification of adjacent routes are currently being discussed with Brampton Transit and Town of Caledon. The pavement width will also be able to accommodate automobile traffic including truck traffic associated with the industrial nature of the proposed development.</p>
4.5.3	<p>The Town will prioritize transit and active transportation in all transportation network updates and expansion, and consider lower minimum parking requirements in appropriate areas to encourage transit usage.</p>	<p><b>Potential Collector Network Opportunities</b></p> <p>The potential network opportunities beyond the subject site is expected to support all modes of travel with physical separation of active transportation facilities from vehicle paths of travel where possible, subject to any constraints that me be identified during more detailed review. The potential for a modified grid</p>

		system will also support active transportation connectivity and opportunities for transit route expansion with direct pedestrian connections to future bus stops.
4.5.45	<p>The Town will examine the need for a public transit service, as warranted by economic feasibility and service demand, and will incorporate the transit function in the planning and development process by:</p> <ul style="list-style-type: none"> <li>a) Establishing a grid system for roads as development occurs, to enable effective transit use for community services, the efficient movement of traffic and emergency vehicle access;</li> <li>b) Including future public transit facilities in the formulation of secondary plans;</li> <li>c) Providing future transit facilities in staging settlement expansions and future development;</li> <li>d) Including future public transit facilities in the approval process for subdivision plans, site plans and other development proposals;</li> <li>e) Locating high density residential or commercial developments on anticipated transit routes or within 400 metres of those routes;</li> <li>f) Locating retirement homes and community facilities on anticipated transit routes or within 200 to 300 metres of those routes; and,</li> <li>g) Encouraging the use of park 'n' ride automobile facilities and ride sharing centres, to access inter-regional and municipal transit services connecting the Town with urban centres</li> </ul>	<p><b><u>Subject Lands</u></b></p> <p>A modified grid system is proposed within the subject development.</p> <p>Public transit facilities including potential bus stop locations are identified as part of the internal collector network, with bus stop locations within 400m. Discussions with Brampton Transit are ongoing with regards to providing service within the proposed development via modifying adjacent transit routes.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p> <p>The opportunities for a potential collector network beyond the proposed development have the ability to support a modified grid pattern that can support future transit service as demand warrants. Such a network can also support future development within 400m of potential transit routes with shorter connections if required depending on the future land uses envisioned.</p>
4.5.53	<p>The Town will strive to achieve a significant increase in vehicle occupancy rates on an overall basis by continuing to work with the Region of Peel to encourage employers/employees to choose sustainable modes of transportation for their daily commutes</p>	<p><b><u>Subject Lands</u></b></p> <p>TDM opportunities have been identified to support increased mode share within the proposed development, which include planning for expanded transit service, carpool priority parking spaces, encouraging future tenants to join Travel Management Associations such as Smart Commute to assist with trip planning and provision of bike facilities on-site. Specific TDM measures for each block will be confirmed through future Site Plan Applications.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p> <p>The opportunities for a potential collector network beyond the proposed development have the ability to support increase</p>

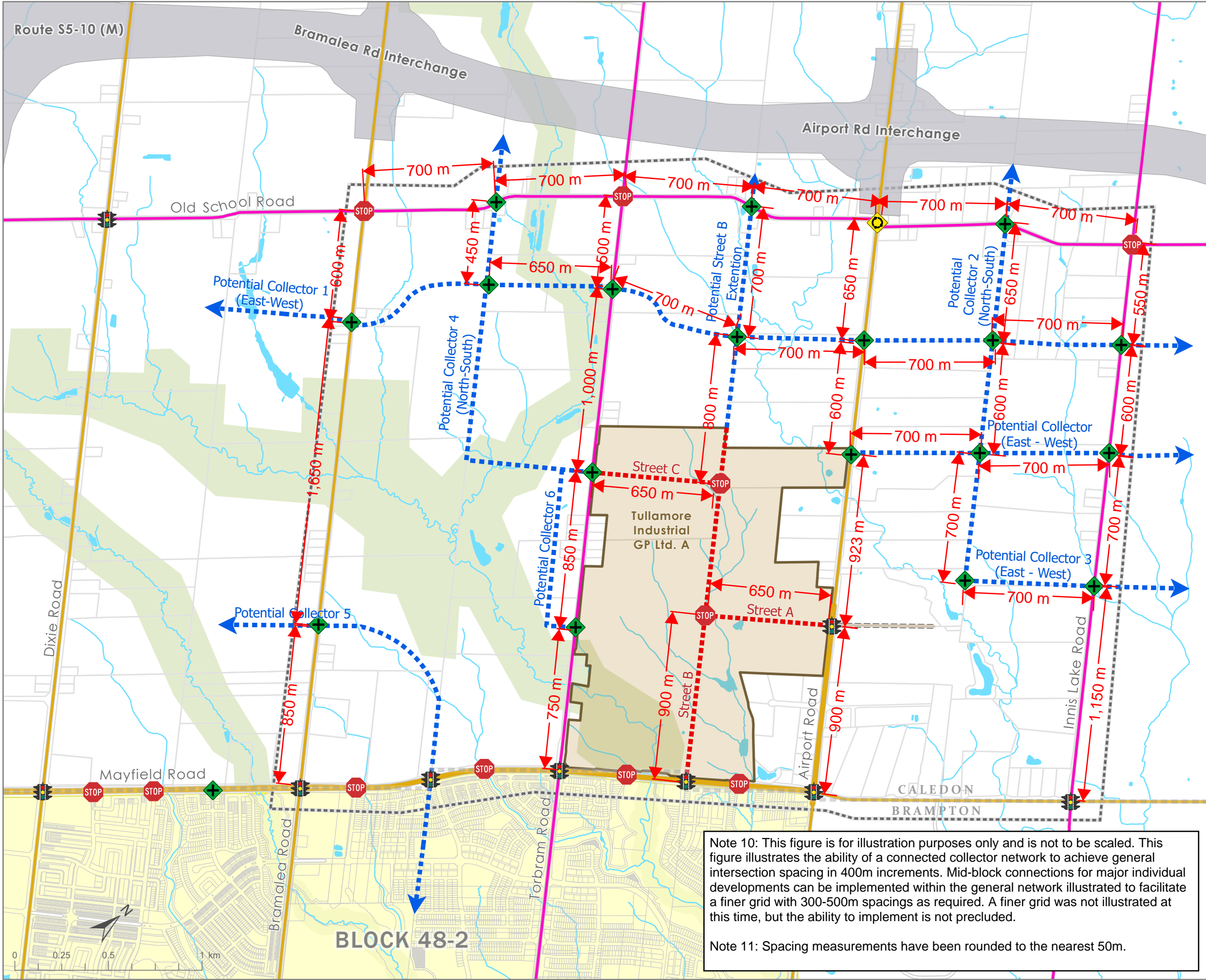
		active transportation mode share, and future transit routes. It is expected that future developments will develop TDM plans to support increased sustainable mode share and reduce SOV trips.
4.5.54	In new developments in the designated greenfield areas, the Town will require the creation of street configurations, densities and urban form that prioritize walking, cycling and that can accommodate the early integration and sustained viability of transit services.	<p><b><u>Subject Lands</u></b></p> <p>A modified grid system is proposed within the subject development. MUPs are proposed on both sides of the internal street network that prioritize walking and cycling. Public transit facilities including potential bus stop locations are identified as part of the internal collector network and discussions with Brampton Transit are ongoing with regards to providing service within the proposed development via modifying adjacent transit routes.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p> <p>The opportunities for a potential collector network beyond the proposed development have the ability to prioritize active transportation modes by providing dedicated facilities and connectivity via a modified grid pattern. Similarly, future transit service is supportable and will have the potential to be implemented when demand warrants.</p>
4.5.68	<p>The Town will promote active transportation modes in collaboration with relevant jurisdictions and agencies by implementing infrastructure elements and requiring active transportation systems for new developments that include but are not limited to:</p> <ul style="list-style-type: none"> <li>a) Provisioning for safe and convenient active transportation facilities such as sidewalks, multi-use paths, trails, cycling infrastructure, and bicycle parking for all development applications;</li> <li>b) Establishing Site Plan control requirements to improve pedestrian and cycling connectivity at and between a site;</li> <li>c) Building safe active transportation facilities that make connections between settlement areas and rural settlement areas;</li> <li>d) Designing sidewalks and cycling facilities to remain consistent with Accessibility for Ontarians with Disabilities Act standards to achieve a barrier-free network accessible for all ages and abilities;</li> </ul>	<p><b><u>Subject Lands</u></b></p> <p>All internal collector roadways have been designed with 3.0m MUP on both sides providing pedestrian and cyclist connectivity to the external roadway network, with physical separation from automobile paths of travel. As cycling and bike facilities will be on both sides of the roadway, pedestrian and cycling facilities will be located within the vicinity of all future transits stops. Bicycle parking provisions are encouraged for individual blocks and should be confirmed as part of future Site Plan applications. During detailed design, adequate signage and design of AT facilities will also be required.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p>

	<p>e) Providing a degree of separation for bicycle facilities where applicable;</p> <p>f) Providing bike parking and storage facilities at transit terminals and MTSAs</p> <p>g) Providing safe pedestrian and cycling facilities in the vicinity of transit stops and stations;</p> <p>h) Provisioning for pedestrian facilities on all existing, new and reconstructed roads during the review of development applications and as part of road construction and reconstruction projects, while also considering the impact to the character of the community and surrounding land uses and design;</p> <p>i) Adopting requirements for minimum bicycle parking spaces, bicycle storage facilities and other active transportation amenities, such as showers and change rooms, in conjunction with all high/medium density residential developments, employment nodes and other appropriate locations;</p> <p>j) Integrating active transportation facilities where possible when designing and constructing/reconstructing roads, bridges, and intersections; and</p> <p>k) Ensuring that all active transportation facilities meet or exceed industry safety standards, and are supported through appropriate design, signage and consistent safety enforcement</p>	<p>The potential network opportunities beyond the subject site is expected to support all modes of travel with physical separation of active transportation facilities from vehicle paths of travel where possible, subject to any constraints that may be identified during more detailed review. Future development is also expected to provide active transportation supportive infrastructure as well as the establishment of site-specific TDM plans. A future collector system beyond the subject lands will have the ability to prioritize active transportation infrastructure as required.</p>
4.5.72	<p>The Town will encourage the development of a system of bicycle and pedestrian facilities to link major public open spaces, activity centres, public washrooms, and the transportation network in a manner that enhances the quality of life for residents, businesses and visitors.</p>	<p><b><u>Subject Lands</u></b></p> <p>All internal collector roadways have been designed with 3.0m MUP on both sides providing pedestrian and cyclist connectivity to the external roadway network, with physical separation from automobile paths of travel and direct linkages to major open spaces such as the potential park southwest of the subject lands, and planned open spaces within Block 48-2. Transit service is also supportable within the proposed street design, and opportunities to provide internal transit service via modification of adjacent routes are currently being discussed with Brampton Transit and Town of Caledon. The pavement width will also be able to accommodate automobile traffic including truck traffic associated with the industrial nature of the proposed development.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p>



		<p>The potential network opportunities beyond the subject site is expected to support all modes of travel with physical separation of active transportation facilities from vehicle paths of travel where possible, subject to any constraints that may be identified during more detailed review. The potential for a modified grid system will also support active transportation connectivity and opportunities for transit route expansion with direct pedestrian connections to future bus stops.</p>
4.5.73	<p>Consideration will be given in all new subdivision and development proposals to provisions for multi-use links with transportation networks.</p>	<p><b><u>Subject Lands</u></b></p> <p>All internal collector roadways have been designed with 3.0m MUP on both sides providing pedestrian and cyclist connectivity to the external roadway network, with physical separation from automobile paths of travel. Transit service is also supportable within the proposed street design, and opportunities to provide internal transit service via modification of adjacent routes are currently being discussed with Brampton Transit and Town of Caledon. The pavement width will also be able to accommodate automobile traffic including truck traffic associated with the industrial nature of the proposed development.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p> <p>The potential network opportunities beyond the subject site is expected to support all modes of travel with physical separation of active transportation facilities from vehicle paths of travel where possible, subject to any constraints that may be identified during more detailed review. The potential for a modified grid system will also support active transportation connectivity and opportunities for transit route expansion with direct pedestrian connections to future bus stops.</p>
4.5.74	<p>To provide for the safe efficient movement of trucks through and within the Town and minimize the impact of heavy trucks on residential areas, the Town:</p> <p>a) Will generally encourage the primary through truck traffic onto high-capacity arterial roadways, where road pavement structure is deemed structurally</p>	<p><b><u>Subject Lands</u></b></p> <p>The subject site abuts the Regional Roads of Airport Road and Mayfield Road and proposes collector connections to these roadways. Heavy Truck Traffic generated by the subject site will</p>

	<p>adequate. The Town will endeavour to keep the arterial roads open to truck traffic throughout the year;</p> <p>b) Will permit truck use of medium capacity arterials and collector roadways only as connectors to service high-capacity arterial routes, pending structural suitability;</p> <p>c) Will prohibit truck traffic on all local roadways, except in cases of local delivery and only in the absence of alternative acceptable routing;</p> <p>d) May restrict heavy truck usage on part or all thereof of any municipal right-of-way through passage of a "No Heavy Truck" by-law; and,</p> <p>e) May endeavour to impose seasonal load restrictions on arterial and collector roadways for reasons of structural inadequacy. Primary route closures due to seasonal load restrictions will be discouraged and every effort will be made to re-route truck traffic onto acceptable routes for the term of the restriction</p>	<p>not require use of local roadways to access the site, beyond the new collectors proposed as part of the development proposal.</p> <p><b><u>Potential Collector Network Opportunities</u></b></p> <p>For future development beyond the subject lands, a potential collector road network in the future has the potential to connect with Airport Road and Mayfield Road to serve Heavy Truck Traffic as warranted, which would facilitate future access to the Regional road network.</p> <p>It is expected that future developments that may require Heavy Truck usage would evaluate truck routes to comply with Town by-law requirements on truck restrictions; or make appropriate arrangements with the Town to ensure any alternate routes will be on roadways with structural adequacy.</p>
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1. This drawing is the exclusive property of C.F. Crozier & Associates Inc. and the reproduction of any part without prior written consent of this office is strictly prohibited.
2. Any visualization of a potential road network beyond the Subject Lands represents a potential road network that could be established as part of plans and is not intended to represent a specific proposal of collector road alignments through adjacent lands.
3. The potential collector road network illustrated is intended to show the capability of establishing a network of collector roads beyond the Subject Lands.
4. The illustration of a potential collector roadway on this map is not intended to represent a specific alignment, but represents a connection in principle, subject to additional review. Alignments and crossings of Natural Heritage Systems or Highway 413 Corridor would be assessed as part of future study.
5. Further study by the Town and/or adjacent landowners will be required to support collector road network proposals for lands beyond the subject lands, as part of future development applications and planning efforts.
6. Please be advised, the drawing is prepared based on public information available at the time of the drawing and is to be used for discussion and illustration purposes only.
7. The preferred route outline of Highway 413 is based on current preliminary alignments illustrated by the MTO at the time of preparing this drawing and are subject to change.
8. Proposed Traffic controls at Mayfield Road are based on approved reports associated with Block 48-2 development applications.
9. Future Intersection controls at potential collector road network intersections would be subject to further review and warrant analyses.

- Potential Future Collector Roadway
- Tullamore Lands Proposed Internal Collector Roadway
- Existing Major Arterial
- Existing Minor Arterial
- Private Access Road to 12333 and 12203 Airport Rd
- Signalized Intersection
- Stop-Controlled Intersection
- Roundabout Controlled Intersection
- Future Intersection (Control type to be confirmed in the future)
- Highway 413 Preferred Route
- Extended Study Area
- Municipal Boundary
- Tullamore Lands
- Block 48-2 Residential
- Watercourse
- Waterbody
- Greenbelt Outer Boundary
- Parcels

Note 10: This figure is for illustration purposes only and is not to be scaled. This figure illustrates the ability of a connected collector network to achieve general intersection spacing in 400m increments. Mid-block connections for major individual developments can be implemented within the general network illustrated to facilitate a finer grid with 300-500m spacings as required. A finer grid was not illustrated at this time, but the ability to implement is not precluded.

Note 11: Spacing measurements have been rounded to the nearest 50m.



Tullamore Lands  
Town of Caledon Potential Collector Network  
- Intersection Spacing